

# McINTIRE INVESTMENT INSTITUTE

AT THE UNIVERSITY OF VIRGINIA



TESLA

Jeffrey Suddarth | October 2013



# Executive Summary

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- Despite recent profitability, Tesla remains valued at levels unseen anywhere else in the market
- Although it maintains a unique position in the industry, Tesla is an auto manufacturer, and will eventually exhibit similar margins to other “high end” auto manufacturers
- Even if Tesla is able to meet its production goals, the cash flow to shareholders will not be sufficient to justify the company’s current valuation



# Company Overview

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- Tesla Motors, Inc. is a California based manufacturer and seller of electric cars and electric vehicle powertrain components
- Was founded in 2003 and had its IPO in 2010
- Headquartered in Palo Alto, California
- Owns and operates a supercharging network in North America and Europe and showrooms in North America, Europe, and Asia



# Model S

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# Model X

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# Elon Musk

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- CEO & Chief Product Architect of Tesla Motors
- Founder and Current CEO & CTO of SpaceX
- Cofounder of PayPal



“In the past I said it’s really crazy to short Tesla. Is it so crazy to short Tesla right now? I mean it’s not as crazy but I still think it’s probably not a good idea.”- Elon Musk

# Financial Summary

## Tesla Stock Performance (October 2010 – Present)



- Share Price: 180.95
- 52 Week Range: 26.86-194.50
- Market Cap: 21.98B
- P/E: N/A

- Beta: .53
- EPS: -2.09
- LTM EBITDA: \$156 Million



# Increased Competition (Economy Cars)

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- Tesla's long term growth strategy includes the release of a moderately priced economy car by 2017-2018, by this point the EV market will have grown considerably, and Tesla will face stiff competition
- BMW i3 will be released next year, a fully electric vehicle with 120 mile range and \$42,000 price point before government incentives
- Nissan Leaf and Chevrolet Volt have already sold over 16,000 models each this year, with the Leaf setting new sales records each month of 2013
- VW plans to release a fully electric Golf in 2014, signifying that all the world's largest automakers are releasing or have plans to release fully electric plug-ins (The Golf has been the best selling car in Europe since 2008).
- Tesla will also have to sell these cars at a much lower margin than its luxury counterparts, forcing it to focus on volume something its not currently set up for.





# Increased Competition (Luxury)

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- General Motors has plans to release a 200 mile range Cadillac to compete directly with the Tesla Model S
- BMW will release the i8 in 2014, a high performance hybrid with 22 mile purely electric range
- Porsche and Audi will release 6 plug-in Hybrids in 2014
- There is not that much room for increased growth in the luxury car market, with total luxury vehicles sold being around 400,000 vehicles per year, it's hard to imagine Tesla selling more than 30,000-40,000 Model S EVs per year, limiting revenues until new models can be released



# Public Comparables

| Comparable Companies       | Share Price     | Market Cap       | Last Twelve Months |                 |              | EV/EBITDA     |              |              |
|----------------------------|-----------------|------------------|--------------------|-----------------|--------------|---------------|--------------|--------------|
|                            |                 |                  | Revenue            | EBITDA          | Margin       | 2013E         | 2014E        | 2015E        |
| <b>Autos</b>               |                 |                  |                    |                 |              |               |              |              |
| BMW                        | \$106.71        | \$68,601         | \$102,050          | \$13,984        | 13.7%        | 11.9x         | 11.2x        | 10.4x        |
| Daimler AG                 | \$76.42         | \$81,692         | \$152,434          | \$17,778        | 11.7%        | 13.4x         | 12.6x        | 10.1x        |
| Ford                       | \$17.63         | \$69,436         | \$142,501          | \$11,991        | 8.4%         | 12.3x         | 11.6x        | 10.1x        |
| GM                         | \$37.58         | \$52,018         | \$152,842          | \$7,904         | 5.2%         | 5.3x          | 5.0x         | 3.8x         |
| Audi                       | \$831.97        | \$35,774         | \$65,384           | \$3,251         | 5.0%         | N/A           | N/A          | N/A          |
| <b>Autos Median</b>        | <b>\$57.00</b>  | <b>\$69,019</b>  | <b>\$147,468</b>   | <b>\$12,988</b> | <b>10.0%</b> | <b>12.1x</b>  | <b>11.4x</b> | <b>10.1x</b> |
| <b>Tech</b>                |                 |                  |                    |                 |              |               |              |              |
| Oracle                     | \$33.87         | \$156,845        | \$37,371           | \$16,810        | 45.0%        | 7.8x          | 7.2x         | 6.9x         |
| Microsoft                  | \$33.32         | \$277,554        | \$77,849           | \$30,103        | 38.7%        | 6.5x          | 6.4x         | 6.4x         |
| Apple                      | \$464.68        | \$422,160        | \$169,404          | \$55,868        | 33.0%        | 7.3x          | 6.9x         | 6.5x         |
| <b>Tech Median</b>         | <b>\$33.87</b>  | <b>\$277,554</b> | <b>\$77,849</b>    | <b>\$30,103</b> | <b>38.7%</b> | <b>7.3x</b>   | <b>6.9x</b>  | <b>6.5x</b>  |
| <b>Start-Up/Hot Stocks</b> |                 |                  |                    |                 |              |               |              |              |
| Facebook                   | \$45.23         | \$110,149        | \$6,118            | \$2,763         | 45.2%        | 25.0x         | 19.1x        | 15.0x        |
| Zynga                      | \$3.27          | \$2,630          | \$1,122            | \$168           | 15.0%        | 75.7x         | 34.4x        | 15.8x        |
| Concur Technologies        | \$110.50        | \$6,191          | \$507              | \$46            | 9.1%         | 51.4x         | 39.1x        | 32.1x        |
| Aspen Technology           | \$67.74         | \$3,226          | \$311              | \$60            | 19.3%        | 33.7x         | 25.5x        | 28.4x        |
| Sprouts Farmers Market     | \$44.39         | \$6,500          | \$2,185            | \$178           | 8.1%         | 39.1x         | 32.0x        | 26.4x        |
| <b>Start-Up Median</b>     | <b>\$45.23</b>  | <b>\$6,191</b>   | <b>\$1,122</b>     | <b>\$168</b>    | <b>15.0%</b> | <b>39.1x</b>  | <b>32.0x</b> | <b>26.4x</b> |
| <b>Tesla Motors</b>        | <b>\$193.37</b> | <b>\$23,485</b>  | <b>\$1,323</b>     | <b>\$156</b>    | <b>11.8%</b> | <b>126.4x</b> | <b>69.7x</b> | <b>42.8x</b> |

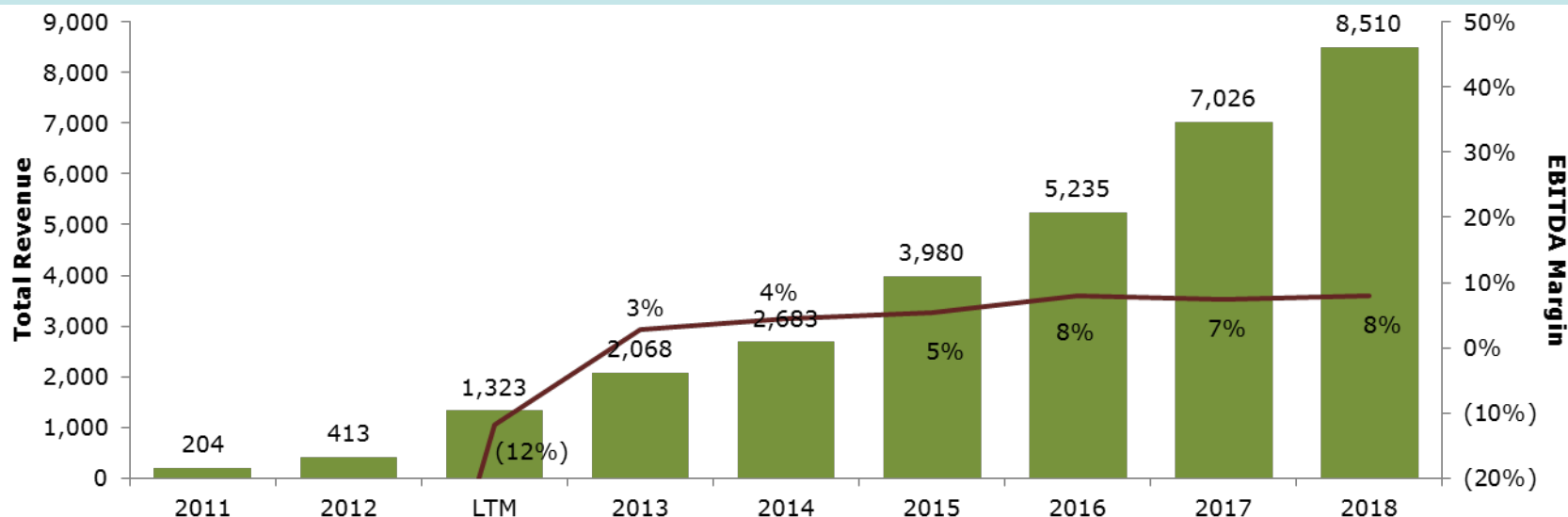
- By 2015, even those stocks with the highest growth projections begin to see a decline in EV/EBITDA, these multiples will eventually decline to fall in line with their respective industry comparables
- In Tesla's maturity it should trade on the high end of the Auto comparables group (in the 14-15x range)
  - Even in 2015 the company is projected to trade at nearly **43x EBITDA**
- I was unable to find a company that traded at a higher 2015E EV/EBITDA than Tesla



# The best case: Company meets revenue projections

- Even if the Company is able to hit its lofty revenue expectations, margin control may hold back cash flow available to shareholders
- Management has a stated gross margin goal of 25%
  - BMW: 18.6%
  - Daimler AG: 21.5%
- Programs related to the super-charger network will cause capital expenditures to remain high, limiting cash flow to shareholders

Revenue and EBITDA Margin 2011 – 2018 (Projected)



# Intrinsic Valuation

|                               | 2010 | 2011             | 2012             | LTM<br>6/30/2013   | 2013             | 2014             | 2015             | 2016             | 2017             | 2018             |
|-------------------------------|------|------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Auto Sales                    |      | 148,568          | 385,699          | 1,301,138          | 2,068,110        | 2,682,862        | 3,979,710        | 5,235,460        | 7,026,100        | 8,431,320        |
| Development Services          |      | 55,674           | 27,557           | 22,229             | 48,904           | 53,794           | 59,174           | 65,091           | 71,600           | 78,760           |
| <b>Total Revenue</b>          |      | <b>204,242</b>   | <b>413,256</b>   | <b>1,323,367</b>   | <b>2,068,110</b> | <b>2,682,862</b> | <b>3,979,710</b> | <b>5,235,460</b> | <b>7,026,100</b> | <b>8,510,080</b> |
| COGS - Auto                   |      | 115,482          | 371,658          | 1,102,993          | 1,571,764        | 2,092,632        | 3,183,768        | 4,188,368        | 5,620,880        | 6,745,056        |
| Auto Margin %                 |      | 22%              | 4%               | 15%                | 24%              | 22%              | 20%              | 20%              | 20%              | 20%              |
| COGS - Development Services   |      | 27,165           | 11,531           | 8,476              | 19,562           | 21,518           | 23,669           | 26,036           | 28,640           | 31,504           |
| Dev Services Margin %         |      | 51%              | 58%              | 62%                | 60%              | 60%              | 60%              | 60%              | 60%              | 60%              |
| Total Cost of Goods Sold      |      | 142,647          | 383,189          | 1,111,469          | 1,591,325        | 2,114,150        | 3,207,437        | 4,214,404        | 5,649,520        | 6,776,560        |
| <b>Gross Margin</b>           |      | <b>61,595</b>    | <b>30,067</b>    | <b>211,898</b>     | <b>476,785</b>   | <b>568,712</b>   | <b>772,273</b>   | <b>1,021,056</b> | <b>1,376,580</b> | <b>1,733,520</b> |
| Gross Margin %                |      | 30%              | 7%               | 16%                | 23%              | 21%              | 19%              | 20%              | 20%              | 20%              |
| SG&A                          |      | 104,102          | 150,372          | 190,715            | 289,535          | 321,943          | 397,971          | 523,546          | 702,610          | 851,008          |
| % Sales                       |      | 51%              | 36%              | 14%                | 14%              | 12%              | 10%              | 10%              | 10%              | 10%              |
| R&D                           |      | 208,981          | 273,978          | 237,904            | 248,173          | 268,286          | 318,377          | 261,773          | 351,305          | 425,504          |
| % Sales                       |      | 102%             | 66%              | 18%                | 12%              | 10%              | 8%               | 5%               | 5%               | 5%               |
| <b>Operating Profit</b>       |      | <b>(251,488)</b> | <b>(394,283)</b> | <b>(216,721)</b>   | <b>(60,924)</b>  | <b>(21,518)</b>  | <b>55,925</b>    | <b>235,737</b>   | <b>322,665</b>   | <b>457,008</b>   |
| Operating Margin %            |      | (123%)           | (95%)            |                    |                  |                  |                  |                  |                  |                  |
| Depreciation & Amortization   |      | 16,919           | 28,825           | 60,362             | 120,000          | 140,000          | 160,000          | 180,000          | 200,000          | 220,000          |
| <b>EBITDA</b>                 |      | <b>(234,569)</b> | <b>(365,458)</b> | <b>(156,359)</b>   | <b>59,076</b>    | <b>118,482</b>   | <b>215,925</b>   | <b>415,737</b>   | <b>522,665</b>   | <b>677,008</b>   |
| EBITDA Margin                 |      | (115%)           | (88%)            | (12%)              | 3%               | 4%               | 5%               | 8%               | 7%               | 8%               |
| Taxes                         |      | 489              | 136              | 420                | 500              | 500              | 500              | 500              | 500              | 500              |
| Change in Net Working Capital |      |                  | (195,839)        | 639,337            | 0                | 0                | 0                | 0                | 0                | 0                |
| Capital Expenditures          |      | 184,226          | 239,228          | 224,693            | 179,754          | 143,804          | 115,043          | 92,034           | 73,627           | 58,902           |
| <b>Free Cash Flow</b>         |      | <b>(419,284)</b> | <b>(408,983)</b> | <b>(1,020,809)</b> | <b>(121,178)</b> | <b>(25,821)</b>  | <b>100,382</b>   | <b>323,202</b>   | <b>448,538</b>   | <b>617,606</b>   |

|                               |                 |
|-------------------------------|-----------------|
| Terminal Growth Rate          | 5%              |
| WACC                          | 8%              |
| Total Enterprise Value        | \$12,889,615.09 |
| Total Debt                    | 578,740         |
| Total Equity Value            | \$12,310,875    |
| <b>Equity Value Per Share</b> | <b>\$101.37</b> |

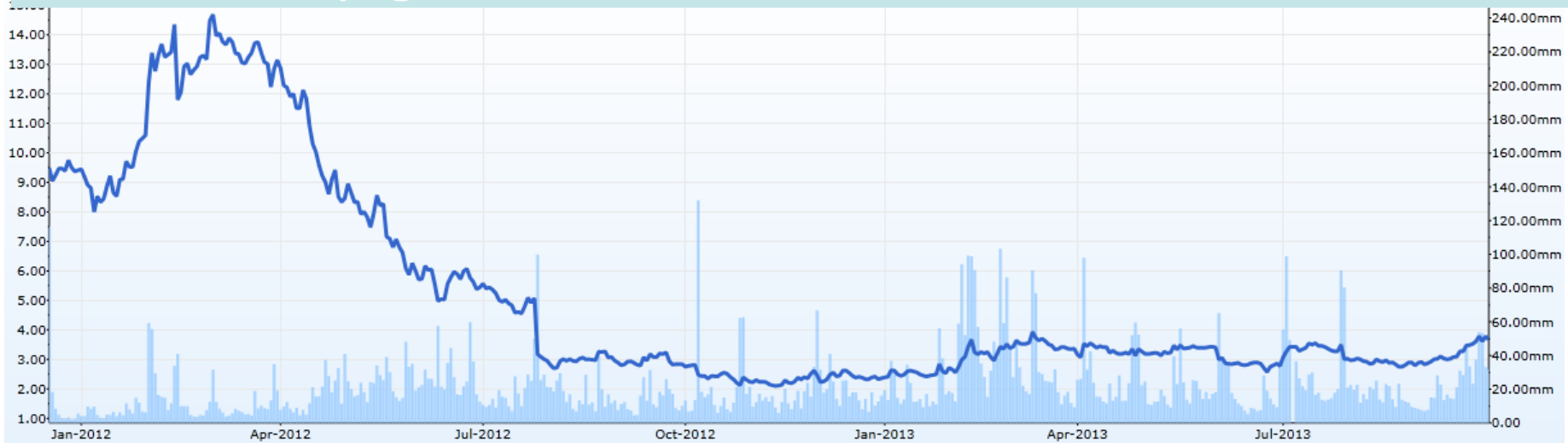
- Discounted Cash Flow Analysis reveals a price target around \$100 per share
- This price represents a “best case” revenue scenario and assumes the company meets management’s ambitious production goals



# Zynga: A Case Study in Overvaluation

- Zynga went public on December 16, 2011 at a price of \$10 per share. Over the next several months the market continued to drive up the company's share price
- Between March and July 2012 the company's stock fell from over \$14 per share to less than \$3
- Other than a series of earnings misses, there was no specific event or catalyst that caused the market to realize its mistake
  - Zynga's earnings potential had simply been overestimated

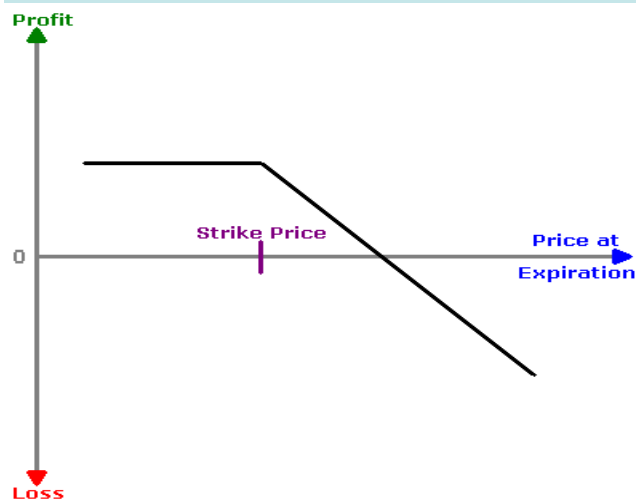
Zynga Share Price (December 2011 – Present)



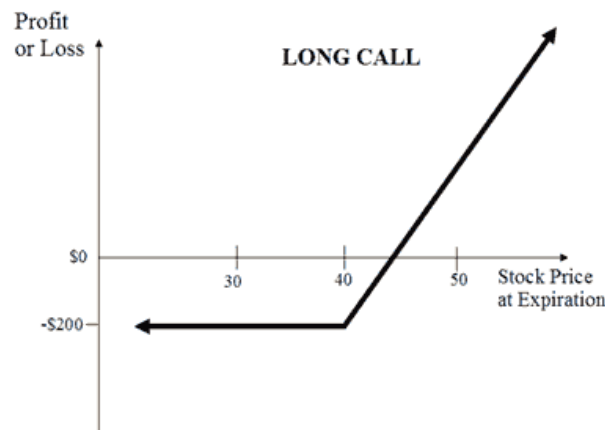
# Hedging a Short Position

- A very high proportion (27%) of Tesla stock is held up in short positions
- Any increase in the price of the stock could cause short positions to cover, driving the price of the stock even higher in what is known as a “short squeeze”
- The purest hedge against this risk would be a long call at a price in the \$210-215 range
- However, given that MII traditionally does not trade options, hedging may be more difficult

## Short Position



## Long Call Position



# Equity Research Opinions

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- Goldman Sachs recently estimated Tesla's per share value at \$94
- BofA Merrill Lynch- "***We continue to view Tesla shares as vastly overvalued and maintain our \$45 PO, which is based on a 2015e EV/EBITDA multiple of about 12X (currently 12.7X). We note that our valuation multiple is relatively consistent with the simple average of 2015 EV/EBITDA multiples for a group of 35 growth oriented tech companies, based on consensus estimates.***"
- Based off of this information, I believe it is "mom and pop" investors driving up the price of Tesla, rather than institutional investors based on the media hype the Model S has generated and the celebrity aspect of its CEO, Elon Musk.



# Recommendation

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- Based on this information I recommend that MII initiate a short position in Tesla Motors with a target price in the range of \$90-\$110



Questions?

