Analysis of Tesla's Sales Performance

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Contents

Abstract

The case study from March, 2015 written by Frank T. and David R. addresses the success and the future possible speculations about Tesla Motors. With the increasing competition in the production of electric cars, Elon Musk, the CEO of Tesla, has been trying to figure out the factors that affected the sales performance of Tesla, in the past few years. The goal of this project is to analyze what variables are potential to affect the sales performance of Tesla cars. We have collected the historical data for oil prices, stock prices, prices of other electric cars in the market and many more, in order to analyze the correlation among these factors. Further, we build a multiple linear regression model on Tesla's sales and oil prices as well as test the hypothesis we have claimed.

Keywords: normalization, regression analysis

Analysis of Tesla's Sales Performance

Elon Musk is a very successful entrepreneur with stake in three firms: SolarCity, SpaceX and Tesla Motors. Being the CEO of Tesla Motors Inc., Elon Musk thinks Tesla Motors as his legacy out of his other firms, as per the case study by Rothaermel and King (2015), suggests. The CEO of Tesla, has few speculations whether Tesla business pattern be sustainable, or will it continue to hold on its fame in the constantly increasing competition in the production of electric cars. He wants to plan and take action in order to make sure Tesla will be successful over years.

With the expansion of Tesla around the globe, majority of sales occur in USA where other international car companies of alternate energy have created quite a competitive market. The US government has been working on offering various incentives to the electric car companies so that a better infrastructure could be built for the adaption process of using electric cars since the oil prices have been sky-rocketing.

Research Question

In contemplation of the conjecture made by Elon Musk, this project aims to analyze the potential factors that might affect or have affected the sales performance of Tesla cars by building statistical models on the past sales data.

Further sections in the paper will explain the steps taken to collect the data, what type of data has been considered towards the analysis, the hypothesis we have proposed, the statistical model built following with the verification analysis of such a model.

Related Work

With the falling oil prices, there has been quite a hype around the market of electric vehicles and the other cars. Along with the other car companies, electric car companies such as Tesla, Nissan Leaf, Toyota Prius etc., have been worried about their sales with the decrease in oil prices. After the careful review of the sales performance of several cars and electric vehicles, it has been concluded that with the fall in oil prices, the high priced electric cars might not be affected but the hybrid or the plugin electric vehicles such as Volt, Bolt, Leaf and many such may face problems since they are not fully electric vehicles like Tesla cars. Hybrid cars will be affected more since they use gas to power the engine as per elaborated in Opinion (2015).

Data Collection

In order to answer the research question as stated above, the following data has been gathered through secondary sources:

Yahoo Finance: We obtained the stock prices of Tesla Motors Inc. (Nasdaq Code- TSLA) for the time period starting from January 2011 through March 2016 from Yahoo Finance. The raw data

contained daily data with a few missing data points. The raw data consists of the following fields (all prices are in US dollars):

- Date - Date for which the stock price is provided
- Open – Opening stock price ($)
- High – Highest stock price for the day ($)
- Low – Lowest stock price for the day ($)
- Close – Closing stock price ($)
- Adjusted Close – Adjusted closing stock price. An adjusted closing price is a stock's closing price on any given day of trading that has been amended to include any distributions and corporate actions that occurred at any time prior to the next day's open, as described in Investopedia (2016).

U.S Energy Information Administration: We obtained crude oil and conventional gasoline prices from the U.S Energy and Information Administration for the years January 2011 through March 2016. The raw dataset contains the following fields that are of interest to us for the analysis:

- Date - Date for which the gasoline/oil price is provided
- New York Harbor Conventional Gasoline Regular Spot Price FOB (Dollars per Gallon)
- U.S. Gulf Coast Conventional Gasoline Regular Spot Price FOB (Dollars per Gallon)

InsideEVs: We acquired the sales of electric vehicles provided by 'InsideEVs' which tracks all the plug-in sales for the United States by auto maker and brand. The data is provided as the number of units of individual cars sold per month, for the duration of January 2011 to March 2016.

We have the data for the following models of electric and hybrid vehicles, that includes the Tesla Model S, and Tesla Model X whose sales are of particularly important towards the analysis:

- Tesla Model S, Chevrolet Volt, Nissan Leaf, Ford Fusion Energi, Tesla Model X, Ford C-Max Energi, Audi A3 Sprtbk e-tron, Fiat 500 e, BMW x5 xDrive40e, BMW i3, Hyundai Sonata PHV, VW e-Golf, Chevrolet Spark EV, Volvo XC90, Porsche Cayenne S-E,Cadillac ELR, Ford Focus Electric, Kia Soul EV, BMW i8, Smart ED, Mercedes B250, Porsche Panamera S-E, Mercedes S550H PHV, Toyota Prius PHV, Mitsubishi i-MiEV, Other, Mercedes B-Class ED, Porsche 918 Spyder, Honda Accord PHV, Toyota RAV4 EV, Honda Fit EV.

Technical Approach

The Plan

In our project, we plan to analyze Tesla's sales and how they are impacted by external factors namely the fluctuations in oil prices as well as the money spent on other electric cars in general. At first we will analyze and observe our data to see whether it meets the conditions to follow all the assumptions of a linear regression model such as population size, normality and minimized skewness.

After collecting and reorganizing the data we have a final dataset with 45 observations for the monthly sales of Tesla, the monthly oil prices and the substitute for unit prices for the time period from June 2012 to March 2016. In order to remove the impact of the difference in scale we standardize the data and run our model with the standardized dataset.

To analyze how oil prices will affect the sales of the cars, the data collected for oil prices have two different prices for different locations, i.e., New York harbor and US Gulf Coast (dollars/gallon). The average of these prices for both locations is considered. We formulated the

normalization of oil prices as the ratio of mean of oil prices for each month to average of 6 years of oil prices. Mathematically, it can be represented as follows:

Normalization (oil prices) = Mean of all months' oil prices / Average of 6 years' oil prices

Another input in the regression and correlation analysis was the price paid per unit of electric cars. The data can be seen below. The way the data was presented would make it difficult to use the data because the data obtained was secondary data that gave sale by months and the table shown below, is the aggregate of the year this data was. So we normalized to create the input data by months.

The original cost of all cars as depicted below are the outliers such as the Porsche 918 Spyder and others were removed from the calculation as they were outliers or undeterminable.

Car Model	Average	2010	2011	2012	2013	2014	2015	2016
Audi A3 Sprtbk e-tron	$ 37,900	0	0	0	0	0	98	907
BMW i3	$ 43,395	0	0	0	0	6092	11024	762
BMW i8	$ 141,695	0	0	0	0	555	2265	171
BMW x5 xDrive40e	$ 63,095	0	0	0	0	0	892	839
Cadillac ELR	$ 64,995	0	0	0	12	1310	1024	262
Chevrolet Spark EV	$ 25,995	0	0	0	2310	1145	2629	607
Chevrolet Volt	$ 33,995	326	7671	23461	23094	18805	15393	3987
Fiat 500 e	$ 32,780	0	0	0	2310	5132	6194	840
Ford C-Max Energi	$ 32,645	0	0	2374	7154	11550	7591	1450
Ford Focus Electric	$ 29,995	0	0	680	1738	1964	1582	257
Ford Fusion Energi	$ 34,775	0	0	0	6089	11550	9750	2751
Honda Accord PHV	$ 39,780	0	0	0	526	449	64	0
Honda Fit EV	$ 36,625	0	0	93	569	0	0	0
Hyundai Sonata PHV	$ 35,435	0	0	0	0	0	160	650
Kia Soul EV	$ 32,800	0	0	0	0	718	1015	220

Mercedes B250e	$ 42,375	0	0	0	0	0	0	161
Mercedes B-Class ED	$ 41,450	0	0	0	0	774	1906	0
Mercedes S550H PHV	$ 96,575	0	0	0	0	0	118	38
Mitsubishi i-MiEV	$ 23,845	0	80	588	1029	196	115	8
Nissan LEAF	$ 29,860	19	9674	9819	22610	28087	17269	2931
Other	$ -	0	0	0	0	0	34	0
Porsche 918 Spyder	$ 845,000	0	0	0	0	0	203	0
Porsche Cayenne S-E	$ 78,250	0	0	0	0	200	1034	562
Porsche Panamera S-E	$ 94,250	0	0	0	86	879	380	83
Smart ED	$ 25,750	0	0	0	923	2594	1387	172
Tesla Model S	$ 88,700	0	0	2650	17650	16689	25202	6390
Tesla Model X	$ 81,200	0	0	0	0	0	214	2400
Toyota Prius PHV	$ 14,686	0	0	12750	12088	13264	4191	23
Toyota RAV4 EV	$ 49,800	0	0	192	1096	1184	0	0
Volvo XC90	$ 69,095	0	0	0	0	0	86	580
VW e-Golf	$ 29,815	0	0	0	0	714	4232	612

Our plan is to run a regression model using Tesla sales as response variable and oil prices and substitute unit prices as explanatory variables. We first considered using Tesla's stock price as response variable but due to the fact that stock prices are heavily affected by other factors such as people's beliefs about the brand, it was not the best suited for the model.

Test and Evaluation

We test our approach and ensure that it is valid by observing the distribution of the Tesla sales and figure out whether it is normal or nearly normal. Our dataset is the "entire population" since it includes every sale (that we could reasonable account for) since the beginning of Tesla. The dataset we are using counts 45 observations which by the rule of thumb is considered to be a large-sized dataset since n is greater than 30.

Looking at the histogram and the box plot, we see that the sales distribution is right skewed with three outliers. We could have removed the outliers in order to perform the analysis on a dataset

with a better fit to a normal distribution but we chose not to. These 3 outliers actually represent the most recent sales numbers. Despite the fact that they are outliers in this particular dataset, they represent the beginning of an upward trend for Tesla sales. We expect these values to become more mainstream in the upcoming months so we chose to keep them in the model to run the analysis. Given the fact that the size of our dataset is large enough and the distribution shows some skewness but not extensive, we proceed with our analysis by considering our dataset to be nearly normal.

Model Results

The next step is to run a multiple linear regression model using the tool R. The input to the model are (all standardized): the monthly sales of Tesla as the response variable and monthly oil prices along with money spent on substitute electric cars as the explanatory variables. Here is the resulting model from our first iteration:

```
T.Sales = -1.055e-10 - 0.14 x oil price + 0.48 x substitute.unit.price
```

For this first iteration, an evaluation of the model using the F-test gave us:

```
                         Estimate Std. Error t value Pr(>|t|)
(Intercept)          -1.055e-10  1.226e-01   0.000   1.0000
oil.price             -1.383e-01  2.798e-01  -0.494   0.6238
Substitute.unit.price  4.796e-01  2.798e-01   1.714   0.0939 .
---
Residual standard error: 0.8227 on 42 degrees of freedom
Multiple R-squared:  0.3683,    Adjusted R-squared:  0.3382
F-statistic: 12.24 on 2 and 42 DF,  p-value: 6.474e-05
```

So even if the model as a whole is significant (p-value close to 0), the oil price variable is not significant to the model so we re-run it without the oil price and following are the results:

```
T.Sales = -9.812e-11 + 0.6 x substitute.unit.price
```

This second iteration is significant as a whole and has the substitute unit price significant as well – with a much lower p-value:

```
                          Estimate Std. Error t value Pr(>|t|)
(Intercept)           -9.812e-11  1.216e-01   0.000        1
Substitute.unit.price  6.038e-01  1.216e-01   4.967 1.13e-05 ***
---
Residual standard error: 0.8154 on 43 degrees of freedom
Multiple R-squared:  0.3646,    Adjusted R-squared:  0.3498
F-statistic: 24.67 on 1 and 43 DF,  p-value: 1.127e-05
```

We notice a slight increase in the Adjusted R-squared from 34% to 35%. From this analysis we can say that given our dataset, each unit increase in the standardized substitute prices give us an increase of 0.6 units in the standardized Tesla monthly sales on average. The intercept being extremely minimal, this means when the substitute sales are zero, according to this model, the Tesla sales are zero as well. The point worth noting is that the intercept is not significant (p-value is 1) but this is often the case in regression analysis.

The value of Adjusted R-squared being 35% indicates that 35% of the variability in the Tesla monthly sales is explained by the model. Therefore, it is safe to assume that there are still several other factors, outside of this analysis, responsible for the movements in the Tesla monthly sales. Given the fact that our value of Adjusted R-squared is quite low, we cannot attribute all the remaining factors to random events.

Hypothesis and its Testing

After building the model that shows us the relationship between Tesla's sales and substitute unit prices, we can now check whether this relationship is significant. We claim as hypothesis that there is a significant positive relationship between Tesla sales and the unit prices of substitute cars. The F-test results confirm that the relationship is significant (p-value is minimal).

We compute a 95% confidence interval for the coefficient of the substitute unit price. The result is [0.35: 0.85]. Hence, we are 95% confident that one-unit increase in the standardized substitute unit price leads to an increase ranging from 0.35 to 0.85 units in standardized Tesla sales on average. Since the 95% confidence interval does not include zero, it is safe to say that there is a positive relationship between Tesla sales and substitute unit prices. These results justify our logic that an increase in the price of a substitute product would most likely lead to an increase in sales for that product.

Conclusion

To conclude our analysis, we can say that Tesla sales are nearly normal with a very recent upward trend. The analysis supports our hypothesis as it shows significant positive relationship between substitute unit price and Tesla sales. This analysis seems to be a good start but the low R-squared suggests that it is not complete for lack of other variables that could improve the model.

Future Work

Our model was sound in itself but the adjusted R-squared obtained tells us that there is more to the story. So any potential future work would look into which variables would add more value to the model that can better describe the sales performance of Tesla. One possible example might be the sales of cars that Tesla considers to be its competitors. Indeed, while our analysis was conducted with the assumption of Tesla cars to be a part of the greater group of electric cars, the company associates itself more with luxury than with electric/hybrid vehicle manufacturers such

as the Audi 7 and 8 as discussed in the company's update letter by Musk, E. and Wheeler J. (2015). Therefore, any analysis that would include sales information on such competitors could bring more value to the model.

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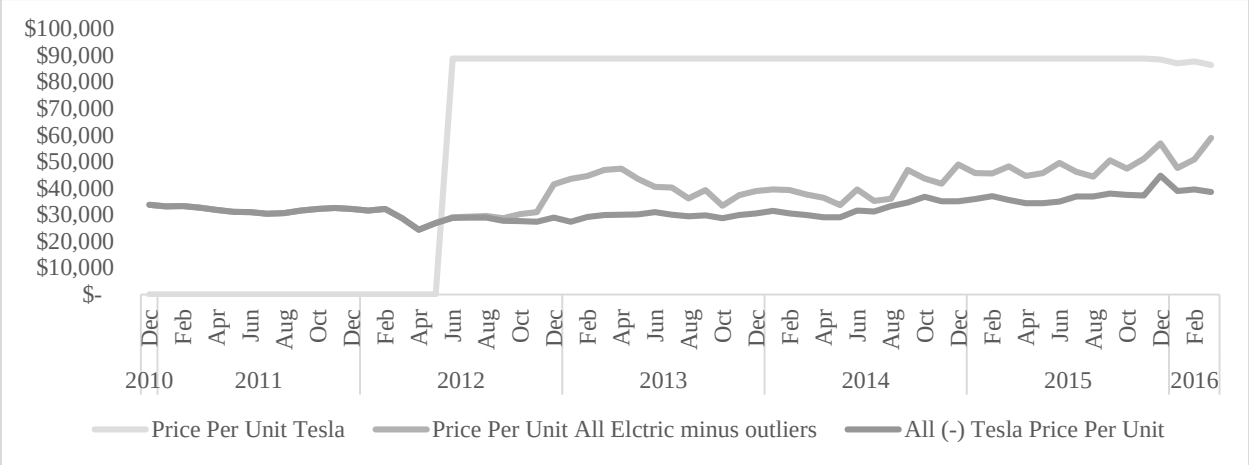
Appendix

Average Price Paid of the Electric Cars



As we can see in the chart, the Average Price Paid of the Electric Cars increases around December 2012, 6 months after Tesla has entered the market even though the average cost paid per tesla remains the same. The figure also shows that there is an upward trend in the Price Paid per Electric Vehicles that may be attributed to the number of new models being added.

Other than the outliers, the early data for 2010 is also not included as there were no breakdowns available and the early industry trends would distort the data due to the novelty sales to early adopters.

Raw Data for Monthly Unit Sales

2010 - 2011	Chevrolet Volt	Nissan LEAF	Mitsubishi i-MiEV	Monthly Total
DEC 2010	326	19	0	345
JAN	321	87	0	408
FEB	281	67	0	348
MAR	608	298	0	906
APR	493	573	0	1,066
MAY	481	1,142	0	1,623
JUN	561	1,708	0	2,269
JUL	125	931	0	1,056
AUG	302	1,362	0	1,664
SEP	723	1,031	0	1,754
OCT	1,108	849	0	1,957
NOV	1,139	672	0	1,811
DEC	1,529	954	80	2,563
TOTAL	7,671	9,674	80	17,425

"Other" This Generation Plug-In Vehicles:

(since 2008, that were publically available, sold in the US, and that are not part of the monthly chart totals - minumum 100 units) *excludes NEVS

Tesla Roadster	1,900 (e)
Fisker Karma	1,700 (e)
Ford Transit Connect	550 (e)
McLaren P1	124
CODA	117

2012	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Chevrolet Volt	603	1,023	2,289	1,462	1,680	1,760	1,849	2,831	2,851	2,961	1,519	2,633	23,461
Toyota Prius PHV	0	21	891	1,654	1,086	695	688	1,047	1,652	1,889	1,766	1,361	12,750
Nissan LEAF	676	478	579	370	510	535	395	685	984	1,579	1,539	1,489	9,819
Tesla Model S*	0	0	0	0	0	12	19	43	86	300	400	1,790	2,650*
Ford C-Max Energi	0	0	0	0	0	0	0	0	0	144	1,259	971	2,374
Ford Focus Electric	2	0	0	0	6	89	38	34	59	118	172	162	680
Mitsibishi i-MiEV	36	44	56	79	85	33	33	37	36	30	42	77	588
Toyota RAV4 EV	0	0	0	0	0	0	0	0	61	47	32	52	192
Honda Fit EV	0	0	0	0	0	0	7	9	16	16	26	19	93
InsideEVs	1,317	1,566	3,815	3,565	3,367	3,124	3,029	4,686	5,745	7,084	6,755	8,554	52,607

2013	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Chevrolet Volt	1,140	1,626	1,478	1,306	1,607	2,698	1,788	3,351	1,766	2,022	1,920	2,392	23,094
Nissan LEAF	650	653	2,236	1,937	2,138	2,225	1,864	2,420	1,953	2,002	2,003	2,529	22,610
Tesla Model S	1,200	1,400	2,300	2,100	1,700	1,350	1,300	1,300	1,500	800	1,200	1,500	17,650
Toyota Prius PHV	874	693	786	599	678	584	817	1,791	1,152	2,095	1,100	919	12,088
Ford C-Max Energi	338	334	494	411	450	455	433	621	758	1,092	941	827	7,154
Ford Fusion Energi	0	119	295	364	416	390	407	600	750	1,087	870	791	6,089
Fiat 500e*	0	0	0	0	0	0	200	360	450	400	430	470	2,310
Ford Focus Electric	81	158	180	147	157	177	150	175	110	115	130	158	1,738
Toyota RAV4 EV	25	52	133	70	84	44	109	231	167	91	62	28	1,096
Mitsubishi i-MiEV	257	337	31	127	91	39	46	30	20	28	12	11	1,029
smart ED	2*	0	0	0	60	53	58	182	137	111	153	167	923
Honda Fit EV	8	15	23	22	15	208	63	66	35	40	23	51	569
Chevrolet Spark EV	0	0	0	0	0	27	103	102	78	66	87	76	539
Honda Accord PHV	2	17	26	55	58	42	54	44	51	71	68	38	526
Porsche Panamera S-E	0	0	0	0	0	0	0	0	0	35	4	47	86
Cadillac ELR	0	0	0	0	0	0	0	0	0	0	0	6	6
InsideEVs	4,577	5,404	7,982	7,138	7,454	8,292	7,392	11,273	8,927	10,055	9,003	10,010	97,507

2014-US	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Nissan LEAF	1,252	1,425	2,507	2,088	3,117	2,347	3,019	3,186	2,881	2,589	2,687	3,102	30,200
Chevrolet Volt	918	1,210	1,478	1,548	1,684	1,777	2,020	2,511	1,394	1,439	1,336	1,490	18,805
Tesla Model S*	800	1,089	1,300	1,100	1,000	1,500	800	600	2,500	1,300	1,200	3,500	16,689
Toyota Prius PHV	803	1,041	1,452	1,741	2,692	1,571	1,371	818	353	479	451	492	13,264
Ford Fusion Energi	533	779	899	743	1,342	1,939	1,226	1,222	640	686	752	789	11,550
Ford C-Max Energi	471	552	610	525	782	988	831	1,050	677	644	644	659	8,433
BMW i3	0	0	0	0	336	358	363	1,025	1,022	1,159	816	1,013	6,092
Fiat 500e**	310	336	644	442	476	636	528	535	518	217	211	279	5,132**
smart ED	97	122	186	203	206	278	298	208	182	150	313	351	2,594
Ford Focus Electric	100	129	177	116	177	197	198	264	176	186	191	53	1,964
Cadillac ELR	41	58	81	61	52	97	188	196	111	152	155	118	1,310
Toyota RAV4 EV	63	101	73	69	149	91	68	228	125	97	83	37	1,184
Chevrolet Spark EV	93	71	108	97	182	85	128	80	51	58	61	131	1,145
Porsche Panamera S-E	141	57	56	63	53	111	63	68	82	97	57	31	879
Mercedes B-Class ED	0	0	0	0	0	0	41	51	65	98	193	326	774
BMW i8	0	0	0	0	0	0	0	9	58	204	126	158	555
Honda Accord PHV	27	24	18	37	46	28	41	46	42	34	43	63	449
Honda Fit EV	30	33	37	50	33	38	42	55	29	23	5	32	407
Kia Soul EV	0	0	0	0	0	0	0	0	0	109	140	110	359
VW e-Golf	0	0	0	0	0	0	0	0	0	1	119	237	357
Mitsubishi i-MiEV	1	3	24	12	35	22	17	20	15	17	18	12	196
Porsche Cayenne S-E	0	0	0	0	0	0	0	0	0	0	45	55	100
InsideEVs	5,680	7,030	9,650	8,895	12,362	12,063	11,242	12,172	10,921	9,739	9,646	13,038	122,438

Worldwide*	14,512	18,528	24,267	23,153	25,016	31,162	27,304	29,804	33,611	29,020	26,825	37,511	320,713

2015-US	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Tesla Model S*	1,100	1,150	2,450	1,700	2,400	2,800	1,600	1,300	2,500	1,900	2,702	3,600	25,202
Nissan LEAF	1,070	1,198	1,817	1,553	2,104	2,074	1,174	1,393	1,247	1,238	1,054	1,347	17,269
Chevrolet Volt	542	693	639	905	1,618	1,225	1,313	1,380	949	2,035	1,980	2,114	15,393
BMW i3	670	1,089	922	406	818	551	935	792	1,710	986	723	1,422	11,024
Ford Fusion Energi	426	603	837	711	986	727	852	949	808	849	944	1,058	9,750
Ford C-Max Energi	395	498	715	553	715	667	693	723	719	695	639	579	7,591
Fiat 500e**	259	315	1,310	717	420	363	485	610	635	425	390	265	6,194
VW e-Golf	181	130	195	309	410	293	313	381	343	596	472	609	4,232
Toyota Prius PHV	401	397	473	428	727	464	584	344	216	91	44	22	4,191
Chevrolet Spark EV	86	119	151	920	283	226	57	135	157	177	166	152	2,629
BMW i8	85	113	143	138	117	137	217	210	182	149	118	656	2,265
Mercedes B-Class ED	240	109	145	158	278	242	196	172	147	81	41	97	1,906
Ford Focus Electric	85	145	140	124	165	152	135	176	145	126	93	96	1,582
smart ED	147	76	103	124	102	94	109	106	94	75	178	179	1,387
Porsche Cayenne S-E	66	71	72	88	105	88	77	83	70	125	121	137	1,103
Cadillac ELR	92	127	92	104	116	62	66	45	36	82	67	135	1,024
Kia Soul EV	69	48	63	73	108	109	59	93	105	109	83	96	1,015
BMW X5 xDrive40e										118	167	607	892
Porsche Panamera S-E	61	40	44	30	21	34	23	36	41	28	33	16	407
Tesla Model X*									6	4	5	199	214
Porsche 918 Spyder	34	14	10	28	20	29	40	22	4	0	2	0	203
Hyundai Sonata PHV**											15	145	160
Mercedes S550 PHV							10	10	17	25	21	35	118
Mitsubishi I-MiEV	3	2	10	16	18	23	12	6	3	9	4	9	115
Volvo XC90								4	0	1	7	74	86
Honda Accord PHV	28	12	5	5	5	4	1	2	0	0	1	1	64
Audi A3 Sprtbk e-tron												49	49
Other *	17	2	5	4	4	0	0	0	0	2	0	0	34
InsideEVs	6,057	6,951	10,341	9,094	11,540	10,364	8,951	8,972	10,134	9,926	10,070	13,699	116,099
2014 Results	5,680	7,030	9,650	8,895	12,362	12,063	11,242	12,172	10,921	9,739	9,646	13,038	122,438
Worldwide*	24,455	25,830	42,422	36,094	38,787	43,762	40,020	41,750	50,033	55,205	63,765	88,174	550,297

2016-US	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Tesla Model S*	850	1,550	3,990										6,390
Chevrolet Volt	996	1,126	1,865										3,987
Nissan LEAF	755	930	1,246										2,931
Ford Fusion Energi	581	932	1,238										2,751
Tesla Model X*	270	270	1,860										2,400
Ford C-Max Energi	350	490	610										1,450
Audi A3 Sprtbk e-tron	327	248	332										907
Fiat 500e**	275	210	355										840
BMW X5 xDrive40e	181	345	313										839
BMW i3	182	248	332										762
Hyundai Sonata PHV	175	200	275										650
VW e-Golf	328	198	86										612
Chevrolet Spark EV	139	216	252										607
Volvo XC90	226	176	178										580
Porsche Cayenne S-E	146	172	244										562
Cadillac ELR	67	91	104										262
Ford Focus Electric	66	81	110										257
Kia Soul EV	81	60	79										220
BMW i8	32	54	89										175
smart ED	48	54	70										172
Mercedes B250e	58	37	66										161
Porsche Panamera S-E	27	33	23										83
Mercedes S550H PHV	19	19	0										38
Toyota Prius PHV	10	6	7										23
Mitsubishi i-MiEV	2	5	1										8
Other *	0	0	0										0
InsideEVs	6,191	7,751	13,725	0	0	0	0	0	0	0	0	0	27,667
2015 Results	6,057	6,951	10,341	9,094	11,540	10,364	8,951	8,972	10,134	9,926	10,070	13,699	116,099

Worldwide*	36,702	37,019											73,721

	2010											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price Per Unit Tesla												$ -
Price Per Unit All Electric minus outliers												$ 33,767
All (-) Tesla Price Per Unit												$ 33,767

	2011											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price Per Unit Tesla	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Price Per Unit All Electric minus outliers	$ 33,113	$ 33,199	$ 32,635	$ 31,772	$ 31,085	$ 30,882	$ 30,349	$ 30,610	$ 31,564	$ 32,201	$ 32,461	$ 32,139
All (-) Tesla Price Per Unit	$ 33,113	$ 33,199	$ 32,635	$ 31,772	$ 31,085	$ 30,882	$ 30,349	$ 30,610	$ 31,564	$ 32,201	$ 32,461	$ 32,139

	2012											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price Per Unit Tesla	$-	$-	$-	$-	$-	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700
Price Per Unit All Electric minus outliers	$31,589	$32,189	$28,709	$24,382	$26,877	$28,980	$29,258	$29,474	$28,624	$30,215	$30,913	$41,432
All (-) Tesla Price Per Unit	$31,589	$32,189	$28,709	$24,382	$26,877	$28,750	$28,883	$28,926	$27,711	$27,629	$27,275	$28,923

	2013											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price Per Unit Tesla	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700

Price Per Unit All Electric minus outliers	$43,413	$44,553	$46,804	$47,254	$43,445	$40,409	$40,161	$36,112	$39,201	$33,333	$37,366	$38,870
All (-) Tesla Price Per Unit	$27,320	$29,117	$29,845	$29,977	$30,074	$30,981	$29,966	$29,430	$29,680	$28,714	$29,810	$30,475

	2014											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price Per Unit Tesla	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700
Price Per Unit All Electric minus outliers	$39,486	$39,197	$37,551	$36,303	$33,596	$39,477	$35,174	$35,942	$46,861	$43,551	$41,603	$48,905
All (-) Tesla Price Per Unit	$31,471	$30,409	$29,821	$29,065	$28,961	$31,592	$31,208	$33,233	$34,505	$36,767	$35,067	$35,045

	2015											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price Per Unit Tesla	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,700	$88,682	$88,684	$88,686	$88,307
Price Per Unit All Electric minus outliers	$45,637	$45,488	$48,108	$44,549	$45,627	$49,448	$46,141	$44,350	$50,473	$47,288	$51,003	$56,782
All (-) Tesla Price Per Unit	$35,928	$36,898	$35,482	$34,354	$34,287	$34,863	$36,827	$36,813	$37,914	$37,461	$37,184	$44,635

	2016											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price Per Unit Tesla	$86,892	$87,587	$86,315									
Price Per Unit All Electric minus outliers	$47,570	$50,770	$58,905									
All (-) Tesla Price Per Unit	$38,885	$39,484	$38,517									

	Boxplot of Tesla Standardized Sales