Tesla car crash analysis

Shreeya Jain

Tesla

Tesla deaths: an in-depth investigation of driver, occupant and pedestrian death

The goal of this project is to determine the positive and negative effects of Tesla's Autopilot on the company's development.

Autopilot helps Tesla's development, positioning it as a leader in both ADAS and the driverless car sector. Autopilot is regarded as a successful Tesla innovation and a major factor contributing to Tesla's future success.
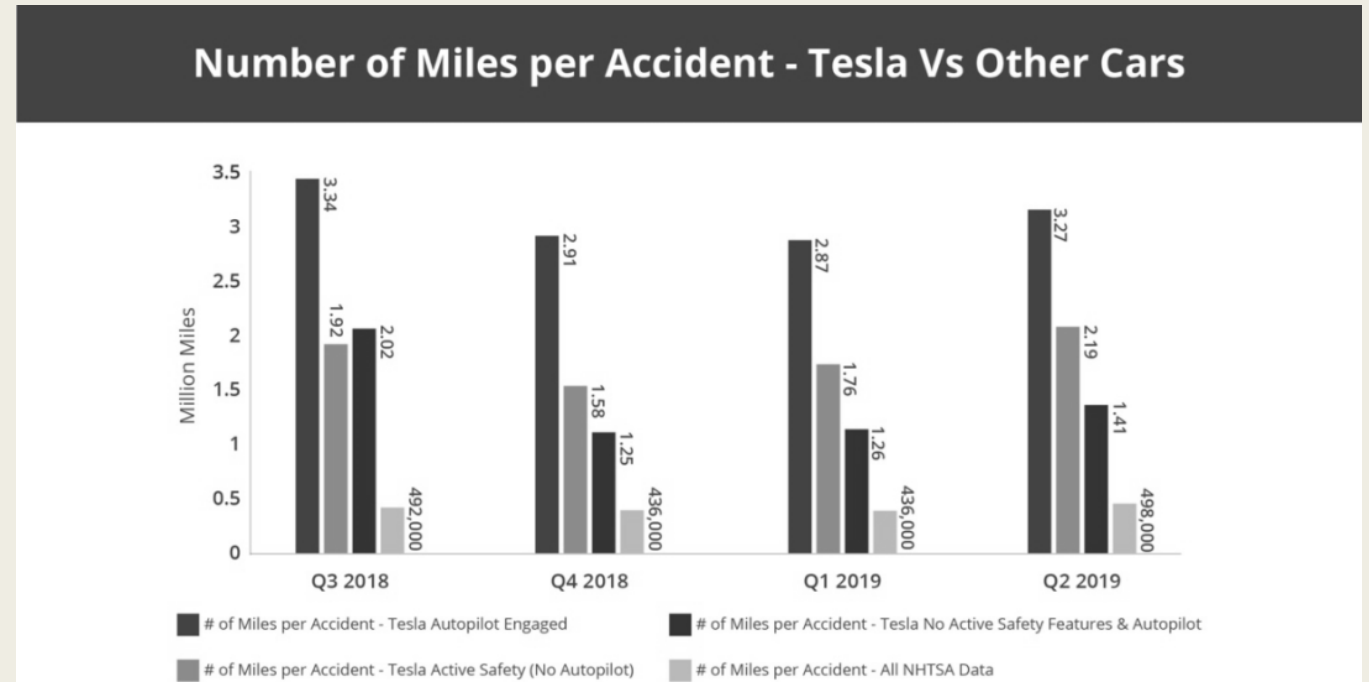
Pros:

- Replaces conventional LiDAR with a combination of eight cameras around the car.

- Utilizes the high-efficiency system "HydraNet" to avoid repeated computations between different tasks.

Cons:

- Increasing number of accidents employing Autopilot signal that it is technologically immature.
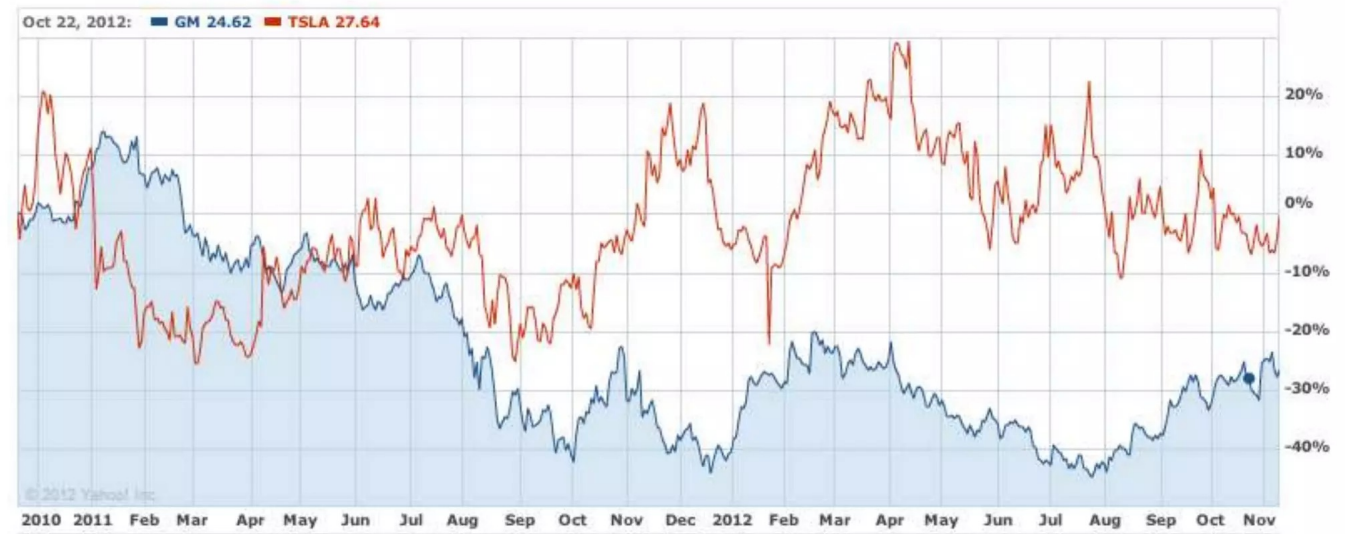
PERSONA

1. Tesla cars are 6.6 times less likely to crash than traditional cars, according to my analysis.

2. The most recent Model 3 has a vehicle safety rating of 0.38, the highest of any vehicle rated by the NHTSA.

Number of Miles per Accident - Tesla Vs Other Cars

(Chart: Million Miles by quarter)

Q3 2018: 3.34, 1.92, 2.02, 492,000
Q4 2018: 2.91, 1.58, 1.25, 436,000
Q1 2019: 2.87, 1.76, 1.26, 436,000
Q2 2019: 3.27, 2.19, 1.41, 498,000

Legend:
- # of Miles per Accident - Tesla Autopilot Engaged
- # of Miles per Accident - Tesla No Active Safety Features & Autopilot
- # of Miles per Accident - Tesla Active Safety (No Autopilot)
- # of Miles per Accident - All NHTSA Data

Problems faced

- Limited data availability
- Sample Bias
- Confounding variables
- Lack of a control group
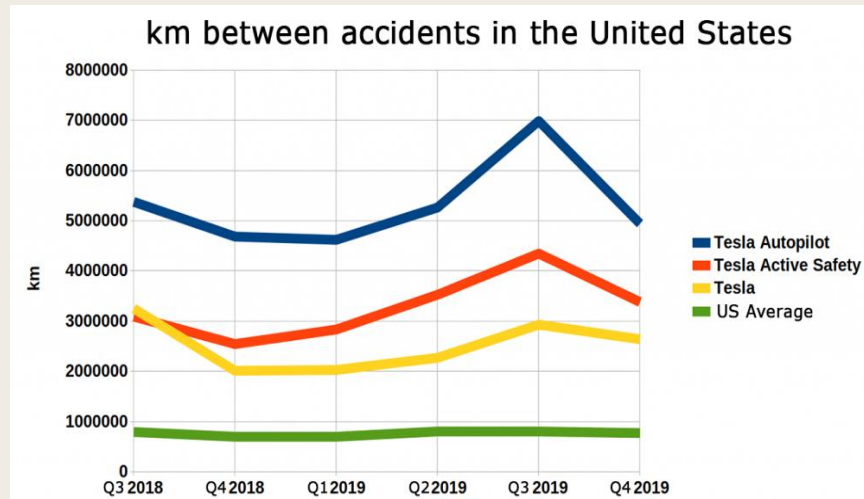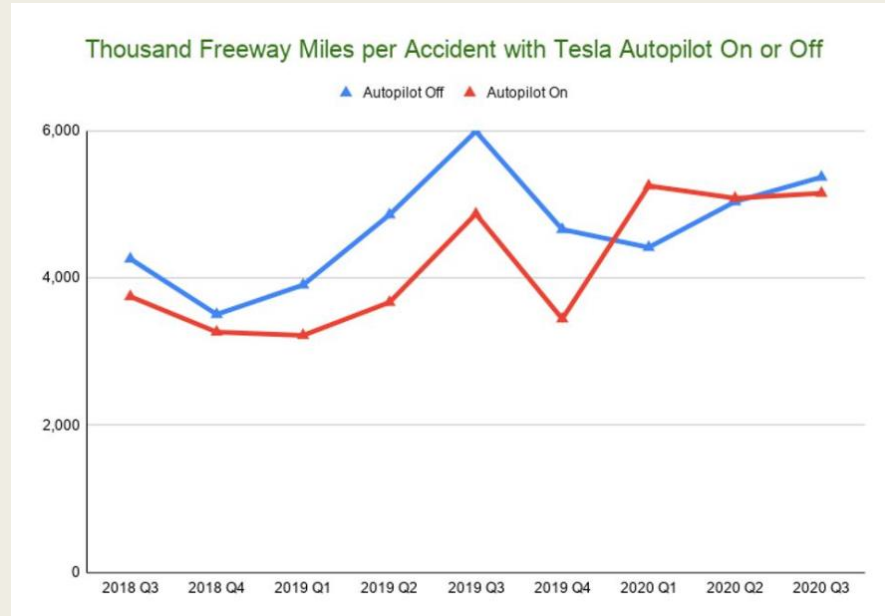- Ethical Considerations
- Interpretation of results

Historical Information

Oct 22, 2012: ■ GM 24.62 ■ TSLA 27.64

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2010 2011 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2012 Feb Mar Apr May Jun Jul Aug Sep Oct Nov

Statistical Analysis

Analysis 1

Analysis 3

Analysis 2

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RESULTS

The safety deficits of cars observed in accident statistics can be alleviated if the structures of these cars are designed and optimized for the situation, they will most likely encounter in a real-world situation.

Tesla's Autopilot technology has both potential benefits and drawbacks. It has enabled Tesla to lead in the ADAS and driverless car sector, while also contributing to a growing number of accidents that have harmed Tesla's reputation. Tesla can continue to develop Autopilot to position itself as a leader in the autonomous vehicle market, but safety concerns must be addressed to achieve this goal.

Conclusion

Tesla should prioritize safety and implement measures to reduce the risk of accidents.

Autopilot's accident rate statistics should be considered in the context of limited access highways.

Thorough testing and evaluation of the safety of Full Self-Driving (FSD) is necessary before making it available to the wider public.

Tesla should provide additional information on how their safety ratings compare to other similar vehicles.

The decreasing trend in Tesla accidents with Autopilot every 7.5 million kilometers since October 2018 indicates improvements in safety measures.

THANK YOU