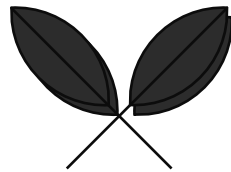


ANALYZING THE IMPACT OF CAR FEATURES



SUJAL VERMA

PROJECT DESCRIPTION

- The automotive industry has been rapidly evolving over the past few decades with a growing focus on fuel efficiency, environmental sustainability, and technology innovation. With increasing competition in the market, manufacturers want to change the consumer landscape.
- This project objective is to analyze the car features that affect the manufacturers' car prices. As a Data Analyst, the client has asked how can a car manufacturer optimize pricing and product development decisions to maximize profitability while meeting consumer demand.
- Dataset contains information on various car models and their applications. The dataset is available on Kaggle by Cooper College, New York City.
- Total number of observations:- 11,813
- File type:- CSV

Tech Stack Used:- MS-Excel

APPROACH



For analysis I used descriptive statistics, regression analysis, and visualization to visualize the charts and graphs.



The reason behind using descriptive analysis was to find out the mean of the car's features variable and then visualize them in the form of charts and graphs.

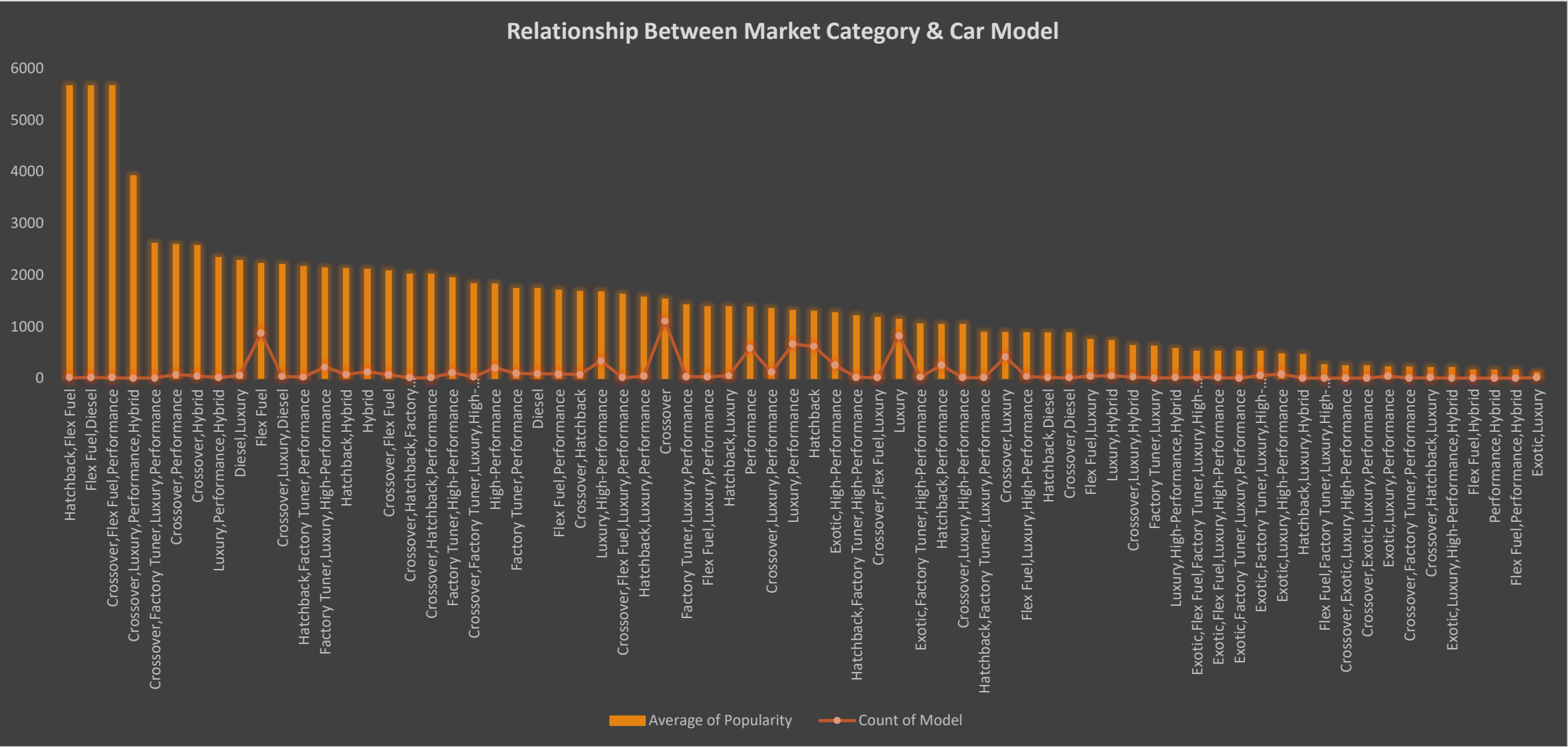


Regression Analysis told the dependency of independent variables to dependent variables i.e., the specific features of the car impact the car's price.



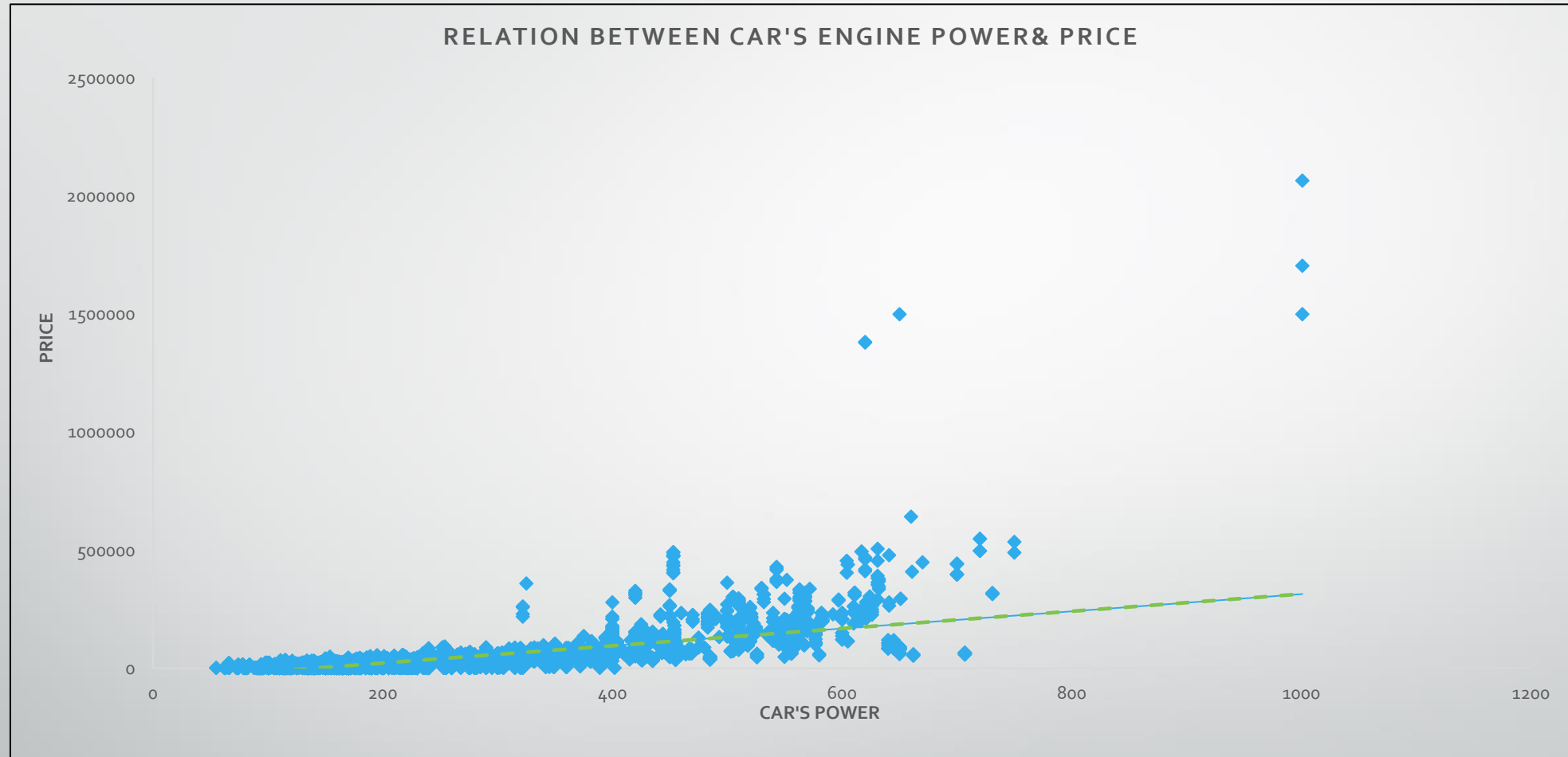
While creating the charts it was difficult to summarize the values of variables in sum or average.

Insight Required: How does the popularity of a car model vary across different market categories?



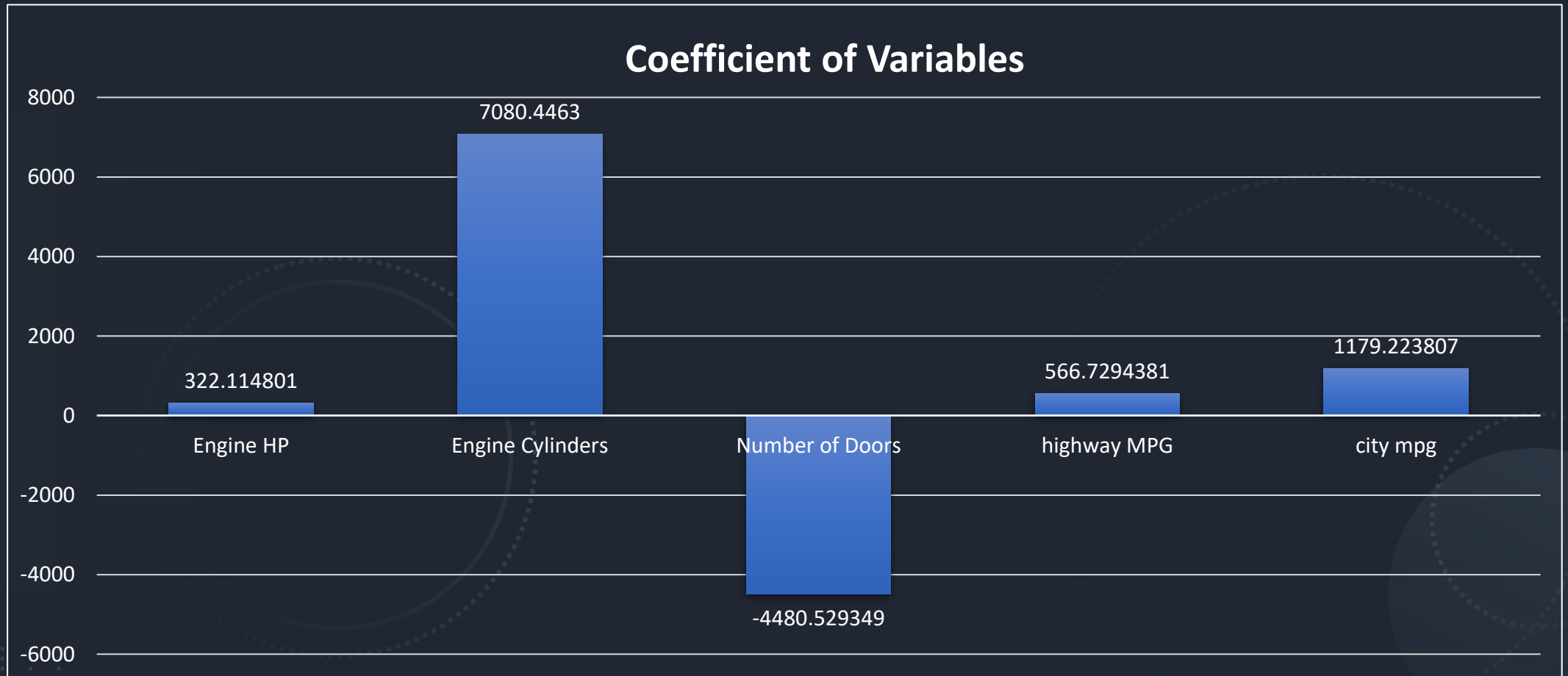
From the above line chart, we can see that Hatchback & Flex Fuel are the highest populated and have the highest number of cars.

Insight Required: What is the relationship between a car's engine power and its price?



From the above scatter plot, we can observe that cars that have high engine power have higher prices. Thus, the car's power increases as the car's price will also increase.

Insight Required: Which car features are most important in determining a car's price?



From the above bar chart, we can see that Engine Cylinders have the strongest relationship with MSRP.

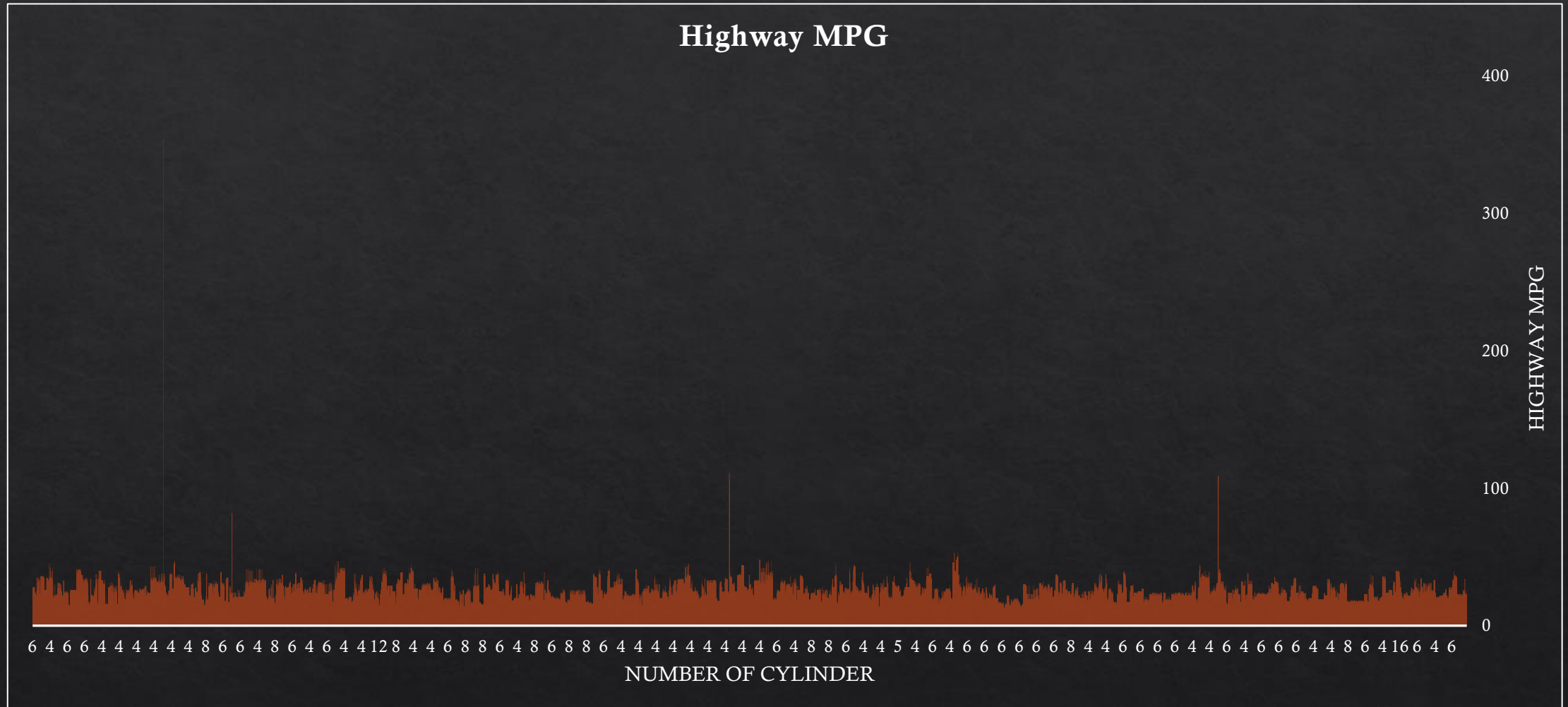
Insight Required: How does the average price of a car vary across different manufacturers?

Avg. Price of car across different manufacturers



From the above bar chart, we can say that Bugatti has the highest average price.

Insight Required: What is the relationship between fuel efficiency and the number of cylinders in a car's engine?

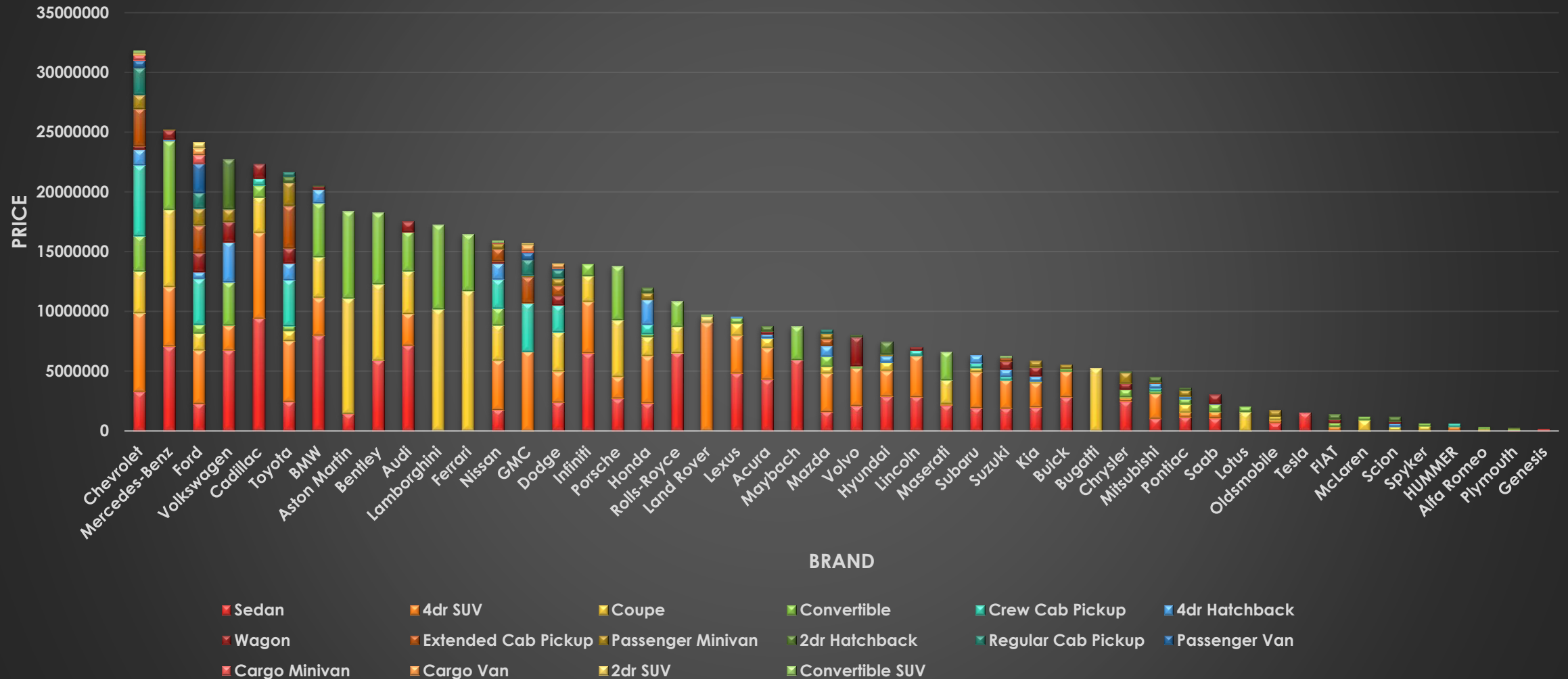


From the above chart, we can see that cylinders having 4 is giving maximum fuel efficiency.
And Fuel efficiency is inversely proportional to the no. of cylinders.

Building the Dashboard

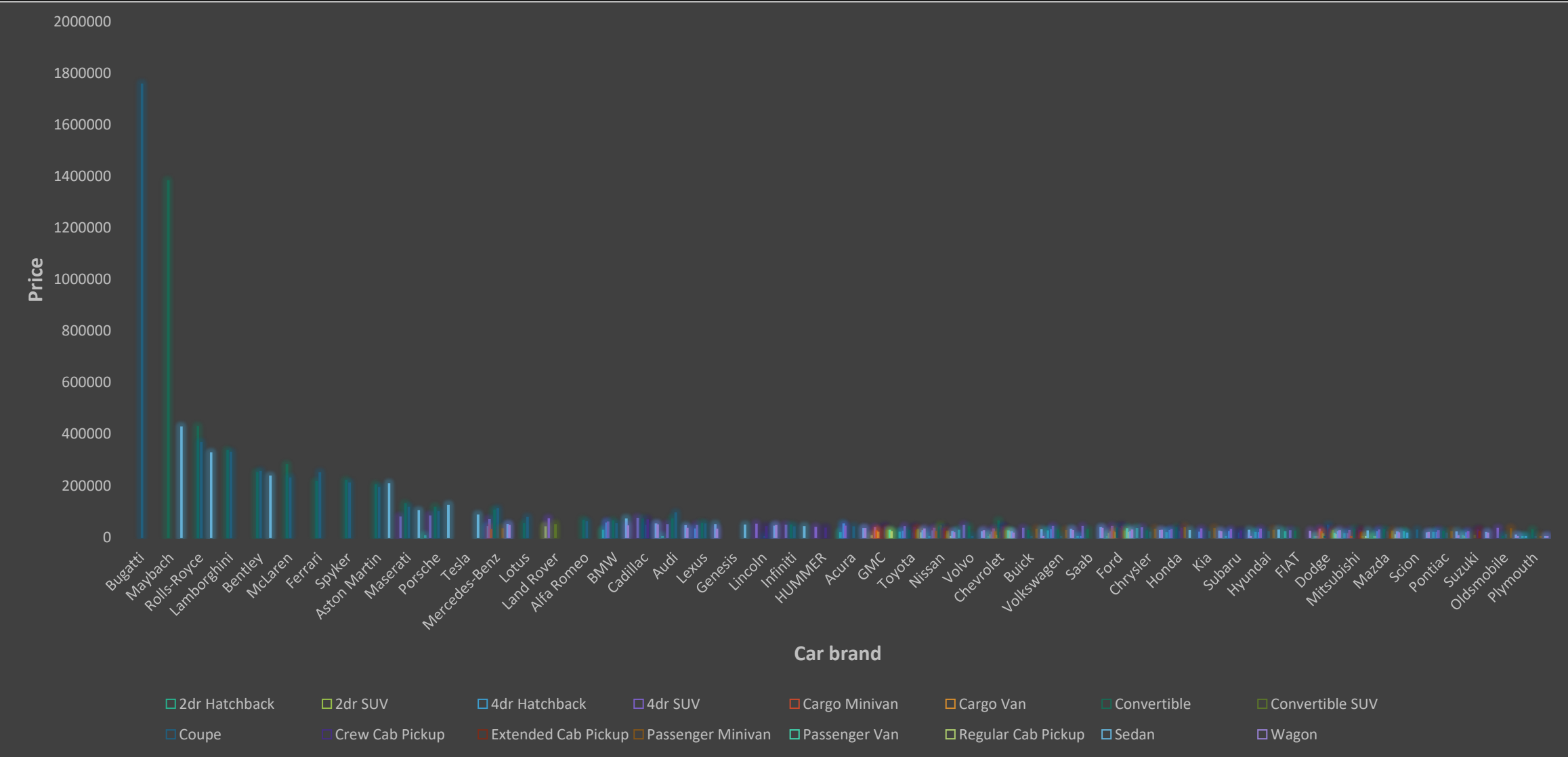
Task 1: How does the distribution of car prices vary by brand and body style?

Brand vs Price



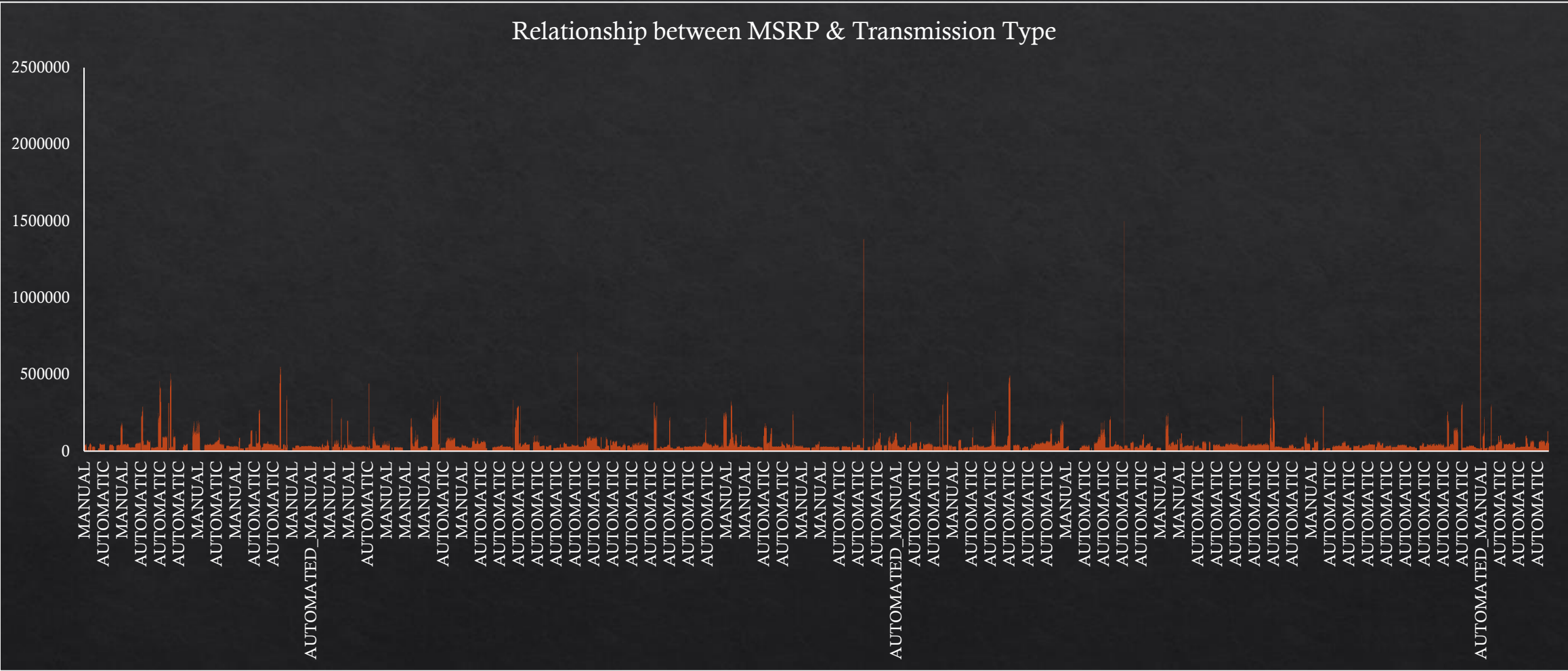
From the above-stacked column, Chevrolet and Mercedes-Benz have the highest contribution to the car's price.

Task 2: Which car brands have the highest and lowest average MSRPs, and how does this vary by body style?



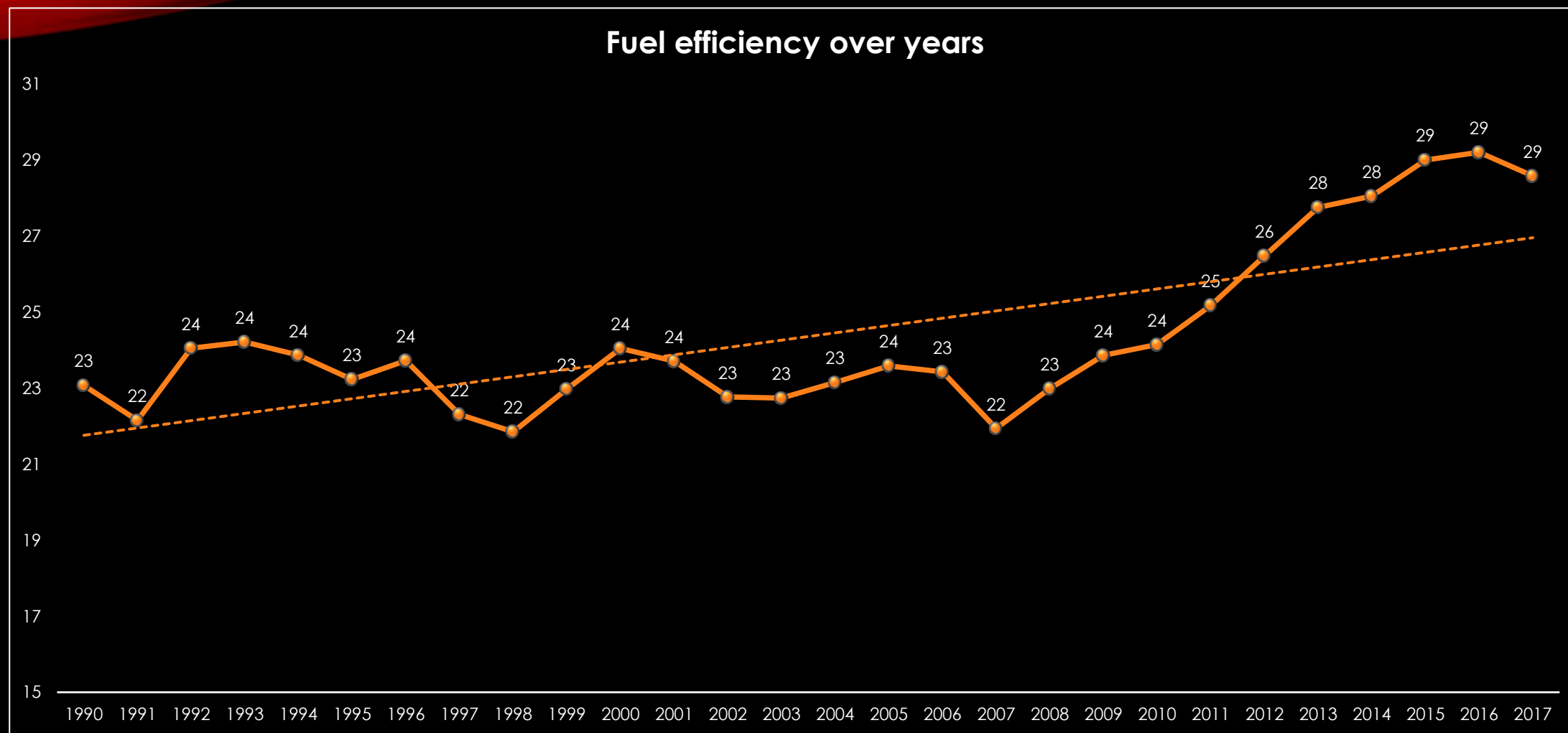
From the above-clustered chart, we can see that the couple style Bugatti and the Convertible style of Myabach have the highest average car prices.

Task 3: How do the different features such as transmission type affect the MSRP, and how does this vary by body style?



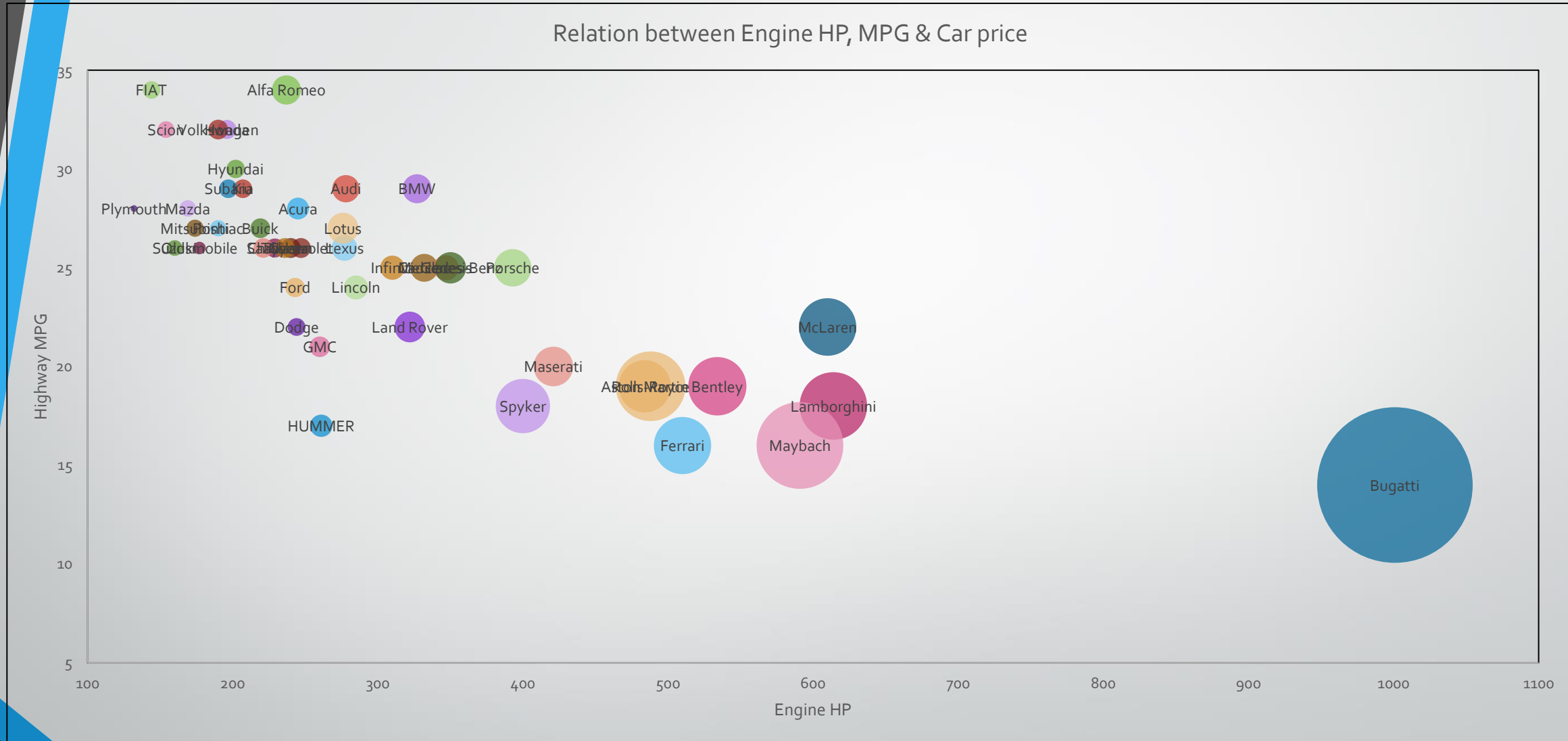
From the above chart, we can see that the automated convertible and automated_manual couple are highly contributing in MSRP.

Task 4: How does the fuel efficiency of cars vary across different body styles and model years?



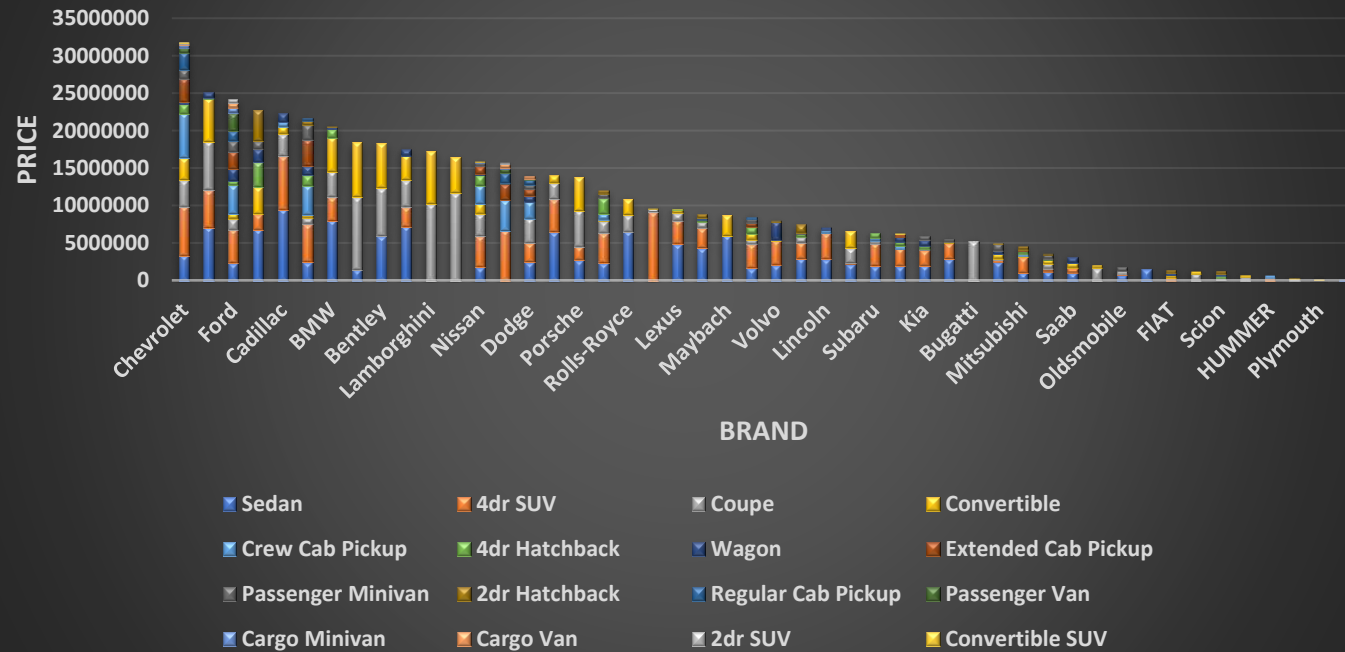
From the above line chart, we can see that as time increases fuel efficiency (Highway MPG) also increased or improved.

Task 5: How does the car's horsepower, MPG, and price vary across different Brands?

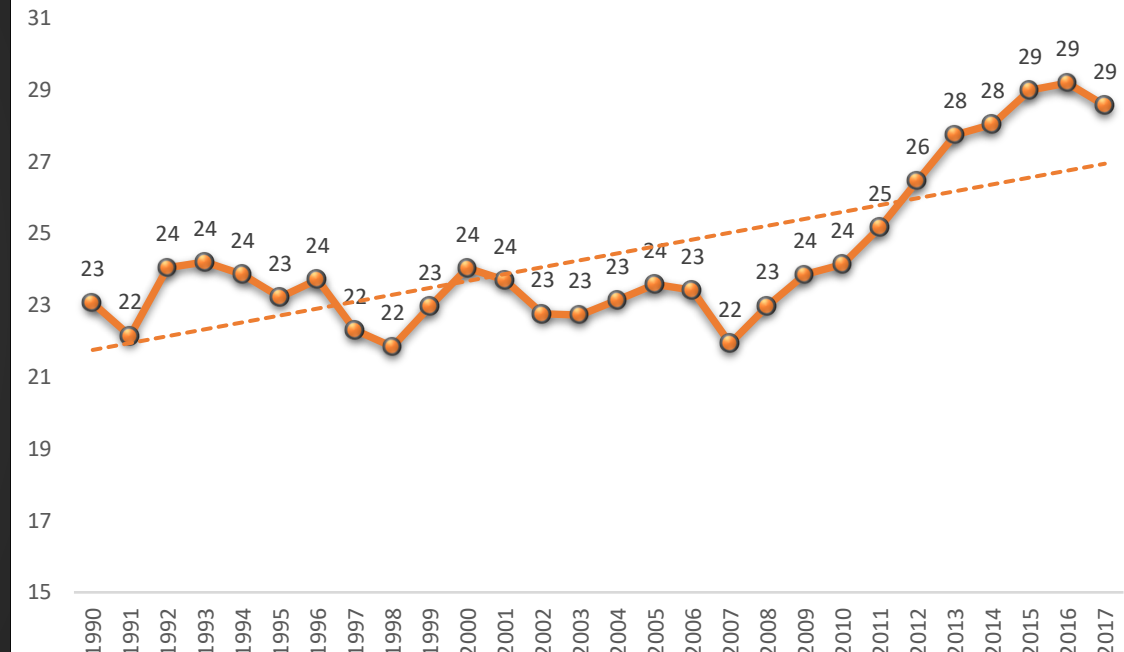


From the above Bubble chart, we can see that if engine hp increase, highway mpg will decrease and the price will also increase.

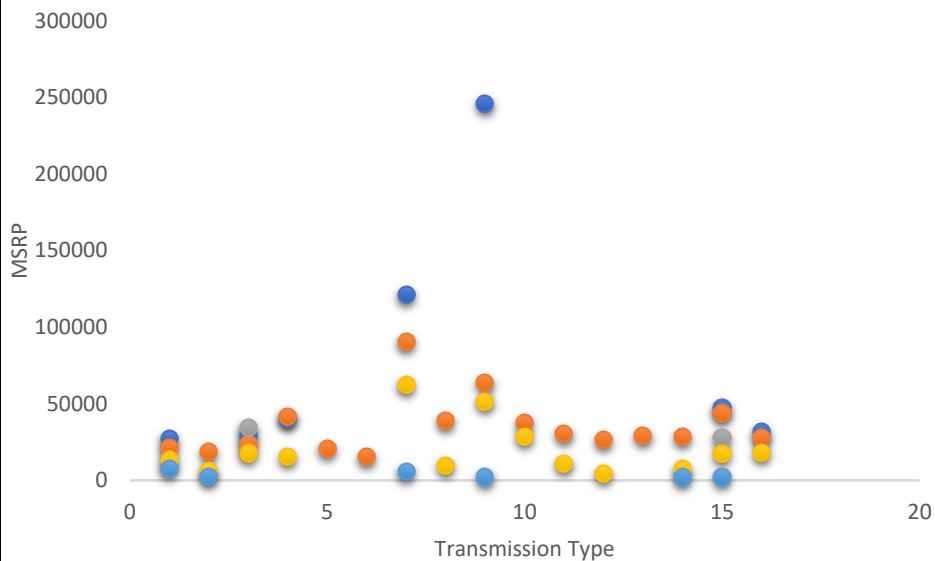
Brand vs Price



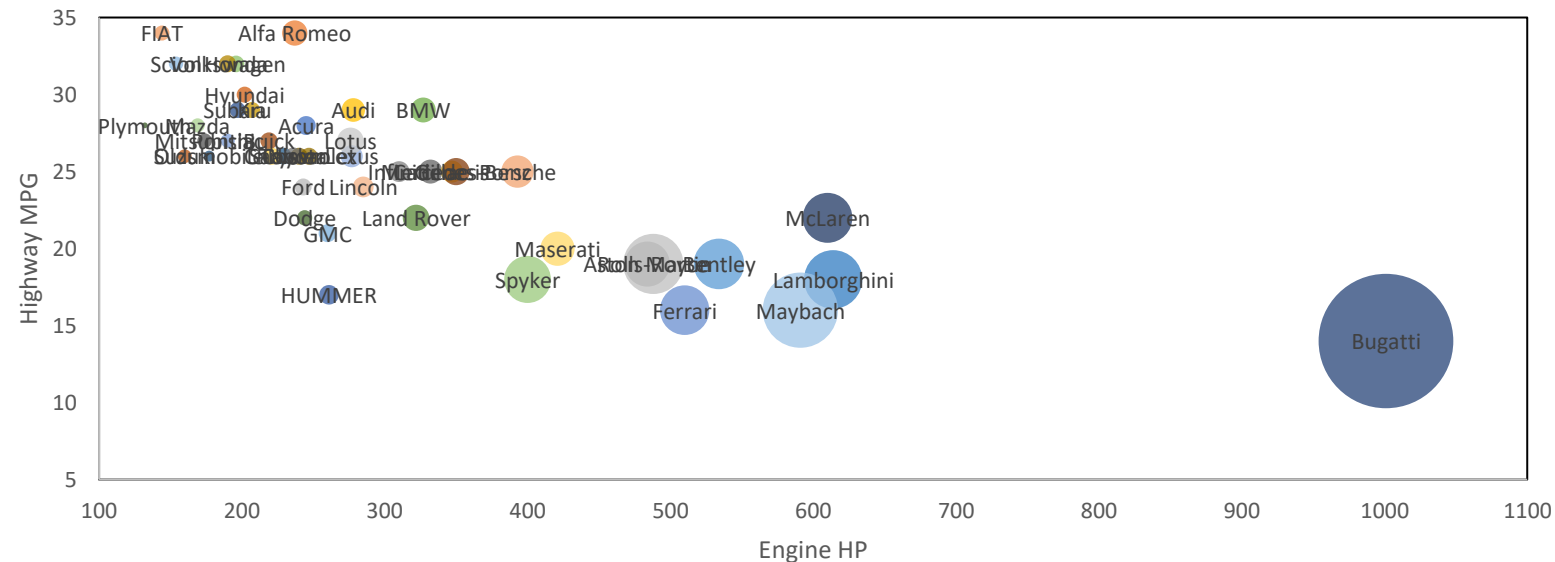
Fuel efficiency over years



Relationship between MSRP and Transmission Type



Relation between Engine HP, MPG & Car price



Result

- Coupe body style contributing maximum to the car's MSRP.
- In transmission type automated_manual creates high impact because in a single car having both automated and manual gear systems will be more beneficial rather than a single gear system.
- Overall, fuel efficiency and Coupe body style features highly impact the car's price and profitability.
- Companies need to produce high or at least good fuel efficiency of cars by which the majority of the class can afford a car.
- File link:-[Click To See](#)
- Dashboard sheet - [Link To Dashboard](#)

THANK YOU

