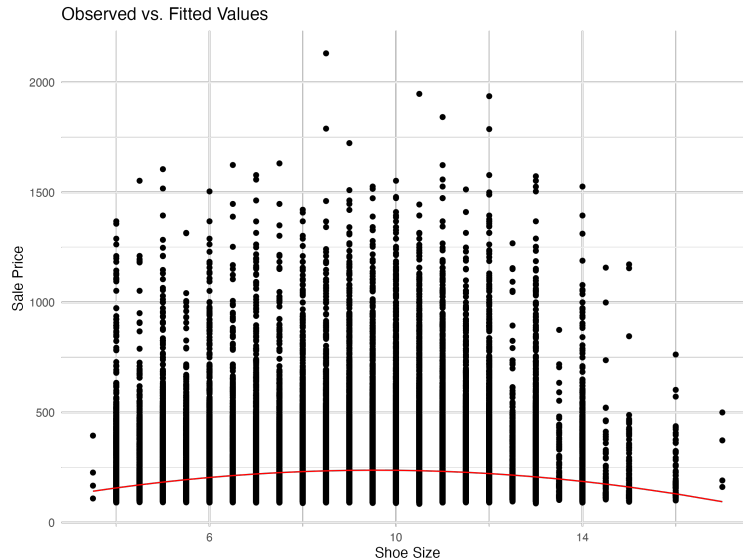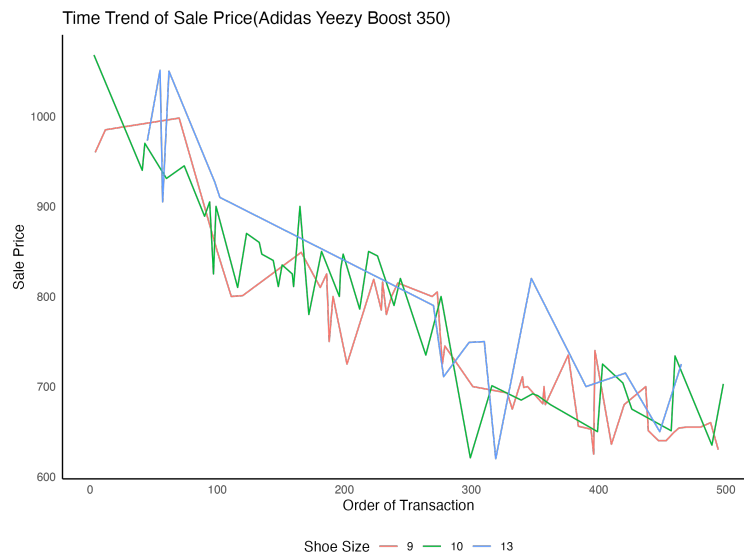# Problem Set 6

JaeSeok Oh

March 11, 2024

Introduce Three Visualizations

- Introduction: This short report is about the data set I am interested in: the transactions of sneakers in StockX. Thanks to StockX Data Contest in Kaggle(url: https://www.kaggle.com/datasets/hudsonstuck/stockx-data-contest), I could easily download 99,956 observations from Jul 2017 to Feb 2019.

1. First, I was wondering if the size of sneakers has an impact on sale prices - a seller might sell a pair at this price to a buyer, and vice versa. To think about this thought, one might be able to think that a pair of sneakers which is size 9-10 could be traded at the highest price due to the higher demand than the other sizes. Below is the plot and fitted values from the squared polynomial regression. The result seems reasonable, but it's difficult to conclude that shoe size alone has a significant impact.

2. Second graph shows the price decreasing pattern over time. Note that I mark the order of transactions as a time dimension. For example, a pair of sneakers was traded 3 times in a day. I generate the 'order' variable to set the order of transaction so that the pair has 1,2, and 3 times traded. This logic seems unreasonable since the other sizes and types of sneakers could not be marked in exactly the same time marking. However, it is sufficient because the beginning of this research requires to check the price pattern.

Time Trend of Sale Price(Adidas Yeezy Boost 350)

3. Finally, I draw a histogram to show which range of price is the most frequently sold. More than a half of transaction occurred less than $1,000.

Histogram of Sale Price