

Predicting Diamond Price

Understanding the Model

According to the linear model, if a diamond is 1 carat heavier than another with the same cut and clarity, how much more would the retail price of the heavier diamond be? Why?

If a diamond is heavier than another in a 1 carat company needs to pay an extra 8413 dollars, with the same cut and clarity.

If you were interested in a 1.5-carat diamond with a *Very Good* cut (represented by a 3 in the model) and a VS2 clarity rating (represented by a 5 in the model), what retail price would the model predict for the diamond?

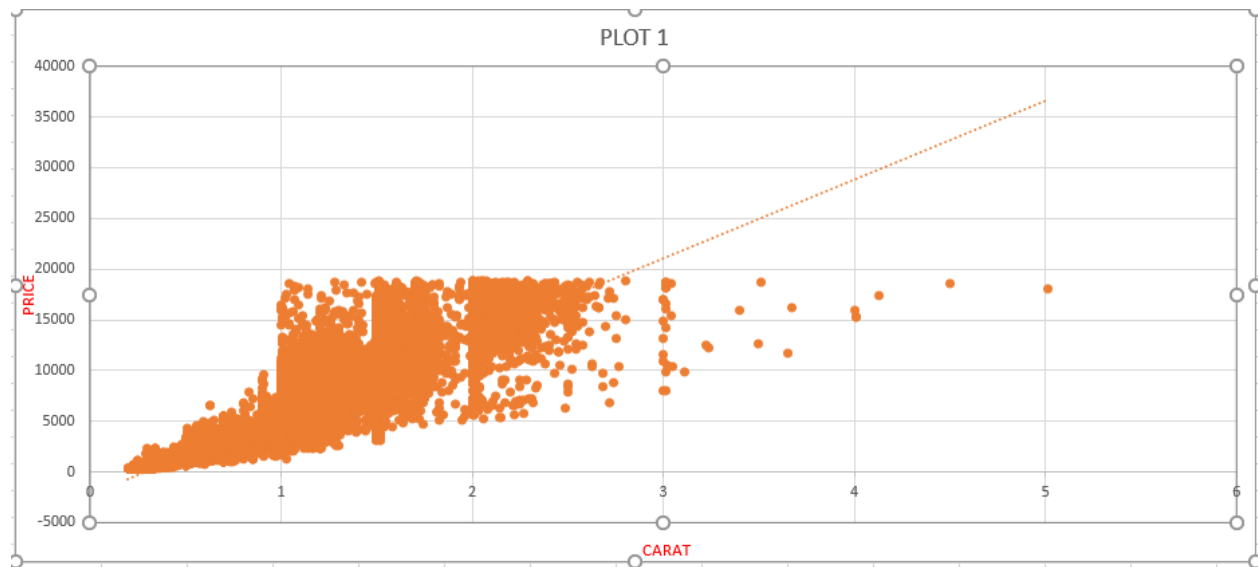
$$Y = -5269 + 8413 * \text{carat} + 158.1 * \text{cut} + 454 * \text{clarity}$$

$$Y = -5269 + 8413 * 1.5 + 158.1 * 3 + 454 * 5$$

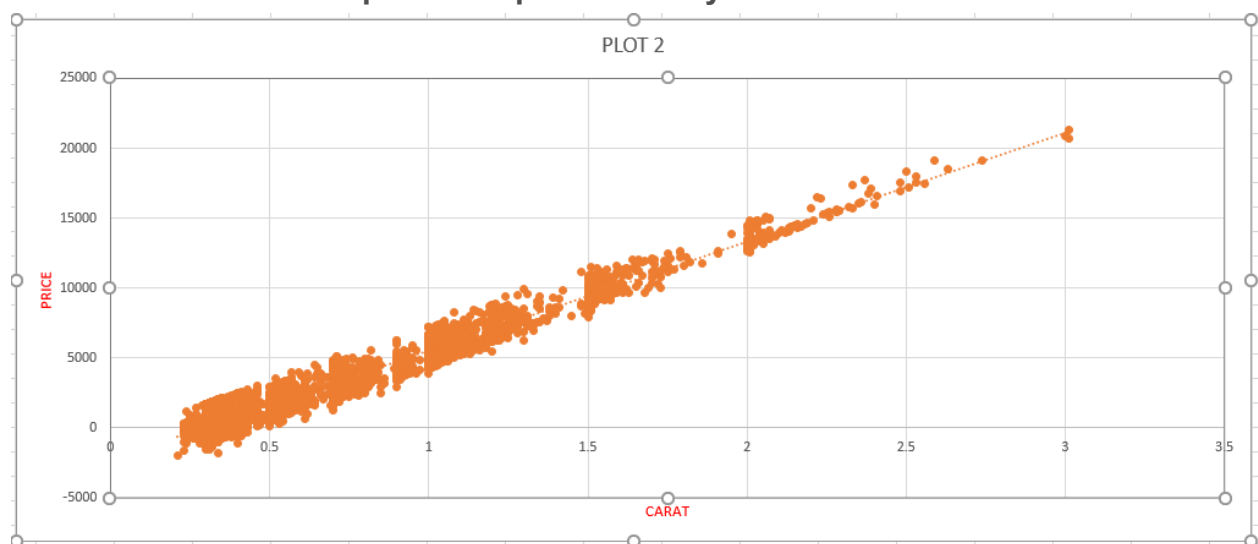
$$Y = 10,094.8 \text{ Dollars}$$

Visualize the Data

Plot 1 - Plot the data for the diamonds in the database, with carat on the x-axis and price on the y-axis.



Plot 2 - Plot the data for the diamonds for which you are predicting prices with carat on the x-axis and predicted price on the y-axis



What strikes you about this comparison? After seeing this plot, do you feel confident in the model's ability to predict prices?

I'd have confidence about this model's ability to predict price but there should be more predictor variables for a more accurate predicted price.

The model shows a strong correlation between carat and price.

The Recommendation

What bid do you recommend for the jewelry company? Please explain how you arrived at that number.

The total Retail price is 11,733,522.76 dollars.

The company generally purchases diamonds from distributors at 70% of the price. So 70% of the total retail price is 8,213,465.932 dollars.

