

Assignment #4 (I3)

Valuing Ships

Individual Assignment

Please read HBS Case No. 9-211-014 “Compass Maritime Services, LLC: Valuing Ships” and answer the following questions. Please turn in only a pdf file that includes your code and answers (but not the data). The analysis for this assignment must be done in Python.

1. Looking at Exhibit 4, which ship is (or ships are) the best reference transaction(s), that is the closest comparable(s) to the Bet Performer? How much is the Bet Performer worth based on comparable transactions (no regression needed here)?
2. Regression Analysis
 - a. What is the expected relationship between ship price and each factor listed in Exhibit 4 (size, age, and charter rates)? The Baltic Dry Capesize Index in Exhibit 4 provides a composite measure of charter rates for capsize ships across markets (see the first paragraph on p.3). What is the economic logic for why each factor might affect ship value?
 - b. Can you think of other factors that might predict ship prices?
 - c. Using the data from all ships in Exhibit 4, run a multiple regression of SalePrice on DWT, Age, and Cindex. How well do all three factors jointly explain ship prices? In other words, what percentage of the variation in ship prices does your model explain?
 - d. Using all three factors, what is the predicted price for the Bet Performer? Compute a 95% confidence interval for an average ship like the Bet Performer and a 95% prediction interval for the Bet Performer itself. Note that Bet Performer is an 11-year-old, 172K capesize bulk carrier. In May 2008, when the potential client shows interest in buying a ship, the trailing 1-year average monthly Baltic Dry Capsize Index (charter rates) is 12,479 (Exhibit 4).
 - e. What would the price be if the Bet Performer were 5 years younger (6 years old rather than 11 years old), if the ship were 20K DWT smaller (152K DWT rather than 172K DWT) or if charter rates in May 2008 were 30% lower (the trailing Capesize Index were 8,735 instead of 12,479)? In each case, assume all other factors remain the same (e.g., when considering the 6-year-old ship case, keep the other factors at 172K DWT and 12,479 Capesize Index). No need for confidence intervals here.
3. If you were Basil Karatzas, what would you recommend to your client regarding an offer price for the Bet Performer? What concerns, if any, would you have? What recommendations would you make?
 - If you recommend that your client should bid, then please also provide how much to offer/bid (specific number) and explain your reasoning.
 - If you recommend your client do something else, please explain.
 - Also, if you have any additional concerns/thoughts, please describe them.