

The stock market, like the weather, is subject to numerous influences and is inherently chaotic. The purpose of this project is to investigate the predictability of the stock market through empirical observation and regression modeling.

- I. Choose three stocks from the NYSE or/and NASDAQ and keep a log of their closing values at the end of each day over the next two business weeks (4/5 - 4/9 and 4/12 - 4/16). From your ten data points for each stock, generate
- (1) a trigonometric regression
 - (2) a quartic regression
 - (3) A trigonometric regression based on the three day moving average of the data.
- II. For each of the functions generated in #1 (there should be three for each stock), find the following:
- The approximate rate of growth at the end of the second week. Comment on whether the stock appears to be increasing in value or decreasing. Discuss which stock is increasing most quickly.
 - The average value of the function (hence the average value of the stock). Compare these with the discrete average of the data points for each stock. Comment on any discrepancies.
 - Predict the value of the stock at the end of the third week (4/23). Comment on the accuracy of the functions and which seemed to give the best prediction.
 - Give a prediction for the value of each stock on May 26 and indicate which you think will be most accurate and why. The best prediction earns 5 extra credit points (provide a printout of the stock and your original function with the prediction attached).
- III. Summarize your findings in one or two paragraphs detailing what seem to be the most valuable observations. Comment at length on the different functions and their usefulness in predicting future values. Discuss the implications this holds for people who play the stock market routinely. Would you use any of these approximations to play the market? Propose improvements or alternatives that might make this approach better.