

Birla Institute of Technology & Science, Pilani

Work Integrated Learning Programmes Division

Introduction to Data Science (S2-21_DSECSZG523)

Assignment – I

Assignment Question

Regression Analysis for the prediction of Bombay Stock Exchange Sensex

Abstract

The stock price, as represented by the movement of the sensitive index is a complex phenomenon. It is affected by macroeconomic factors, market sentiments, company news, political news and even natural calamities. On top of it, the Sensex also shows random variations, which at times, may be significant. In India, Bombay Stock Exchange (BSE) and Nifty are the two primary Stock Exchanges for share trading.

You are required to develop a Regression model or any other suitable model for the BSE Sensex index which could be used to predict the index value in near terms.

Action Required:

- (1) What is the dependent variable?
- (2) Choose the independent variables? [at least 2 variables]
- (3) Get data of last many years till June'2021. Prepare the data for Model building.

Justify your choice for granularity of data, length of data and any other considerations.

Present excel sheet for both the raw data and cleaned data.

- (4) Build Model using data till Mar'2021. Show code and describe the formula and present regression summary statistics and interpret it.
- (5) Present Residual plot for the Model and interpret it.
- (6) Apply the model to predict index values for the Apr-Jun'2021 quarter and calculate a suitable metric to determine the prediction accuracy of the model.