

Midterm Project Outline

The project is about Demand estimation & forecasting. To this effect, you will need to obtain data on both revenue/sales volume (dependent variable) and price and/or other relevant determinants of demand (independent variables). - i.e.) The Demand function can be specified, for example, as $Q_x = a + b_1P_x + b_2Y + b_3P_z + b_4Adv + e$, where Y = income, P_z = price of related good, Adv = expenditure on advertising, e = error term and $b_1 < 0$, $b_2 > 0$, $b_3 > 0$ or $b_3 < 0$ depending on whether Z is a substitute or complement, and $b_4 > 0$ presumably.

The relevant variables defining demand function do not necessarily have to be like the above model. It may range from the simplest one with only one single variable (price), hence $Q_x = a + bP_x + e$, to the most complicated multivariate model depending on what you consider to be the relevant factors. So, try to identify the factors that you think are relevant in determining the Demand, but keep in mind that a lengthy model is not necessarily a better model. As you will see in our upcoming class, the efficacy of the model is judged by R^2 , t-value of the parameters, and the overall F-statistics of the model. If you get good numbers on these criteria, the model is a good one, but if these numbers are insignificant, it indicates that the model is not correctly specified no matter how many or few variables it contains. Remember that a good model is not necessarily a long one, and a lengthy model is prone to its own pitfalls.

As for the data, you may choose to work on company- specific case or industry-specific case. You may also work with monthly, quarterly or annual data series. Either way, you will need sufficiently large enough data set for each series to run the regression (30 data points minimum). Some companies may not like to disclose their revenue info. If that's the case, try other companies, or you may work with the industry data. Start with a specific company, go to their webpage and see if you can download or at least view their product-specific revenue info. Most companies have their annual reports on their webpage which contain their financial statements. However, these annual reports are mostly for the recent years, and may not go back 10 to 30 years into the past, since having company webpages is relatively a recent development. Then, what do you do? Try the library. Most libraries carry hard copy annual reports of major companies since the time they published annual reports. Still, if you have hard time, try industry data by first checking out Statistical Abstract of the U.S. or other data source links provided in my webpage or listed in the textbook.

If you still don't feel you are up to the tedious task of data-mining, please let me know, and I'll assign you problems from the textbook.