



Assignment No 2:

Short Term Cost Curve Estimation

1. Assignment Description

A short term cost curve refers to the mathematical relationship between the amount of product produced and the cost of production given that some of the production inputs are fixed. In our case, it is assumed that technology, automation and the number of skilled workers are fixed. The only variable input is the number of unskilled workers.

The assignment's purpose is the estimation of the short-term demand curve for a single product in a single technology's and automation levels. Once the demand curve is estimated, the student is requested to estimate the break-even point for several levels of market pricing for the product.

2. Background Theory

The short term cost curve should be estimated using linear regression for the following equation

$$C = \alpha + \beta_1 Q + \beta_2 Q^2$$

Once the coefficients are estimated, calculate the short-term average and short term marginal cost curves.



Assignment No 2:

Short Term Cost Curve Estimation

3. Data Source

- Single firm with selected technology and automation.
- Generate production for several unit levels (1,000, 3,000, 5,000, 7,000, 10,000, 12,000, 15,000, 17,000, 20,000).
- For each production level adjust the required quantity of managers, skilled workers and raw materials.
- Run simulations.
- Records the total cost of production from the P&L report.

4. Analysis Required

- a. Run linear regression using the above functional forms as describes is section 2.
- b. Discuss the quality of the regression results by comparing the R^2 , F values and the P values of the repressors' coefficients.
- c. Derive the average and marginal cost curves. What do the results mean? Does the technology constantly return to scale or not.
- d. Given the estimated cost curves and assuming price may vary +/-20% from the average price in the north region, what is the breakeven point for this product?
- e. What is the minimal production cost for this product and is it different from the breakeven point? Why?