Comparative Statics - Quiz

Question 1

1/1 point (graded)

If the error variance (σ^2) of our estimates is larger, we can estimate the linear relationship between Y and X more precisely.

- a. True
- b. False ✔

Explanation

A higher error variance means that the variance of our $\hat{\beta}$s is higher, meaning that we should be less sure of our estimates. This means we should have less confidence in our ability to estimate the linear relationship precisely.

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Question 2

1/1 point (graded)

Greater variance in X (σ_x^2) means greater variance in our estimates $\hat{\beta}$.

a. True

b. False ✔

Explanation

As the variance in X decreases, the variance in our estimates increases because we don't have a lot of variation in X to identify the effect we are interested in. Remember that the limit (when there is no variance in X), we cannot estimate the linear regression coefficients $\hat{\beta}$ at all.

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Question 3

1/1 point (graded)

The Multivariate Linear Model
due Nov 28, 2016 05:00 IST

Module 9: Homework
due Nov 21, 2016 05:00 IST

- Module 10: Practical Issues in Running Regressions, and Omitted Variable Bias
- Exit Survey

Professor Ellison discusses a mechanical relationship between the two estimates β_0 and β_1. Which of the following is true about the relationship between $\bar{X}$, estimates of β_0 and β_1?

- [ ] a. If $\bar{X} > 0$, an overestimate of $\hat{\beta}_0$ will likely lead to an overestimate of $\hat{\beta}_1$.
- [x] b. If $\bar{X} > 0$, an underestimate of $\hat{\beta}_0$ will likely lead to an overestimate of $\hat{\beta}_1$.
- [ ] c. If $\bar{X} > 0$, an underestimate of $\hat{\beta}_0$ will likely lead to an underestimate of $\hat{\beta}_1$.
- [x] d. If $\bar{X} > 0$, an overestimate of $\hat{\beta}_0$ will likely lead to an underestimate of $\hat{\beta}_1$.

✔

Explanation

We know that $\hat{\beta}_0$ **and** $\hat{\beta}_1$ are related as follows: $\hat{\beta}_0 = \overline{Y} - \hat{\beta}_1 \overline{X}$. Therefore, if we overestimate or underestimate the intercept β_0, then the slope β_1 will have to make up for it (by doing the opposite).

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✔ Correct (1/1 point)

Discussion

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Topic: Module 9 / Comparative Statics - Quiz