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Two Stage Least Squares, cont. - Quiz

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Question 1

1/1 point (graded)

True, false or uncertain: One can use the same instrument for two different endogenous explanatory variables in the same regression.

- a. True
- b. False ✔
- c. Uncertain

Explanation

You must have at least as many instruments as you have endogenous explanatory variables (this is referred to as the "rank condition.")

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Question 2

1/1 point (graded)

Performing two stage least squares in two steps rather than one will: (Select all that apply)

- [x] a. Give the correct point estimates
- [ ] b. Give the correct standard errors
- [ ] c. Give the incorrect point estimates
- [x] d. Give the incorrect standard errors

✔

Explanation

The point estimates will be correct because the calculations are the same, but the standard errors will be incorrect because running the second step separately ignores the additional error from estimating the first stage rather than using the observed values.

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 3

1/1 point (graded)

Which of the following represents the 2SLS estimator that is equivalent to your Wald estimator if your instrument is binary?

a. The ratio of the coefficients on your explanatory variable in the first stage divided by the coefficient on your explanatory variable in the second stage.

b. The ratio of the coefficients on your explanatory variable in the second stage divided by the coefficient on your explanatory variable in the first stage.

c. The coefficient on the "fitted" explanatory variable in the second stage. ✔

d. The coefficient on your explanatory variable in the first stage.

Explanation

If your instrument is binary, then as you saw, your Wald estimator is given by:

$$\frac{\text{Reduced Form coefficient on instrumental variable}}{\text{First stage coefficient on instrumental variable}}$$

Your 2SLS estimator is just the coefficient on the “fitted” explanatory variable in the second stage. Refer to the slides to see this equivalence mathematically.

Submit You have used 2 of 2 attempts

✔ Correct (1/1 point)

Discussion

Topic: Module 12 / Two Stage Least Squares, cont. - Quiz

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[staff] question 3

question posted 3 days ago by **Solene_De**

Could you please explain how the answer would differ if the instrument was non binary?

This post is visible to everyone.

Roman-Andres-Zarate **Staff**

2 days ago - marked as answer 2 days ago by **Solene_De**

The answer would not differ if the answer is not binary. It is still true that the answer will correspond to the 2SLS.

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