A Simple App to Teach Regression, http://trialandstderror.com/
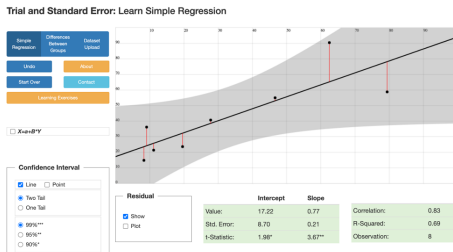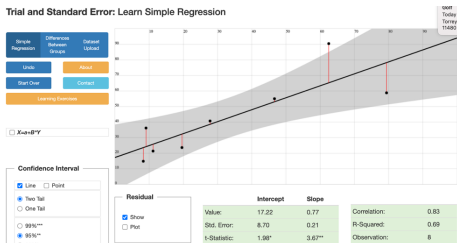
Luke Froeb

Vanderbilt University

December 31, 2020

Exercise 1: Line Confidence Interval

Create a data set with two properties:

1. You cannot draw a horizontal line inside the 95% line confidence interval.
2. You can draw a horizontal line inside the 99% line confidence interval.

Click on the buttons 95% or 90% to see the two line confidence intervals.

95% vs. 99% Line Confidence Interval and Statistical Significance

Context: Does Private University Education Affect Wages?

Professor Angrist's "Ceteris Paribus" and "Selection Bias" videos at Marginal Revolution University.[1]

Y = post-school wages,

X = student quality, measured by test scores,

Black dots represent private university students, and
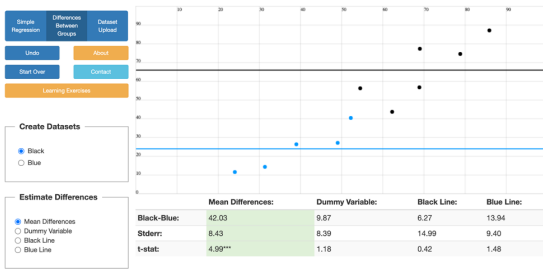
Blue dots represent public university students.

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[1]https://mru.org/mastering-econometrics

Exercise 2: Between-group differences, False Positive
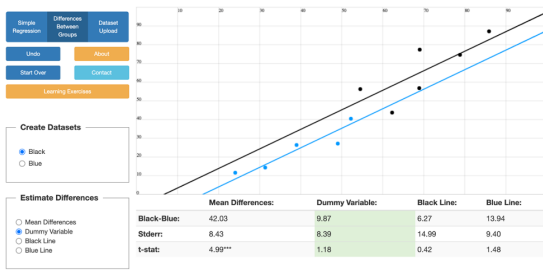
Create a data set with two properties:

1. The Mean Differences methodology shows that the two groups are significantly different, denoted by two asterisks after the t-stat; and

2. The Dummy Variable methodology shows no significant difference between the groups.
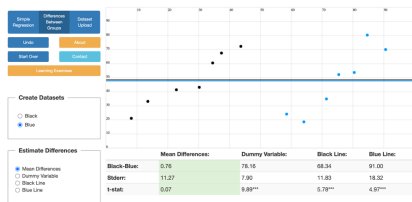
Between Group Differences, False Positive

Exercise 2: Between-group differences, False Negative
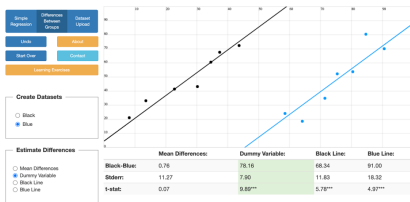
Create a data set with two properties:

1. The Mean Differences methodology shows that the two groups are not significantly different; and

2. The Dummy Variable methodology shows significant difference between the groups.

Between Group Differences, False Negative