

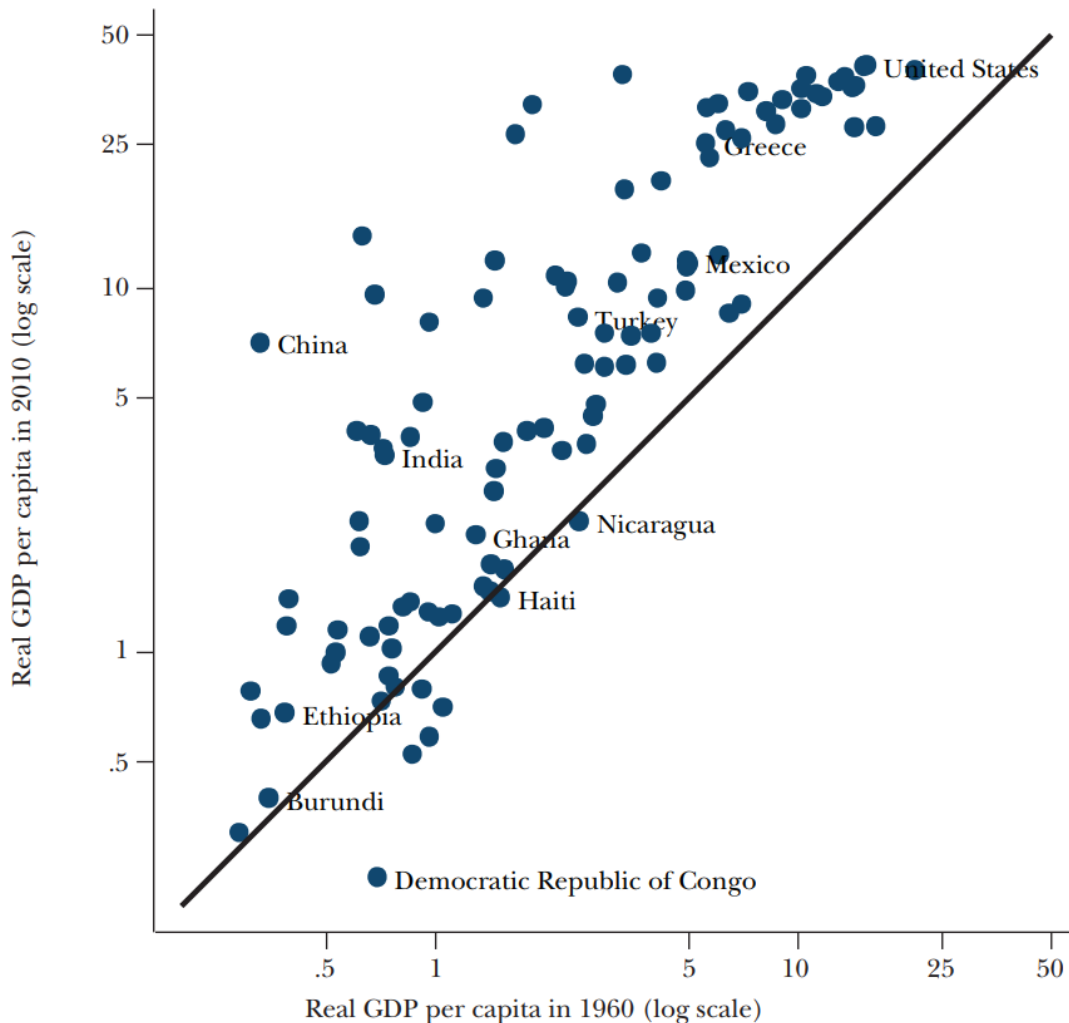
## Homework 6: ECO220Y

**Required Exercises:** Chapter 7: N/A

**Required Problems:**

**(1)** Most importantly, do Exercises Q1 – Q7 on pages 14 – 17 of “Logarithms in Regression Analysis with Asiaphoria.”

**(2)** Consider this figure from the journal article: Kraay and McKenzie (2014) “Do Poverty Traps Exist? Assessing the Evidence.” *Journal of Economic Perspectives*, 28(3): 127-48 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.28.3.127>.



Source: Penn World Tables, Version 7.1.

Note: Real GDP per capita is in thousands of 2005 US dollars adjusted for differences in purchasing power.

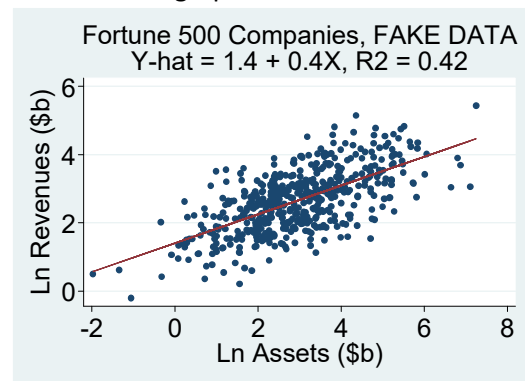
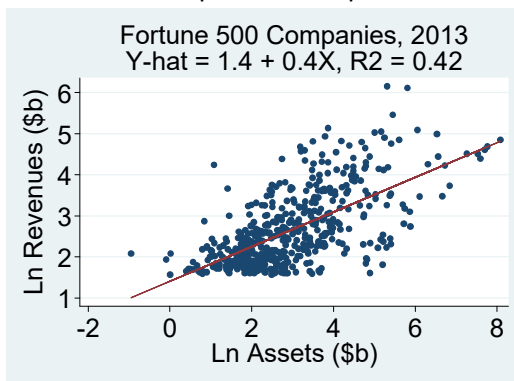
**(a)** Are the raw data underlying this graph time series, panel, or cross-sectional? Why?

**(b)** Is the line in the graph the OLS line? How do you know?

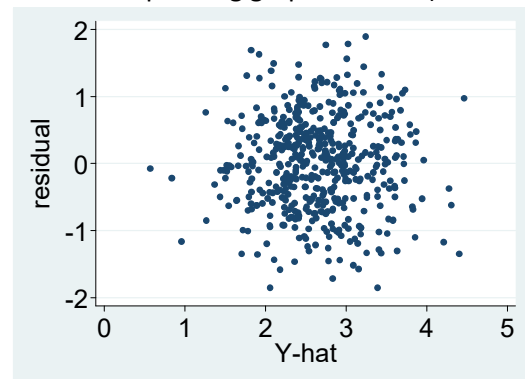
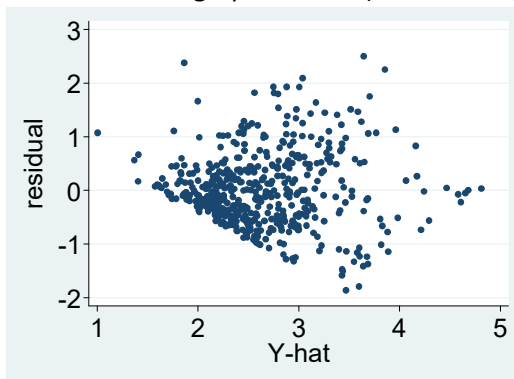
**(c)** Why have the authors taken the logarithm of both the y and x variables? What is the meaning of the scale of the axes? Why are 5 and 10 depicted as the same distance apart as 25 and 50?

**(d)** The title of this figure is “Absolute Income Stagnation is Rare.” Explain why that is a good title.

**(3)** Recall the Fortune 500 companies example from Lecture 6. Here are two graphs from that lecture:



What do these two additional graphs show? (Each lines up with the corresponding graph above it.)



**(4)** Recall required problem (7) in HW 5. Consider these OLS regression results (noticing the natural log transformation). Fully interpret all numbers.

$\text{ghg\_rating-hat} = -12.59 + 6.02 \cdot \ln(\text{city\_fe})$ ;  $R\text{-squared} = 0.94$ ;  $n = 1,250$