

Problem Set #1

POSC 3410 – Quantitative Methods in Political Science

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This homework assignment will refer to the `1-get-some-WB-data.R` script I wrote and made available on my GitHub page.¹ This script grabs four indicators from the World Bank's data center using the WDI package. These four macroeconomic indicators are the gross national income per capita (**gnipc**), the primary energy use in kilograms of oil per capita (**pec**), the national unemployment rate (**unemploymentrate**), and the child mortality rate (**cmr**) of a given country.² Answer the following questions in two to three complete sentences.

1. Get the mean of the gross national income per capita variable. Now, get the median. What does this suggest in terms of the skew of this variable?
2. Look at the histogram of the gross national income per capita variable. What type of skew does this suggest? In lay terms, what does this mean for the distribution of gross national income per capita across the world?
3. Take a natural logarithmic transformation of the gross national income per capita variable. Look at the mean of this log-transformed variable and then the median. What does this suggest in terms of the skew of this variable?
4. Get a histogram now of the **pec** and **unemploymentrate** rate variables. Log-transform both and get a histogram of the transformations. What do you see? Do these look more "normal"?
5. Subset the World Bank data to just the Central Asian countries of Turkmenistan, Tajikistan, Kyrgyzstan, Uzbekistan, and Kazakhstan. Get a histogram of the **cmr** variable. Do you see a skew problem for the child mortality rate among these countries?

¹<https://github.com/svmiller/get-some-WB-data>

²The temporal domain of these indicators vary.