

**Macroeconomics Theory and Policy (ECO202)**  
**2020 - 2021**  
**Writing Assignment#2**

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**Total: 100 marks.**

The purpose of this assignment is to estimate the Phillips curve and Okun's Law for the country of your choice and write a well-structured research report about the whole process of acquiring and refining your data, estimating, and interpreting the estimated coefficients based on the theoretical background of your models and empirical implications of the estimated equations for the country of your study.

In order to help you, your article should include, among other things, following steps. Please note that your final paper must have a complete structure from introduction to conclusion and references with an internal coherence. These steps are just to help you to organize your paper, and not to be treated like questions to get your answer mechanically.

In order to find help for writing, referencing methods, avoiding plagiarism, please consult with following website: <http://www.writing.utoronto.ca/advice/using-sources>

1- Choose a period time not shorter than 20 years and as recent as possible. For each year, find the following time series data for your country from **reputable** sources (World Bank, IMF, UN, or local statistical agency of your country of choice): Inflation rate (the GDP deflator inflation rate is preferred), unemployment rate, and real GDP, in terms of **local currency**. A description of the used data sources should be included. **(15 points)**

2- Present the data in form of tables and graphs that you think are informative for your audience. Discuss the sources of your data, nature of the data and the assumptions that you may use to construct the needed data. It is preferable to put the tables and graphs in the appendix. **(10 points)**

3- You can use the Microsoft Excel LINEST function to estimate a and b coefficients in a different version of the Phillips Curve in an equation like this:

$$\pi_t - \pi_{t-1} = a + b Y_t$$

**Note:**

- Instead of the unemployment rate, we have the real output in this version of Phillips curve, so b must turn out to be positive, not negative.
- You can use any other of statistical software that you know, instead of the LINEST function.
- If you have any problem working with the LINEST function, search YOUTUBE, for the tutorials. You can learn it within a few minutes, using the tutorials and my example file.
- In order to see one example of using LINEST function for estimations, check the posted example on the portal.
- All estimated coefficients and statistics should be fully presented. The exact output of the LINEST function or any other software that you use must be included. **(15 points)**

4- Using algebra, rearrange your estimated equation into the standard Phillips Curve like below to find  $\alpha$  and natural level of output for your country of choice. **Note again:** I used Y instead of u in this version of the Philips Curve):

$$\pi_t - \pi_{t-1} = \alpha(Y_t - \bar{Y})$$

Discuss the size and sign of these values. Discuss the statistics of the model, like  $R^2$ . **(15 points)**

5- In this part you should estimate the Okun's Law by estimating an equation like this:

$$u_t - u_{t-1} = a + b g_{yt}$$

Where,  $g_{yt}$  is the growth rate of real GDP. All estimated coefficients and statistics should be fully presented. The exact computer output of the estimation should be included. **(15 points)**

6- Rearrange the estimated equation in to standard Okun's Law like below to find  $\beta$  and  $g$ , which is called normal growth rate:  $u_t - u_{t-1} = -\beta(g_{yt} - g)$ .

Discuss the size and sign of these values. Discuss the statistics of the model, like  $R^2$ . **(10 points)**

7- General organization, quality of presentation, creativity and elaboration of the paper and also proper referencing: **(20 points)**

### **Administrative issues:**

- The project should be done by each student independently. You should let me know following information by email, **by Feb. 15, 2021:**

- Your name and student ID Number.

- A list of six or seven countries from the next page list, in order of your preference. I will choose and let you know the country that you should work on. You cannot change your country, after my approval. Countries will be assigned on the first come first serve basis.

- The quality of analysis always matters more than quantity. But your assignment could be around 2000 words (excluding the tables, graphs, and references).

- You should report all your references. As you know plagiarism is a violation that is prosecuted based on the university rules. In suspicious cases, I may decide to check your assignments by Turnitin.

- The assignment must be submitted before **March 28, at 9pm, sharp**, through Quercus. **The assignment must include the names and student ID Numbers, on the cover page, otherwise your marks may not be recorded correctly.**

- The deadline will not be extended. No excuse like network failure or system interruption ... is acceptable. If you miss this project, it cannot be substituted by anything else.

-The only acceptable submission format is **ONE** file in **PDF** format, with following name. Marks will be deducted if the rules are not followed.

**ECO202\_Country\_lastname\_Student#.pdf**

For example, for Nigeria: **ECO202\_Nigeria\_Jones\_123456789.pdf**

- The file must be sent **only once**. If you send several versions or several times, one of them is selected, **RANDOMELY**, by the computer.

## **List of Countries**

**A:** Algeria, Argentina, Armenia, Azerbaijan

**B:** Brazil, Bulgaria, Burkina Faso

**C:** Cambodia, Cameroon, Chile, Colombia

**E:** Egypt, Ethiopia

**G:** Ghana, Guatemala

**H:** Honduras

**I:** India, Indonesia, Iran, Israel

**J:** Jordan

**K:** Kenya, Korea (South)

**M:** Madagascar, Malawi, Malaysia, Mali, Mexico, Morocco, Mozambique, Myanmar

**N:** Nepal, Niger, Nigeria

**P:** Pakistan, Paraguay, Peru, Philippines

**S:** Senegal, Singapore, South Africa, Sri Lanka, Sudan

**T:** Thailand, Tunisia, Turkey, Tanzania

**U:** Uganda, Uruguay

**V:** Vietnam

**Z:** Zambia, Zimbabwe