

EC 390 Problem Set 01

Instructions: Answers must be submitted online through the designated Canvas assignment in a **PDF file**. Any other file type is not allowed. This Problem Set is due on **October 08 at 11:59am**. Please write as legible and clearly as possible. You will not be given full credit if your answers cannot be easily understood.

Questions

1. [7 points] What does it mean if someone is living in *absolute poverty*? What is the World Bank's definition of absolute poverty? Does it make sense to define poverty in terms of income? Why or why not? (No more than 1 or 2 paragraphs)
2. [3 points] The **Purchasing Power Parity (PPP)** is defined to be (in your own words):
3. [10 points] Use the following information to determine whether there is evidence of **relative convergence, absolute convergence, or both**:

Country	GNI per Capita (2010)	GNI per Capita (2019)
Megaton	\$545	\$890.21
New Vegas	\$350	\$458.61

4. The prices of goods in Maynooth and Eugene are given below. Note that the prices from Maynooth are measured in € and prices in Eugene are measured in \$.

	Maynooth	Eugene
Shoes	€45	\$ 55
Sweaters	€35	\$ 20
Hat	€20	\$ 15

- (a) [4 points] Suppose that we define a basket of goods as **two pairs of shoes** and **one sweater**. What is the **purchasing power parity** between Maynooth and Eugene ($P_{May,Eug}$)?

- (b) [3 points] Suppose that the GNI per capita of Maynooth is € 1,500. Using part (a), what is the **PPP-adjusted** value of Maynooth's GNI per capita (in \$)?

- (c) [3 points] Suppose that the GNI per capita of Eugene is \$ 2,500. Using part (a), what is the **PPP-adjusted** value of Eugene's GNI per capita (in €)?

5. Consider the city of Hamilton, New York. Let Hamilton follow the Harrod-Domar model of growth.

(a) [3 points] Hamilton's ratio of capital-output is 5.5 and has a savings rate of 22%. At what rate do you expect Hamilton's output to grow?

(b) [3 points] Hamilton wants to increase the city's growth rate to 7.7%. If Hamilton's capital-output ratio remains at 5.5, what savings rate should Hamilton target if it wants to achieve this growth rate?

(c) [4 points] **True or False?** Developing countris can change their savings rate easily. Explain. (Be brief, no more than 1 paragraph)

6. [10 points] Consider the Solow model discussed in class. Consider a population growth rate increase from n to n' . Show graphically what happens to **capital per worker** (k) and **output per worker** (y).