**Assignment weeks 6, 7 and 8**

*To answer all the questions below, you must use Stata (and, specifically, DASP, if requested). Be concise and clear in your answers.*

*The assignment is divided into three exercises (the points assigned to each exercise are indicated next to each exercise). Please answer (A) directly in this file after each question (Q) and please attach the \*.do file (do-file) that you generated. Rename both files as: “Assignment weeks 6\_7\_8 - Name, Surname”. Please submit this completed file and the \*.do through the virtual drop box (boîte de dépôt) in the course portal, no later than Tuesday, March 23 11:59 p.m. (*[***Québec time***](https://www.timeanddate.com/worldclock/converter.html?iso=20190327T035900&p1=189)*).*

# Exercise 1 (3.5%):

1. Using the data file data\_b3\_3.dta, estimate the subjective poverty line, by considering the following information:

* The observed equivalent-adult wellbeing is the variable: *ae\_exp*
* The perceived minimum equivalent-adult wellbeing to escape poverty is *min\_ae\_exp.*
* The individual is the unit of analysis (use the household size variable).

**A:** The subjective poverty line: 22,832.94.



1.2 Estimate the poverty gap (using the variables: *ae\_exp* and *hsize*) for each of the three cases, and then discuss the results:

1. the subjective poverty line;
2. the absolute poverty line (z=20900)
3. The relative poverty line: (z= half of average income).

**A: Please see the answer in the do file.**

1.3 In your opinion, which is the most appropriate method for measuring poverty in developed countries and why?

**A:**

In developed countries, the use of relative poverty line is the most appropriate method for two main reasons.

First, the living standards in developed countries are generally high. Poverty is basically viewed as a relative distance from the average income of the population; thus, it is defined as a fraction of the average income. Alternative method such as “absolute poverty line” will underestimate the poverty level.

Second, connected to the first point above, the relative poverty line will provide a consistency of poverty profile. So, it allows us to compare poverty dynamics across time span.

# Exercise 2 (4.5%):

Additive poverty indices, like the FGT index, allow performing an exact analytical decomposition of these indices by population subgroups. This is useful to show the contribution of each group to total poverty.

2.1 Use the file data\_b3\_3.dta and decompose poverty (headcount index) by the gender of the household head (***sex***) (the poverty line is 20900). What can we conclude?

**A: Please see the answer in the do file.**

2.2 Estimate the total poverty (headcount) according to the region of the household head (***region***).

**A: Please see the answer in the do file.**

2.3 The distribution of the adult equivalent expenditures is similar to that of the initial period (*ae\_exp*), with the following slight differences

* the adult equivalent expenditures have increased by 11% in region 3;
* the adult equivalent expenditures have decreased by 6% in region 2;

Generate the variable *ae\_exp2,* based on the information above.

**A: Please see the answer in the do file.**

2.4 By using the Shapley approach, decompose the poverty gap change into growth and redistribution. Discuss the results.

**A: Please see the answer in the do file.**

2.5 Perform a sectoral decomposition (based on region groups) of the change in total poverty gap. Discuss the results.

**A: Please see the answer in the do file.**

# Exercise 3 (4.5%):

Assume that the population is composed of ten individuals. The following table shows the distribution of incomes of two successive periods.

|  |  |  |  |
| --- | --- | --- | --- |
| *Identifier* | *weight* | *inc\_t1* | *Inc\_t2* |
| 0 | 0 | 0.00 | 0.00 |
| 1 | 0.1 | 1.50 | 1.54 |
| 2 | 0.1 | 4.50 | 3.85 |
| 3 | 0.1 | 7.50 | 6.60 |
| 4 | 0.1 | 3.00 | 2.75 |
| 5 | 0.1 | 4.50 | 4.40 |
| 6 | 0.1 | 9.00 | 7.70 |
| 7 | 0.1 | 10.50 | 8.80 |
| 8 | 0.1 | 15.00 | 7.70 |
| 9 | 0.1 | 12.00 | 6.60 |
| 10 | 0.1 | 13.50 | 6.60 |

3.1 Insert the data, and then generate the percentiles (*based on the rank of incomes of the initial period (variable perc)), and the first percentile must be equal to zero*).

**A: Please see the answer in the do file.**

3.2 Initialize the scalar *g\_mean*, which is equal to the growth rate in the average income.

**A: Please see the answer in the do file.**

3.3 Generate the variable *g\_inc*, as the growth in individual incomes.

**A: Please see the answer in the do file.**

3.4 Draw the *Growth Incidence Curve* using the variables *g\_inc* and *perc*. Discuss the results.

**A:**



3.5 Assume that the poverty line is equal to 10.4. Estimate the Chen and Ravallion (2003) pro-poor index (). Discuss the results.

**A: Please see the answer in the do file.**

3.6 Using the Shapley approach decompose the change in the poverty gap into growth and redistribution components. Discuss the results.

**A: Please see the answer in the do file.**