How to Construct Consumption Aggregate, Poverty Lines and Poverty Estimates with the 2016 Barbados Survey of Living Conditions

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INTRODUCTION

This document includes a detailed description of the first two Reports/Deliverables from the IDB contract 00123458, assigned to the consultant Carlos Eduardo Sobrado (vendor ID: 0020018085)

As per the terms of reference included in the Annex A of the contract, this Reports/Deliverables are:

i. **Programs:** Econometric scrips used to calculate the consumption aggregate, poverty and extreme poverty lines departing from the source raw datasets provided by IADB.

ii. **New Data Files:** Updated databases containing the consumption aggregates, poverty and extreme poverty lines (in both STATA and SPSS formats).

PROGRAMS

INPUT DATA FILES

Raw files

There are 12 raw Stata data files:

RT001_Public.dta
RT002_Public.dta
RT003_Public.dta
RT011_Public.dta
RT121_Public.dta
RT122_Public.dta
RT123_Public.dta
RT124_Public.dta
RT125_Public.dta
RT126_Public.dta
RT140_Public.dta
RT141_Public.dta

New names for raw files

The new 12 data files start with a consecutive number, a brief description of the contents and the questionnaire section or sections included in each file. The names are:

01 household_cover_12a_13.sav
02 person_01-10.sav

03 p_expenses_11.sav
04 crop_12b.sav
05 animal_12c.sav
06 milk_12d.sav
07 fish_12e.sav
08 ag_input_12f.sav
09 ag_asset_12g.sav
10 food_14a.sav
11 non_food_14b-d.sav
12 emigration_15.sav

Caloric content data file

A data file was created with the kilocalories for 100 grams, edible portion, and relationship between milliliters and grams for all the relevant food items. The file name is: kilocalories.sav

SINTAX FILES

There are 9 SPSS syntax files with all the commands to create the consumption aggregate, poverty lines and poverty classifications (equivalent to the Stata "DO" files). The first file opens the raw data files, adds a common heading and saves a copy with a different name in two directories. The next seven files estimate the consumption aggregate and poverty lines, and the last file creates some basic results.

The syntax files are labels with letters and should be run alphabetically as follows:

a 0 files preparation.sps
a education health.sps
b personal expenditures.sps
c non food.sps
d food.sps
e house.sps
f total consumption.sps
g poverty lines.sps
h results and new files.sps

DIRECTORIES

Directories to put files

There are only two directories used by the syntax files, “directory X” (C:\1 Barbados\data) and “directory Y” (C:\1 Barbados\analisys).

“directory X” is used to put the raw data files. The Stata files where transformed to SPSS with Stat transfer and save in the same “directory X”.

“directory Y” is for all other uses. The rest of the work is performed from, or save at “directory Y”, including the caloric data file “kilocalories.sav”, all the syntax files and their resulting data files.

Directory references in the syntax files

The first syntax file (“a 0 files preparation.sps”) open the raw files from “directory X”, and save the resulting files in “directory X” and save a copy in “directory Y”. The first active command line is the “CD” command (Change Directory), specifically cd 'C:\1 Barbados\analisys' . To open or save files in this directory is not necessary to indicate the path. For the files to be save in “directory Y”, the entire directory path must be written, for example: SAVE OUTFILE='C:\1 Barbados\analisys\04 crop_12b.sav' .[1] . To run the commands from a different directory, replace the directory with the new one in the first command and in all the command with the full directory path.

For all other syntax files, the first active command is the “CD” command (Change Directory), and always uses “directory Y” cd 'C:\1 Barbados\analisys'. To run the commands from a different directory, replace the directory with the new one in the first command of each syntax file.

RUNNING THE SYNTAX FILES

The programs were run using SPSS 22. The only requirements are to have the raw data files in “directory X” and the caloric file in in “directory Y”, and to run the syntax files in sequential order a 0, a, b, c, d, e, f, g, and h. The only warnings are created running the syntax file “g poverty lines.sps”, after running the FGT section in lines 173 to 181.

[1] Writing the full path overwrites the CD command.

NEW DATA FILES

INTERMEDIATE FILES

After the first syntax file (line 1 in **Table 1**), the next five files (lines 2 to 6) work in different sections from the questionnaire to create the components for the consumption aggregate. Syntax file "f total consumption.sps" (line 7) put together all the components, and finally, the last syntax file (line 8 in **Table 1**) create the poverty lines and poverty classifications.

Each of the syntax files create two intermediate files (three for the food file). The intermediate files' name starts with the same letter as the syntax file, and are followed by numbers 0 and 1, (1 and 2 for the g files). The higher number file is the one with the final estimate.

File "g2 poverty.sav" is the file with the final consumption aggregate values, poverty lines, quintiles, deciles, FGT values, poverty groups, etc.

A special file with the total kilocalories consumed and value paid by each household is created with the syntax file "d foods.sps". This file is named: "kilocalories total and value for each hh.sav" and is later used in the final syntax file (line 8 in **Table 1**) to create the extreme poverty line.

Table 1 Intermediate files for consumption aggregate and poverty lines

	Syntax file name	Output file 1	Output file 2	Output file 3
1	**a 0 files preparation.sps**	all the 12 "new names for raw files"		
2	**a education health.sps**	a0 educ_health.sav	a1 educ_health.sav	
3	**b personal expenditures.sps**	b0 personal_exp.sav	b1 personal_exp.sav	
4	**c non food.sps**	c0 non food.sav	c1 non food.sav	c hh with sevents.sav *
5	**d food.sps**	d0 food.sav	d1 food.sav	d2 food.sav
6	**e house.sps**	e0 house.sav	e1 house.sav	
7	**f total consumption.sps**	f0 agregate.sav	f1 agregate.sav	
8	**g poverty lines.sps**	g1 poverty.sav	g2 poverty.sav	

* temporary file to ID households with living-in servants

FINAL DATA FILES

Finally, all the 12 raw data files were merged with the "g2 poverty.sav" file to include the new weights, quintile and decile classification, consumption aggregate (food, non-food and total), poverty lines values, extreme and total poor classifications, and the FGT for overall and extreme poverty.

The new files were save with the same name but starting with “h ”. Households without consumption aggregate were deleted from the files, and the weights were adjusted accordingly. The file names are:

h 01 household_cover_12a_13.sav
h 02 person_01-10.sav
h 03 p_expenses_11.sav
h 04 crop_12b.sav
h 05 animal_12c.sav
h 06 milk_12d.sav
h 07 fish_12e.sav
h 08 ag_input_12f.sav
h 09 ag_asset_12g.sav
h 10 food_14a.sav
h 11 non_food_14b-d.sav
h 12 emigration_15.sav

BASIC POVERTY RESULTS

Figure 1 Per Capita Consumption by Quintile, Barbados, 2016

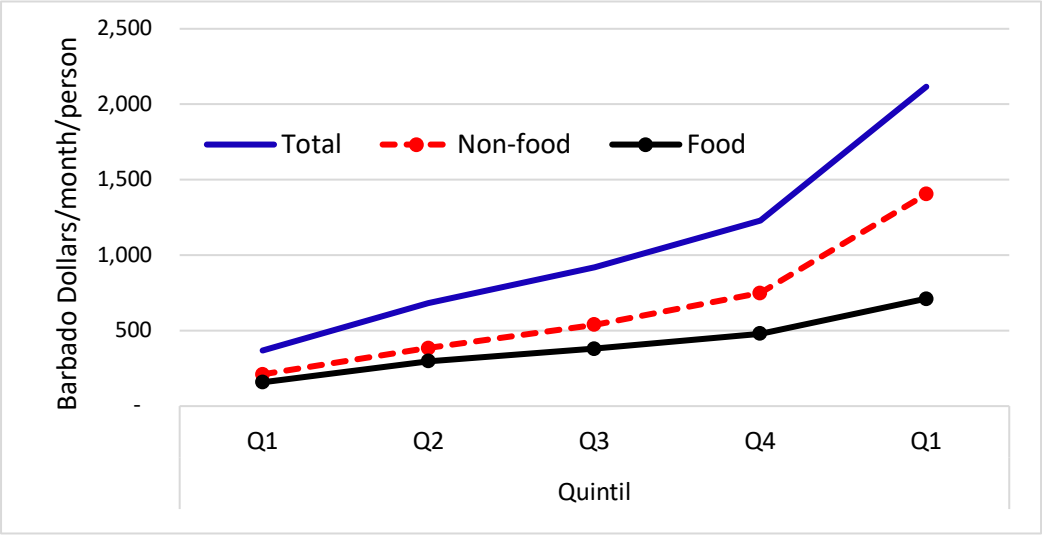

Table 2 Monthly BB$ Per capita consumption, Barbados 2016

	Quintile				
	Q1	Q2	Q3	Q4	Q1
Total	**368**	**683**	**920**	**1,230**	**2,116**
Non-food	211	385	540	749	1,404
Food	158	298	380	480	712

Table 3 Average value of consumption per capita by groups, Barbados 2016

	Quintile					
	1	2	3	4	5	**Total**
	Mean	Mean	Mean	Mean	Mean	**Mean**
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	**100.0%**
FOOD	42.8%	43.6%	41.3%	39.1%	33.6%	**38.1%**
NON-FOOD	57.2%	56.4%	58.7%	60.9%	66.4%	**61.9%**
House	22.7%	18.9%	17.7%	18.9%	19.8%	**19.3%**
Housing services	12.4%	12.0%	12.2%	10.8%	9.1%	**10.6%**
Health	3.6%	4.4%	6.8%	6.7%	10.1%	**7.5%**
Education	4.0%	3.6%	3.1%	2.9%	2.6%	**3.0%**
Clothing and shoes	2.6%	2.8%	2.7%	2.9%	3.5%	**3.1%**
Communication & Transport	5.1%	7.4%	8.1%	9.2%	9.6%	**8.7%**
Personal Expenditures	3.7%	3.8%	4.1%	3.7%	3.3%	**3.6%**
Entertainment	1.0%	1.5%	1.5%	2.8%	4.1%	**2.8%**
Furniture, small appliances	0.6%	0.9%	1.1%	1.2%	2.0%	**1.4%**
Other	1.3%	1.1%	1.4%	1.7%	2.4%	**1.8%**

Table 4 Consumption increase between quintiles, Barbados 2016

	Q1 to Q2	Q2 to Q3	Q3 to Q4	Q4 to Q5	Q5/Q1
TOTAL	**85%**	**35%**	**34%**	**72%**	**5.7**
FOOD	89%	27%	26%	48%	4.5
NON-FOOD	83%	40%	39%	87%	6.7
House	54%	26%	42%	80%	5.0
Housing services	80%	36%	19%	45%	4.2
Health	124%	109%	31%	159%	15.9
Education	68%	17%	26%	53%	3.8
Clothing and shoes	97%	30%	47%	105%	7.7
Communication & Transport	168%	47%	53%	78%	10.7
Personal Expenditures	88%	44%	23%	50%	5.0
Entertainment	188%	32%	151%	150%	23.9
Furniture, small appliances	154%	71%	40%	187%	17.4
Other	47%	77%	65%	142%	10.4

POVERTY AND HOUSEHOLD SIZE BY GROUPS

Table 5 FGT for extreme and all poor, Barbados 2016

Indicator	Households	Persons
p0 P0 Headcount rate: all poor	17.2%	25.7%
P1 P1 Poverty gap index: all poor	0.056	0.087
p2 P2 Poverty gap squared: all poor	0.030	0.047
p0_ext P0 Headcount rate: extreme poor	3.4%	4.9%
p1_ext P1 Poverty gap index: extreme poor	0.017	0.025
p2_ext P2 Poverty gap squared: extreme poor	0.011	0.017

Table 6 Household size by quintile and poverty, Barbados 2016

	# members
Q1	4.0
Q2	3.3
Q3	2.7
Q4	2.3
Q5	1.7
Extreme poor	3.7
All poor	3.8
Non-Poor	2.3
Average	2.6