```
. use "C:\Users\lutib\Dropbox\PEP_distance_Poverty Course (Exercises)\2019\weeks_semaines 7-8-9\ver
> sion\data_b3_3.dta",clear

. do "C:\Users\lutib\AppData\Local\Temp\STD36fc_000000.tmp"

.
. // EXERCICE 1
.
. // Q1
. /* Use the non parametric regression approach to predict the perceveid minimum well-being */
. use data_b3_3.dta, replace

. cnpe ae_exp  min_ae_exp, xvar(ae_exp) min(0) max(60000)     hs(hsize)       ///
> legend(order( 1 "Perceived  minimum  well-being " 2 "Observed well-being"))  ///
> subtitle("") title(The subjective poverty line)
>     ///
>  xtitle(Observed well-being)
>             ///
>  ytitle(Predicted level of the perceived  minimum  well-being )              ///
>  vgen(yes)
WAIT: Estimation of in progress: ==>>
: . : . : . : . : . 10%
: . : . : . : . : . 20%
: . : . : . : . : . 30%
: . : . : . : . : . 40%
: . : . : . : . : . 50%
: . : . : . : . : . 60%
: . : . : . : . : . 70%
: . : . : . : . : . 80%
: . : . : . : . : . 90%
: . : . : . : . : . 100%
<== END
WAIT: Estimation of in progress: ==>>
: . : . : . : . : . 10%
: . : . : . : . : . 20%
: . : . : . : . : . 30%
: . : . : . : . : . 40%
: . : . : . : . : . 50%
: . : . : . : . : . 60%
: . : . : . : . : . 70%
: . : . : . : . : . 80%
: . : . : . : . : . 90%
: . : . : . : . : . 100%
<== END

.
. /* Estimate the level of ae_exp where the difference between the predicted minimum well-being
> and the observed well-being is nil */
. cap drop dif

. gen dif = _npe_min_ae_exp- ae_exp
```

```
. cnpe ae_exp, hs(hsize) xvar(dif) xval(0) vgen(yes)
In progress ...
   Household size     :  hsize
   Sampling weight    :  sweight
```

Variable(s)	Estimated value
ae_exp	**22828.025391**

```
.
. /*Show the subjective poverty line  */
. cnpe ae_exp  min_ae_exp, xvar(ae_exp) min(0) max(60000)    hs(hsize)        ///
> legend(order( 1 "Perceived  minimum  well-being " 2 "Observed well-being"))  ///
> subtitle("") title(The subjective poverty line)
>     ///
> xline(22828.025391) xtitle(Observed well-being)
>     ///
> ytitle(Predicted level of the perceived  minimum  well-being )

.
.
.
. //  Q2:
.
. ifgt  ae_exp, alpha(1) hsize(hsize) pline( 22828.025)

    Poverty index   :  FGT index
    Household size  :  hsize
    Sampling weight :  sweight
    Parameter alpha :  1.00
```

Variable	Estimate	STE	LB	UB	Pov. line
ae_exp	**0.144024**	**0.015000**	**0.114582**	**0.173467**	22828.03

```
. ifgt  ae_exp, alpha(1) hsize(hsize) pline(20900)

    Poverty index   :  FGT index
    Household size  :  hsize
    Sampling weight :  sweight
    Parameter alpha :  1.00
```

Variable	Estimate	STE	LB	UB	Pov. line
ae_exp	**0.120934**	**0.014569**	**0.092337**	**0.149532**	20900.00

```
. ifgt  ae_exp, alpha(1) hsize(hsize) opl(mean) prop(50)

    Poverty index   :  FGT index
    Household size  :  hsize
    Sampling weight :  sweight
    Parameter alpha :  1.00
```

Variable	Estimate	STE	LB	UB	Pov. line
ae_exp	**0.077279**	**0.011093**	**0.055506**	**0.099052**	16991.00

```
.
.
. //  Q3:
. /*
> The use of the relative poverty line is more appropriate for the developed countries.
> This can be justified by the rapid increase in well-being in average and the standard of livings
> over time.
> */
.
.
.
. // EXERCICE 2
.
.
. // Q1
.
end of do-file

. use "C:\Users\lutib\Dropbox\PEP_distance_Poverty Course (Exercises)\2019\weeks_semaines 7-8-9\ver
> sion\data_b3_3.dta",clear

. do "C:\Users\lutib\AppData\Local\Temp\STD36fc_000000.tmp"

. dfgtg ae_exp, hgroup(sex) hsize(hsize) alpha(0) pline(20900)

    Decomposition of the FGT index by groups
    Poverty index   :  FGT index
    Household size  :  hsize
    Sampling weight :  sweight
    Group variable  :  sex
    Parameter alpha :  0.00
```

Group	FGT index	Population share	Absolute contribution	Relative contribution
Male	**0.336161**	**0.754545**	**0.253648**	**0.694339**
	0.019070	0.020842	0.015560	0.047359
Female	**0.454912**	**0.245455**	**0.111661**	**0.305661**
	0.058320	0.020842	0.022011	0.047359
Population	**0.365309**	**1.000000**	**0.365309**	**1.000000**
	0.022878	0.000000	0.022878	0.000000

```
. /*
> We can conclude that the poverty within the female-headed households is more pronounced.
> However, their relative and absolute contribution to the total poverty is lower than man-headed h
> ouseholds.
> This is because of the much lower population share of female-headed households in the total popul
> ation.
> */
.
```

```
.
. //  Q3:
. ifgt ae_exp, hgroup(region) hsize(hsize) alpha(0) pline(20900)

    Poverty index   :  FGT index
    Household size  :  hsize
    Sampling weight :  sweight
    Group variable  :  region
    Parameter alpha :  0.00
```

Group	Estimate	STE	LB	UB	Pov. line
1: central	**0.224916**	**0.027233**	**0.171462**	**0.278371**	20900.
2: eastern	**0.307212**	**0.026473**	**0.255249**	**0.359174**	20900.
3: northern	**0.721940**	**0.046327**	**0.631009**	**0.812872**	20900.
4: western	**0.266609**	**0.034500**	**0.198891**	**0.334328**	20900.
Population	0.365309	0.022878	0.320402	0.410215	20900.

```
.
.
. //  Q3:
. gen     ae_exp2=ae_exp

. replace ae_exp2=ae_exp2*(1+0.11) if region==3
(509 real changes made)

. replace ae_exp2=ae_exp2*(1-0.06) if region==2
(838 real changes made)

.
.
. //  Q4:
. dfgtgr ae_exp ae_exp2, alpha(1) pline(20900) hsize1(hsize) hsize2(hsize)

   Decomposition of the variation in the FGT index into growth and redistribution.
   Parameter alpha :         1.00
   Poverty line    :     20900.00
```

	Estimate	STE	LB	UB
Distribution_1	**0.120934**	**0.014569**	**0.092337**	**0.149532**
Distribution_2	**0.116279**	**0.013606**	**0.089572**	**0.142985**
Difference: (d2-d1)	-0.004656	0.001318	-0.007242	-0.002069
	Datt & Ravallion approach: reference period t1			
Growth	0.000714	0.000378	-0.000027	0.001455
Redistribution	-0.005402	0.001134	-0.007629	-0.003176
Residue	0.000033	---	---	---
	Datt & Ravallion approach: reference period t2			
Growth	0.000746	0.000393	-0.000024	0.001517
Redistribution	-0.005370	0.001137	-0.007601	-0.003138
Residue	-0.000033	---	---	---
	Shapley approach			
Growth	0.000730	0.007617	-0.014220	0.015680
Redistribution	-0.005386	0.001136	-0.007615	-0.003157

```
.
. //  Q5:
. dfgtg2d ae_exp ae_exp2, alpha(1) hgroup(region) pline(20900) hsize1(hsize) hsize2(hsize) ref(0)

    Decomposition of the FGT index by groups
    Group variable  :  region
    Parameter alpha :  1.00

    Population shares and FGT indices
```

Group	Initial Pop. share	Initial FGT index	Final Pop. share	Final FGT index	Difference in FGT index
central	**0.268071**	**0.053819**	**0.268071**	**0.053819**	**0.000000**
	0.016345	0.009016	0.016345	0.009016	0.000000
eastern	**0.266545**	**0.080410**	**0.266545**	**0.096069**	**0.015659**
	0.015916	0.007902	0.015916	0.008681	0.001258
northern	**0.217543**	**0.321715**	**0.217543**	**0.281127**	**-0.040588**
	0.024678	0.041079	0.024678	0.040778	0.002256
western	**0.247841**	**0.060875**	**0.247841**	**0.060875**	**0.000000**
	0.015462	0.009835	0.015462	0.009835	0.000000
Population	**1.000000**	**0.120934**	**1.000000**	**0.116279**	**-0.004656**
	0.000000	0.014569	0.000000	0.013606	0.001318

```
    Decomposition components
```

Group	Poverty Component	Population Component	Interaction Component
central	**0.000000**	**0.000000**	**0.000000**
	0.000000	0.000000	0.000000
eastern	**0.004174**	**0.000000**	**0.000000**
	0.000422	0.000000	0.000000
northern	**-0.008830**	**0.000000**	**0.000000**
	0.001135	0.000000	0.000000
western	**0.000000**	**0.000000**	**0.000000**
	0.000000	0.000000	0.000000
Population	**-0.004656**	**0.000000**	**0.000000**
	===	===	===

```
.
.
.
. // EXERCICE 3
.
.
. //  Q1:
```

```
. clear

. input identifier        weight  inc_t1  inc_t2

     identif~r     weight     inc_t1     inc_t2
  1. 0       0       0.00    0.00
  2. 1       0.1     1.50    1.54
  3. 2       0.1     4.50    3.85
  4. 3       0.1     7.50    6.60
  5. 4       0.1     3.00    2.75
  6. 5       0.1     4.50    4.40
  7. 6       0.1     9.00    7.70
  8. 7       0.1     10.50   8.80
  9. 8       0.1     15.00   7.70
 10. 9       0.1     12.00   6.60
 11. 10      0.1     13.50   6.60
 12.
. end

.
. sort inc_t1

. gen perc=sum(weight)

.
. //  Q2:
. qui sum inc_t1 [aw=weight]

. scalar mean1=r(mean)

. qui sum inc_t2 [aw=weight]

. scalar mean2=r(mean)

. scalar g_mean = (mean2-mean1)/mean1

. gen g_mean  = (mean2-mean1)/mean1

. dis "Mean 1              =" mean1
Mean 1              =8.1

. dis "Mean 2             = " mean2
Mean 2             = 5.6539999

. dis "Growth in averages = " g_mean
Growth in averages = -.30197531

.
. //  Q3:
. gen g_inc =(inc_t2-inc_t1)/inc_t1
(1 missing value generated)
```

```
. replace g_inc = 0 in 1
(1 real change made)

.
. //  Q4:
. line g_inc g_mean perc, title(Growth Incidence Curve) yline(`g_mean') ///
> legend(order( 1 "GIC curve" 2 "Growth in average income")) ///
> xtitle(Percentiles (p)) ytitle(Growth in incomes)  ///
> plotregion(margin(zero))

.
.
. //  Q5:
. drop in 1
(1 observation deleted)

. cap drop temp

. gen temp = g_inc

. sum temp [aw=weight] if (inc_t1<10.4)
```

Variable	Obs	Weight	Mean	Std. Dev.	Min	Max
temp	**6**	**.600000009**	**-.0812963**	**.0701759**	**-.1444445**	**.0266666**

```
. dis = r(mean)
-.08129631

. ipropoor inc_t1 inc_t2, pline(10.4)
   Poverty line    :        10.40
   Parameter alpha :         0.00
```

Pro-poor indices	Estimate	STE	LB	UB
Growth rate(g)	**-0.301975**	**0.068365**	**-0.456627**	**-0.14732**
Ravallion & Chen (2003) index	**-0.081296**	**0.027568**	**-0.143659**	**-0.01893**
Ravallion & Chen (2003) - g	**0.220679**	**0.075578**	**0.049710**	**0.39164**
Kakwani & Pernia (2000) index	**1.333333**	**0.418947**	**0.385609**	**2.28105**
PEGR index	**-0.402634**	**0.181351**	**-0.812877**	**0.00761**
PEGR - g	**-0.100658**	**0.136631**	**-0.409739**	**0.20842**

```
.
.
. //  Q6:
. dfgtgr inc_t1 inc_t2, alpha(1) pline(10.4)

   Decomposition of the variation in the FGT index into growth and redistribution.
   Parameter alpha :         1.00
   Poverty line    :        10.40
```

	Estimate	STE	LB	UB
Distribution_1	**0.311538**	**0.105810**	**0.072180**	**0.550897**
Distribution_2	**0.456346**	**0.072481**	**0.292383**	**0.620309**
Difference: (d2-d1)	0.144808	0.044233	0.044745	0.244871
	Datt & Ravallion approach: reference period t1			

Growth	0.145484	0.036725	0.062407	0.228562
Redistribution	-0.057026	0.026851	-0.117767	0.003714
Residue	0.056350	---	---	---
	Datt & Ravallion approach: reference period t2			
Growth	0.201834	0.059022	0.068318	0.335350
Redistribution	-0.000677	0.009501	-0.022169	0.020816
Residue	-0.056350	---	---	---
	Shapley approach			
Growth	0.173659	0.046125	0.069318	0.278001
Redistribution	-0.028851	0.010816	-0.053318	-0.004385

.
end of do-file

.