
Project 8: Calculate standard errors

Project 8

What if you want to develop a standard error for the weighted healthcare expenditure created in project 6? We can use the replicate weights on the FMLI file to create these variances.

In this project you will:

- ▶ Learn what variables are needed to develop a standard error
- ▶ Learn how to correctly calculate a variance.

Note

- To compute actual standard errors, use all 44 replicate weights (WTREP01-WTREP44) and FINLWT21.

- This exercise will only use three of the replicate weights.

Project 8 Steps

1. Concatenate 4 quarterly FMLI files to obtain collection year of data
2. Merge in the employment status using the MEMI files from Project 2
3. Multiply quarterly health expenditures by WTREP01-WTREP03 and FINLWT21 to obtain weighted aggregates
4. Create population weights by dividing FINLWT21 by the number of quarters in our sample (4)
5. Sum the weighted estimates and the population weights by each group
6. Means: Calculate annual means by dividing the aggregates by the populations
7. Create a new variable that sums the squared difference between each of the replicate means and the actual mean:
8. $DIFF_TOTAL = (((MEAN1 - MEAN)**2) + ((MEAN2 - MEAN)**2) + ((MEAN3 - MEAN)**2))$
9. Create a new variable by dividing DIFF_TOTAL by 3 and then squaring the result

$$SE = (SQRT(1/3 * DIFF_TOTAL))$$

NOTE: "THE '3' IS THE NUMBER OF REPLICATE WEIGHTS USED. IN THIS EXAMPLE, THE NUMBER IS 3, BUT WHEN ALL WEIGHTS ARE USED, IT IS 44

Project 8 Results

Mean and standard error by
employment status

	mean	se
"NOT SELF-EMP"	"3174.03379298169"	"36.8650039838278"
"SELF-EMP HH"	"4816.20378231347"	"390.989667649674"
"SEMI SELF-EMP HH"	"5056.37076581463"	"218.429851491881"

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