Assignment 2

1. In an assignment used on another course, we used the Swedish Level of Living Survey and Blinder-Oaxaca method to decompose the wage differentials between males and females in 1968 and 1991. Only 60 percent of the females in 1968 participated in the labor force, therefore, for this group we used the Heckman method to correct for sample using the variable "having children aged below 16" for identification. For the other groups we ignored selection, since more than 90 percent in each group was in the labor force.

We got the following results:

	$\overline{\mathbf{y}}_M - \overline{\mathbf{y}}_K$	$\left(\widehat{\phi}_K \overline{\lambda}_K - \widehat{\phi}_M \overline{\lambda}_M\right)$	$\left(\overline{\mathbf{X}}_M - \overline{\mathbf{X}}_K\right) \widehat{\boldsymbol{\beta}}_M$	$\left(\widehat{\boldsymbol{\beta}}_M - \widehat{\boldsymbol{\beta}}_K\right) \overline{\mathbf{X}}_K$
1991	0.1925	0	0.0278	0.1646
Shares	1		0.145	0.855
1968	0.2161	0.1473	0.0534	0.3091
Shares	0.595	0.405	0.147	0.853

In case you do not know/have forgot about the Blinder-Oaxaca decomposition, here is a brief description:

Blinder-Oaxaca decomposition has been used in numerous on discrimination on the labor market. It allows for decomposing the wage differential in differences due to observable characteristics, such as human capital variables, and one part due to unobservable characteristics. In the assignment we study wage differentials between men and women on the Swedish labor market. We depart from two wage equations for males and females, respectively, i.e.,

$$\begin{aligned} \mathbf{y}_K &= \mathbf{X}_K \boldsymbol{\beta}_K + \boldsymbol{\varepsilon}_K \\ \mathbf{y}_M &= \mathbf{X}_M \boldsymbol{\beta}_M + \boldsymbol{\varepsilon}_M. \end{aligned}$$

If we depart from the estimated equations, we have

$$\overline{\mathbf{y}}_K = \overline{\mathbf{X}}_K \widehat{\boldsymbol{\beta}}_K + \overline{\mathbf{e}}_K = \overline{\mathbf{X}}_K \widehat{\boldsymbol{\beta}}_K.$$

$$\overline{\mathbf{y}}_M = \overline{\mathbf{X}}_M \widehat{\boldsymbol{\beta}}_M = \overline{\mathbf{X}}_M \widehat{\boldsymbol{\beta}}_M - \overline{\mathbf{X}}_K \widehat{\boldsymbol{\beta}}_M + \overline{\mathbf{X}}_K \widehat{\boldsymbol{\beta}}_M.$$

$$\begin{aligned} \overline{\mathbf{y}}_M - \overline{\mathbf{y}}_K &= \overline{\mathbf{X}}_M \widehat{\boldsymbol{\beta}}_M - \overline{\mathbf{X}}_K \widehat{\boldsymbol{\beta}}_M + \overline{\mathbf{X}}_K \widehat{\boldsymbol{\beta}}_M - \overline{\mathbf{X}}_K \widehat{\boldsymbol{\beta}}_K \\ &= \left(\overline{\mathbf{X}}_M - \overline{\mathbf{X}}_K\right) \widehat{\boldsymbol{\beta}}_M + \left(\widehat{\boldsymbol{\beta}}_M - \widehat{\boldsymbol{\beta}}_K\right) \overline{\mathbf{X}}_K. \end{aligned}$$

The first component on the right hand side corresponds to the part of the average wage differentials that are due to observable characteristics.

If we break out the component for selection correction we get:

$$\overline{\mathbf{y}}_M - \overline{\mathbf{y}}_K + \left(\widehat{\phi}_K \overline{\lambda}_K - \widehat{\phi}_M \overline{\lambda}_M\right) = \left(\overline{\mathbf{X}}_M - \overline{\mathbf{X}}_K\right) \widehat{\boldsymbol{\beta}}_M + \left(\widehat{\boldsymbol{\beta}}_M - \widehat{\boldsymbol{\beta}}_K\right) \overline{\mathbf{X}}_K.$$

Criticize the method chosen for the analysis above and suggest an alternative approach to account for selection.

2. Write a referee report on "Unemployment Insurance in Europe: Unemployment Duration and Subsequent Employment Stability". The paper can be downloaded on the course homepage.