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Reading Note: Mulligan and Rubinstein (2008), "*Selection, Investment and Women's Relative Wages over Time*"

Introduction and Motivation

In 20 years period, gender wage gaps were decreasing with women's wages increased as much as 0.2 log points relative to men's, meanwhile, wage inequality within gender also rose. This paper attempted to test whether such phenomenon can be explained by selection and investment of female workers. The authors examined a supply aspect of labor market, that is; they inspected the growth and composition of female's labor supply through selection bias.

Methodology

The paper employs Gronau-Heckman-Roy (GHR) model which is a probabilistic model for labor participation decision to construct the structure for selection bias estimation. The two-step estimation method derived from GHR comprises of: first step – estimate the inverse Mills ratio from probabilistic regression (dependent variable:employment, sometimes called selection ratio, independent variables: demographic characteristics) where Mills ratio represents net return on working, and second step – use the Mills ratio estimated in the first step as an independent variable in estimating wage linear regression equation along with demographic characteristics. Selection bias can be estimated from difference between wage gap from the two-step and OLS (doing only the second step without including the Mills ratio) estimation. With measurement concerns from the fact that the data is not panel, characteristic variables are different across time, apart from fixed weight methods, the paper also introduced Identification at Infinity Method. The method, deriving from different assumptions, only included the individuals who have predicted employment probability closed to 1 to check for robustness of the results yielded from the two-step estimation.

Findings and Re-interpretation

The paper has identified that the narrowing gender wage gap can be explained by change in selection rule. By controlling for selection rule using two-step method which is considered to be the main contribution of this paper, the ratio of female wage over male wage did not increase which suggests that the selection rule had changed. During the time period, more capable female worker who had high predicted employment rate entered (selected herself) into labor market and earned relatively high wages. This resulted in changes in female labor supply composition and, thus wage inequality within gender increased. Investment enters picture here: selection rule does not only affect labor supply but also affects decision to invest in human capital (e.g. education) for women. With change in selection rule, women generally invested more in herself (e.g. attaining higher level in education), and therefore enters the labor market gaining relatively high wages.