1   Introduction

Starting from observing the narrowing gender gap, this paper studied the women's relative wage growth by considering the relationship between selectivity and investment biases in female workforce participation. Also, this paper emphasized that the female wage growth was accompanied by the growing wage inequality within-gender. In particular, the selection bias from not observing those non-working women was identified as a potential explaining factor of the relative wage growth for women.

2   Overview

The paper started by explaining the effects of selectivity and investment. First, the selectivity problem was based on the argument of the Roy model stating that a person would only choose to work when the market wage was high enough. Applying the control function methodology, this paper employed the Heckman two-stage regression to address the effect of unobserved selection and estimated earnings potential for women. Second, the investment problem was meant to account for the intuition that female workers might invest more in human capital than before (1970's) when labor markets favored labor with more human capital.

Next, this paper described the intuition, data, and variables as follows. With the increasing trend of higher female labor participation rate, a specific group -married women with advanced degrees, was illustrated because first, this group did work less in the '70s. Second, this group tended to have stable participation in the labor markets, so they were expected to contribute less to the narrowing wage gap between men and women. Married women with advanced degrees should also be less selected into the wage observations when the female labor force participation rates increased and became more stable. Based on the intuition, this paper tried to compare the relative importance of selection versus investment biases by focusing on women with advanced education. With the comprehensive dataset of PSID, NLS, and NLSY, Family and cognitive backgrounds were identified and this paper concluded that the narrowing gender wage gap may be the consequence of selection bias, especially when the estimated average woman's earnings potential was still lower than the average man's earnings.

After laying out the foundation, this paper used the following methods to estimate the models. First, by using the control function for selection, this paper estimated the potential wages for women when there were selection (Heckman model), investment, and growing wage inequality affecting the potential wages. In particular, the coefficient of the selection component was embedded in this equation to identify the correlation between wages and work status. In this section, the identification at infinity (repeated cross-section) strategy was applied to estimate the potential wage. To estimate the potential wages with the control function in the first model, the CPS data from 1975 to 2001 was estimated for repeated cross-sections. By interpreting

the inverse Mill's ratio, this paper showed that the selection bias changed signs and became positive (more significant) starting from the 1980s. In the paper, they mentioned the possible problems when control functions were implemented. However, the paper also addressed the specifications of functional forms by measuring the sensitivity of the alternative ones to enhance the robustness of the estimation.

Second, to include the theoretical foundation by Gronau (1974), Heckman (1974), and Roy (1951), a background variable was included because of the reservation wage selection effect. By adding a background indicator, this paper could compare the relative importance between selection and investment biases by using the extended Roy model. For the second methodology, some family background variables from the PSID sample such as the mother's education were included. By conditioning on certain backgrounds, this paper also showed that there was a fundamental difference between women working in the 1970s and women working in the 1980s. Their findings suggested that women in the 1970's tended to have better backgrounds and therefore reasoned that a certain proportion of the relative female wage growth was related to the selection bias, not just the investment bias when the labor market situation changed to favor high capital workers.

3   Conclusion

In conclusion, this paper investigated the essence of the seemingly narrowing wage gap between men and women. By including the potential investment and selection bias, this paper concluded that the selection bias (the underlying determinants of the female labor force) turned from negative to positive over time, and thus may explain a proportion of the observed closing gender gap.