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Bargaining, Sorting, and the Gender Wage Gap: Quantifying the Impact of Firms on the Relative Pay of Women (Card, Cardoso, & Kline, 2015)

There are many evidences that show gender wage gap in almost every countries in the world, and many literatures found that these gap cannot be explained solely by different productivity. Even when controlling for productivity, men and women face different job prospect and wage bargaining power. One key driver of such gender disparity is firm specific pay policies. There are two effects at play. First is sorting; women are less likely to be employed in the higher paid firms. Another is bargaining; women has less bargaining power for wage and ends up having smaller share of the surplus. Hence, this study will contribute to the body of literature by being the first study that distinguish and quantify these 2 effects.

This paper matched Portuguese employee data come from Quadros de Pessoal (QP) which is a compulsory census data of private sector employees, and firms' financial data from SABI[1]. The matched data consists of around 53 percent of firms between the year 2002 to 2009. The paper also checked for the distribution for the rate and job mobility and found that men and women have similar rate, so it should not be a large fator explaining between-firm wage differentials.

The paper use two-way fixed effect model in the form:

$$w_{it} = \alpha_i + \Psi_{J(i,t)}^{G(i)} + X_{it}'\beta^{G(i)} + r_{it}$$

Where i denote individual, j denote firm, t denote time period and G denote gender. w_{it} is wage earned by individual I at time t. α_i time invariant characteristic of individual i. $\Psi_{J(i,t)}^{G(i)}$ is gender-specific share of surplus that individual i received from time-invariant factor of firm j that raise average surplus of all its employees; in other words, average pay premium each gender received. X_{it} is observed time-varying characteristics. r_{it} is a composite error[2].

[1] Sistema da Analisis de Balances Ibericos

[2] Consists of the product of (gender-specific share of surplus) * (time-varying facors that affect firm j average surplus + person specific component of surpluc between inidividual I and firm j)

Average pay premium, $\Psi_{J(i,t)}^{G(i)}$, is then decomposed into sorting and bargaining effects via 3 different methods[3] whose result turns out to be similar and all support the validity of the specification.

Exogeneity is tested and found not to be a problem. However, identification issue is still a problem as this type of medel require "connected" firms linked by labor movement. The study then normalized the firm effect by setting the average wage premium for a set of low-surplus firms to zero which is around 9% of the data used, and also crosschecked this with another case that set average wage premium all firms in hotel&restaurant (a known low-surplus industry) to zero.

The data shows that women get only around 90% of the wage premium compared to men, and women are also more likely work at firms that pay lower premium. These generate gender wage gap. The study found that approximately 15 percent of the gap can be attributed to sorting effect and another 5 percent to bargaining effects. The sorting effect is stronger as the workers get older and is more important for less educated workers. In contrast, bargaining effect is larger for workers with high education. These findings are broadly robust to the change in normalization and decomposition techniques.

[3] 1) Decompose the difference in pay premium into average bargaing power effect and average sorting efftct
2) Examine how estimated wage premiums of a firm vary with the measured surplus per worker
3) Looking at within-firm changes in wages and measured surplus overtime