Service Industry Liberalization and Gender Wage Gap

Yu-ting WANG\textsuperscript{1,a,*}

\textsuperscript{1}Shanghai University, China
\textsuperscript{a}Oneno@shu.edu.cn
*Corresponding author

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Abstract. From a gender perspective, this paper uses the 2015 China Household Finance Survey (CHFS) data to examine the impact of service sector liberalization on the gender wage gap. The empirical results show that: first, in terms of the overall gender wage, the opening of the service industry has a certain impact on gender wages. Specifically, the service industry exports widen the gender wage gap, but the effect of service industry imports on its impact is not clear. Foreign direct investment in services not only raises the overall gender wage, but also narrows the gender wage gap; second, for workers with different skills, high-skilled women suffer less from the trade in services than low-skilled women, can benefit more from foreign direct investment, and have a smaller gender wage gap in the high-skilled workforce. Therefore, based on the above, this paper puts forward that China should weigh the advantages and disadvantages according to the actual situation, strengthen the guidance and management of service trade and continue to increase investment, and give full play to the important role of foreign direct investment in the service industry in raising labor income and narrowing the gender wage gap. It also increases women's educational opportunities and reduce the gender wage gap.

Introduction

Global liberalization brings the change of the labor market makes some economists turned its research Angle of view to open and gender wage gap in this field. According to H-O theory, many scholars discussed the influence of liberalization on gender wage gap from the perspective of comparative advantage, believing that openness is conducive to narrowing gender wage gap [1]. Yet there is also a theory that liberalization has widened the gender wage gap. Neoclassicism argues that the intensification of competition brought by liberalization will promote the formation of monopolies and industrial agglomeration [2], leading to the intensification of gender discrimination and thus the widening of gender wage gap [3].

The empirical study on the impact of liberalization on gender wage gap has not reached a consistent conclusion. Autor et al. show that increased competition in China led to the decline of labor wages in the United States and the widening of the gender wage gap [4]. Chen et al. found that in China's manufacturing sector, compared with domestic non-export enterprises, export and foreign-funded enterprises tend to pay higher wages to female employees [5].

According to the existing literature on the study of the gender wage gap under the open conditions, scholars have not reached a unified conclusion on this issue in both theoretical and empirical research, and most of them have taken the whole economy, industry or manufacturing as the research object, but the related research on service industry is relatively rare.

In recent years, with the deep development of economic globalization, the degree and scope of opening up to the outside world has been increasing, and the open sector has gradually expanded from traditional manufacturing to service. The total value of imports and exports of services and FDI increased from US $133.7 billion and US $14.05 billion in 2004 to US $695.7 billion and US
$89.01 billion in 2017, an increase of at least five times in more than a decade. At the same time, with the increasing opening of the service industry, the service industry has gradually become the main channel to absorb the employment of labor force. However, the opening of service industry not only brings employment opportunities and competition mechanism, but also has more and more influence on the allocation of labor market elements in China. One of its important manifestations is the change in the distribution of wages among different social groups, including gender-specific labor. It has also been proved that there is obvious sex discrimination in employment in China's service industry [6].

There was a significant positive correlation between the reduction of gender discrimination and socio-economic development [7]. With the increase of employment opportunities and the improvement of education level, women's families invest more in their children's human capital, thus contributing to the long-term economic development [8]. In terms of theoretical significance, studies on gender discrimination are mainly based on Becker's model, which assumes that men and women have the same productivity in the production process, which is more applicable in the service industry with lower physical demands, because there are more white-collar workers in the service industry [9]. So studying the effect of service sectors for the gender pay gap is not only for our country to promote equality between men and women in employment, in the context of globalization has an important practical significance to construct the harmonious labor relations, but also on China's trade in services, the introduction of foreign investment strategy has the important enlightenment function.

Based on the above background, this paper chooses the perspective of the service industry and uses the data of the 2015 China Household Finance Survey (CHFS) to try to investigate how the liberalization of the service industry affects the gender wage gap, and proposes policy Suggestions on how to improve the gender wage gap in the service industry under the background of the liberalization of the service industry.

**Empirical Model, Date and Results**

**Empirical Model**

Based on Mincer [10] classic individual labor income equation, and draw lessons from Hering and Poncet [11] study of macroeconomic variables affect wage solution, build individual wage econometric model as follows:

$$\ln wage_{i,j} = \beta_0 + \beta_1 \ln EX_j + \beta_2 \ln IM_j + \beta_3 \ln FDI_j + \beta_4 X_{i,j} + \mu_{i,j}$$

where i indexes firms, j industry; wage$_{i,j}$ is the hour wage of the individual i in industry j; EX$_j$ is the export oriented rate for each industry; IM$_j$ is the import penetration rate; FDI$_j$ is the foreign capital dependence; X$_{i,j}$ is the microcontrol variables, including age age$_{i,j}$, educated age edu$_{i,j}$ (college and above are high-skills and below are low-skills), work experience exp$_{i,j}$, whether party member par$_{i,j}$ (party member 1, non-party member 0), marriage mar$_{i,j}$ (married 1, unmarried 0); $\mu_{i,j}$ denotes error term.

**Date**

In this paper, the explanatory variable to measure the openness of the service industry is the...
export-oriented rate \( EX \), which is divided by the value added of the industry. Import permeability \( IM \), divided by the value added of the industry; The value of foreign capital dependency on FDI is the amount of foreign direct investment multiplied by the average exchange rate of the year divided by the added value of the industry. Among them, the import and export data of the industry come from the statistical database of WTO international trade, and the amount of foreign direct investment, the average exchange rate of the year and the added value of the industry come from the statistical yearbook of China. Other personal micro data came from the Chinese Household Finance Survey (CHFS).

**Result**

**The Impact of Service Sector Liberalization on Overall Gender Wages**

Table 1. The impact of service sector liberalization on overall gender wages.

| variable | woman (1) | man (1) | woman (2) | man (2) |
|----------|-----------|---------|-----------|---------|
| lnEX     | -0.0466*** | -0.0169 |           |         |
|          | (0.0144)   | (0.0153)|           |         |
| lnIM     | -0.00994   | -0.0230 |           |         |
|          | (0.0161)   | (0.0169)|           |         |
| lnFDI    | 0.0690***  | 0.0603*** |           |         |
|          | (0.00884)  | (0.00869)|           |         |
| age      | -0.0111*** | -0.0100*** | -0.00794*** | -0.00900*** |
|          | (0.00281)  | (0.00217)| (0.00282) | (0.00216) |
| edu      | 0.0925***  | 0.0815*** | 0.0807***  | 0.0761*** |
|          | (0.00616)  | (0.00542)| (0.00667) | (0.00581) |
| exp      | 0.0181***  | 0.0108*** | 0.0142***  | 0.0100*** |
|          | (0.00240)  | (0.00183)| (0.00241) | (0.00183) |
| par      | 0.0536     | -0.0189  | 0.135***   | 0.0568   |
|          | (0.0431)   | (0.0367) | (0.0440)   | (0.0384) |
| mar      | -0.0359    | 0.0999   | -0.0342    | 0.107*   |
|          | (0.0627)   | (0.0616) | (0.0618)   | (0.0612) |
| constant | 2.021***   | 2.187*** | 2.226***   | 2.403*** |
|          | (0.176)    | (0.145)  | (0.175)    | (0.147)  |

Province: Y

Observations: 2,509

R-squared: 0.256

Note: *significant at 10%, **significant at 5%, ***significant at 1%

Table 1 model (1) reports the OLS estimation results before the inclusion of service industry openness variables. After the introduction of openness in services into model (2), R-squared increased by about 2 percentage points. The estimated coefficient sizes and significance of other variables did not change much compared with model (1). It can be inferred that openness played a role in explaining the changes in wage levels.

By comparing the model (2) it can be seen that services exports has a significant negative effect on women's wages. For men, there is no significant negative impact on salary. And services import both for women and men have no significant negative effects, may be relatively limited service import in China, is difficult to impact on labor wages. However, FDI in the service industry has a significant positive effect on the wages of both sexes, with the female coefficient 0.069 greater than the male coefficient 0.0603, indicating that FDI has a greater pulling effect on women's wages than men's. To sum up, a preliminary conclusion can be drawn: service exports have widened the gender
wage gap, but the effect of service imports on it is not clear. FDI in the service sector not only increased overall gender wages but also narrowed the gender wage gap to some extent.

In addition, this study shows that age is negatively correlated with salary, which has a greater negative impact on men than women. Years of education and work experience at the level of 1% have a positive promotion effect on the wage increase of both sexes, and the greater the impact on women, indicating that the higher the education level, the richer the work experience, the more conducive to the wage increase of women. In reality, the average number of years of education for women is less than that for men. This conclusion gives us an important enlightenment: paying attention to women's education and increasing educational opportunities have important policy implications for improving women's economic and social status and alleviating gender inequality.

In terms of party members and marriage, there are significant differences in the impact of political outlook and marriage experience on the wages of both sexes. Compared with the results of the openness variable of the service industry, the status of party members has a significant effect on the promotion of women's wages, but it is not obvious to men's wages, and it may be that import and export enterprises and foreign enterprises may prefer party members and women. Party membership is often linked to individual competence, and the effect of that competence on women is more pronounced as a result, suggesting that women should pay more attention to empowerment. In addition, marriage has a significant positive effect on male wages, while marriage has no significant impact on female wages. This may be due to the fact that men bear the burden of the family mainly after marriage, choosing to work harder instead of leisure (such as working overtime), while women spend more time after marriage on housework and family care.

The Impact of Service Sector Liberalization on the Gender Wage Gap at Different Skill Levels

Table 2. The impact of service sector liberalization on different skills and genders.

| variable | High (woman) | High (man) | Low (woman) | Low (man) |
|----------|-------------|------------|-------------|-----------|
| lnEX     | -0.0325*    | -0.0167    | -0.0699***  | -0.0532*  |
|          | (0.0177)    | (0.0187)   | (0.0267)    | (0.0295)  |
| lnIM     | -0.0463*    | -0.0692*** | 0.0183      | 0.0232    |
|          | (0.0239)    | (0.0247)   | (0.0262)    | (0.0274)  |
| lnFDI    | 0.0877***   | 0.0678***  | 0.0452***   | 0.0700*** |
|          | (0.0124)    | (0.0124)   | (0.0139)    | (0.0133)  |
| age      | -0.00115    | 0.00414    | -0.0104***  | -0.0130***|
|          | (0.00464)   | (0.00370)  | (0.00400)   | (0.00285) |
| edu      | 0.0938***   | 0.0590***  | 0.0461***   | 0.0520*** |
|          | (0.0202)    | (0.0175)   | (0.0124)    | (0.0115)  |
| exp      | 0.00809**   | 0.00578*   | 0.0176***   | 0.00991***|
|          | (0.00411)   | (0.00329)  | (0.00333)   | (0.00233) |
| par      | 0.119**     | 0.00400    | 0.115       | 0.0911    |
|          | (0.0493)    | (0.0480)   | (0.103)     | (0.0634)  |
| mar      | 0.0880      | 0.0310     | -0.339***   | 0.130     |
|          | (0.0731)    | (0.0803)   | (0.115)     | (0.0934)  |
| constant | 1.778***    | 2.335***   | 2.784***    | 2.658***  |
|          | (0.372)     | (0.331)    | (0.275)     | (0.216)   |
| Province | Y           | Y          | Y           | Y         |
| Observations | 1,425 | 1,764    | 1,084       | 1,784     |
| R-squared   | 0.183 | 0.130    | 0.164       | 0.089     |

Note: *significant at 10%, **significant at 5%, ***significant at 1%
The influence of the open service industry on the gender wage gap is analyzed above, and the results show that different forms of openness have different effects on the gender wage gap. But is the impact on different groups of skilled women the same? The following will focus on the impact of openness to services on gender pay differentials under different skills.

Table 2 reports the regression results of the effects of service sector liberalization on the high- and low-skilled gender wage gap. It found that exports of services reduced women's wages by 10 percent for high-skilled labour, but had no significant effect on men. Low-skill labor wages are also affected by the negative influence of export, but the negative impact of the women were more than men, suggesting that both skilled or unskilled labor, services export have widened the gender pay gap, and women by the negative impact of high skills, that women improve skills level is helpful to reduce the negative effect from the export. Imports of services only drag down the wages of highly skilled workers, with men suffering significantly more than women, suggesting that service exports have narrowed the gender wage gap for highly skilled workers. Although FDI in the service sector raised the wage level of high-skilled and low-skilled labor, the difference coefficient (female-male) between the two was 0.0199 and -0.0248, respectively, indicating that FDI in the service sector narrowed the wage gap between high-skilled gender and widened the wage gap between low-skilled gender.

In summary, high-skilled women have less to lose from trade in services, more to gain from FDI, and have a smaller gender wage gap in high-skilled workers than low-skilled women.

Conclusion

When the development of global trade is gradually shifting to the service sector, the importance of opening up the service sector as a new force for China's economic growth is self-evident. With the great development of China's service industry, the gender wage gap has been affected to some extent. This paper uses the 2015 China Household Finance Survey (CHFS) data to examine the impact of service sector liberalization on the gender wage gap. The empirical results show that: first, in terms of the overall gender wage, export of service industry widens the gender wage gap, but the effect of import of service industry on it is not clear. FDI in the service sector not only increased the overall gender wage but also narrowed the gender wage gap to some extent. Second, highly skilled women have less to lose from trade in services, more to gain from foreign direct investment, and have a smaller gender wage gap in highly skilled workers than low-skilled women.

Based on the above conclusions, this paper puts forward the following policy recommendations:

First, it can be seen from the results that the import and export of the service industry have different effects on the gender wage gap in different income groups. The insignificant effect of the import of the service industry on the wage level of the overall labor force indicates that the scale of China's service import is limited. At the same time, imports and exports have also brought a negative impact on the wages of some groups. Therefore, how to measure the openness of the service sector and reduce the damage to the labor market is worth thinking about. China should weigh the advantages and disadvantages to guide and manage the service trade according to the actual situation.

Second, given that FDI in the service sector can not only significantly raise the wages of all workers, but also significantly reduce the gender wage gap, it has a significant effect on promoting
gender equality in the service sector labor market. We should seize the opportunity, the international service industry transfer in accordance with the planning of economic development in China, actively and steadily expand service sectors, give full play to the service industry foreign direct investment in improving the important effect of labor income, narrowing the gender pay gap.

Third, in real life, women account for a large proportion of low-skilled people. With the deepening of globalization, the competition in the whole society is more fierce, and the impact on low-skilled women will be more obvious. Trade liberalisation's preference for high-skilled Labour also requires higher levels of education for women. Therefore, the government should vigorously develop education and training to create conditions and environment for women to continue learning. At the same time, women should also take the initiative to increase educational opportunities to improve their education and skills, so as to increase their competitiveness and bargaining power in the workplace under the background of openness, and ensure their rights and interests.

References

[1] Oostendorp, R.H., “Globalization and the Gender Wage Gap”, The World Bank Economic Review. 2008: 141-161.

[2] Darity, William, “On Involuntary Unemployment and Increasing Returns”, Journal of Post Keynesian Economics. 1985: 363-372.

[3] Berik G, Rodgers Y and Zveglich J E, “International Trade and Gender Wage Discrimination: Evidence from East Asia”, Review of Development Economics. 2004

[4] Autor D, Dorn D, Hanson G H, “The China Syndrome: Local Labor Market Effects of Import Competition in the United States”, IZA Discussion Papers. 2013.

[5] Chen Z, Ge Y, Lai H, et al, “Globalization and Gender Wage Inequality in China”, World Development. 2013: 256-266.

[6] Cai Hongbo, Hu Xiangbin and Zhao Chunming, “Service Import and Gender Employment Inequality: Evidence from Chinese Enterprises in Services”, Economic Management. 2014: 24-30.

[7] Duflo, Esther, “Women Empowerment and Economic Development”, Journal of Economic Literature. 2012: 1051-1079.

[8] Bobonis G J, “Is the Allocation of Resources within the Household Efficient? New Evidence from a Randomized Experiment”, Journal of Political Economy. 2009: 453-503.

[9] Crino R, Epifani P, “Trade Imbalances, Export Structure and Wage Inequality”, Economic Journal. 2014:507-539.

[10] Mincer, J. Schooling, “Experience and Earning”, Columbia: Columbia University Press. 1974: 83-96.

[11] Hering L, Poncet S, “Market Access and Individual Wage: Evidence from China”, Review of Economic and Statistics. 2010: 145-159.