Gender Wage Gap and Discrimination in Developing Countries

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Abstract: This study constructs wage equations according to Mincer earnings function for men and women separately, and the equations are estimated by OLS and Heckman selection regression for eleven developing countries. Our results show that the wage equation estimates for five countries including Ukraine, Sri Lanka, Macedonia Lao and Yunnan, China have the selection bias. Comparing the estimates of female wage equations and male wage equations, we find that better education raise wages for women than men, and women who work as high skill white collar receive more benefits than female. In terms of gender wage gap analysis, we conduct the Blinder-Oaxaca decomposition for each of countries by the estimates of OLS regression and Heckman regressions. The results reveal a relatively high level of gender wage discrimination in Yunnan province, Macedonia, Sri Lanka and Ukraine. For most of countries, the unexplained wage gap contributes more to the total wage gap, comparing with the explained wage gap. However, this is no strong evidence to show that the wage discrimination is correlated with national economic development.

Key words: Gender wage gap, Discrimination, Developing countries.

JEL Code: J31, C36

Introduction

The gender wage gap has been intensively studied by researchers since the early 1990s. People try to explain why women were paid unequally. Some researchers suggest that the wage inequality is caused by labor market discrimination against women (Ahmed and Maitra, 2010), while others connect the gender wage gap with the significantly lower level of female human capital relative to men (Hossain and Tisdell, 2005). The objective of this study is to find the main reasons for gender wage differentials and the relationships between national economic development and gender wage gap with individual data from eleven developing countries.

Since each country has its specific economic development status, it might have different situations and reasons for the gender inequality, and gender inequality is neither constant over time nor across countries. Institutions change as a result of collective action, and the effects are observable on a number of measures such as gender wage differentials and employment rates, hours of paid and unpaid work, rates of unemployment, educational attainment, and other more concrete measures of well-being such as life expectancy rates and the ratio of women to men in the population (Seguino, 2000). For example, Colombia has kept more than 4% annual increase in GDP per capita since 2010, and the annual GDP per capita is $7,904 in 2014. However, around 30% of the population lives below the national poverty line, and only 12% of firms in Colombia have female top managers. In contrast, the economic growth rate of Ukraine is extremely low and even negative for many years, but the poverty ratio is less than 10 percentages (Figure 1). At the same time, the

percentage of firms with female top managers is greater than that of Colombia. In addition, Kenya has the highest level of poverty headcount ratio, but relatively less percentage of firms with female top manager. Therefore, in this study we are not only concerned about the impact of human capital and discrimination in gender wage differentials, but also the macro factors of the national economic development in the analysis.

To test the gender wage gap, we employ the Mincer earnings function and conduct Oaxaca-Blinder decomposition analyses for eleven developing countries. The selection bias of Mincer earnings function is corrected by Heckman selection model. Our results show that estimates of five countries including Ukraine, Sri Lanka, Macedonia Lao and Yunnan, China have the selection bias.

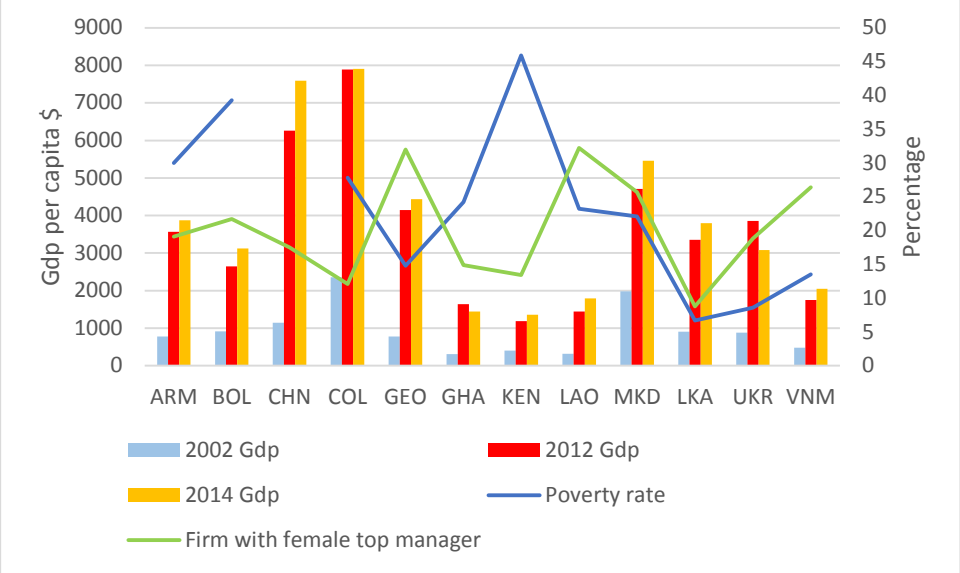

Figure 1 GDP per capita, poverty rate and firms with female top manager

The paper is organized as follows. Section 2 summaries the methodology of gender wage differential analysis. In Section 3, we describe the data sources and sample

selection used in our study. In Section 4, we estimate the wage equation and conduct the Blinder-Oaxaca decomposition analysis on the gender wage gap. Conclusion is given in section 5.

Methodology

Mincer earnings function

The wage equation is constructed according to Mincer earnings function (Mincer, 1958) as:

$$ln(wage) = \beta_0 + \beta_1 age + \beta_2 age^2 + \beta_3 educ_{year} + \beta_4 tenure + \beta X + \epsilon \quad (1)$$

Where wage is calculated by hourly earnings in us dollars, age is age of interviewees, $educ_{year}$ indicates the number of years of education, tenure represents the working experience of current job, and X contains control variables including marital status, additional technical or professional certificate and occupation types such as high skill white collar, low skill white collar and elementary operator. The logarithm of wage can reduce the effect of inflation. Meanwhile, there are also some workers might not be random subset of all the interviewees, but differ in terms of observables and unobservables from people who not work (Ahmed and McGillivray, 2015). Estimating the wage equations with OLS directly may cause a selection bias. To correct the selection bias, we also conduct Heckman (1979) selection model. In the first stage of Heckman model, it estimate the probability of participating a job (emp = 1) with instrumental variables including the number of children under 6 years old, health status and relationship with household head. The process is performed by

estimating the following equation, separately for male and women:

$$emp_{ij} = Z_{ij}\gamma_j + \varepsilon_{ij} \qquad (2)$$

Where i indicates the individual, and j indicates different genders. Z_{ij} represents the instrumental variables which can determine the choice of participating a job. In the second stage, the wage equation

$$ln(wage)_{ij} = X_{ij}\beta_j + \lambda_{ij}\rho_j + \varepsilon_{ij} \qquad (3)$$

is estimated with OLS method for both male and female interviewees, where X_{ij} represents the explanatory variables, and λ_{ij} indicates the unobservables in the first stage. If ρ_j is significantly different from zero, then the selection bias exists.

Blinder-Oaxaca decomposition

To analysis the potential causes of the gender wage differential, we conduct a Blinder-Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973) to separate the effect of gender discrimination from that of the explained observables. The gender wage gap (*D*) can be described by the equation:

$$D = \overline{lnwage}_m - \overline{lnwage}_f = \left(\bar{X}_m - \bar{X}_f\right)\hat{\beta}_m + \bar{X}_f\left(\hat{\beta}_m - \hat{\beta}_f\right) + \left(\bar{\lambda}_m\hat{\rho}_m - \bar{\lambda}_f\hat{\rho}_f\right) \quad (4)$$

where $\hat{\beta}_m$ and $\hat{\beta}_f$ are the estimated coefficients of male and female wage equations respectively. The item of $\left(\bar{X}_m - \bar{X}_f\right)\hat{\beta}_m$ indicates the explained element of the gender wage differentials. In the other words, this element of the wage gap is explained by differences in observed predictors of the wage equation at the mean, weighted by male wage coefficients ($\hat{\beta}_m$). While, the item of $\bar{X}_f\left(\hat{\beta}_m - \hat{\beta}_f\right)$ represents the unexplained reasons of the gender wage gap, which we commonly call

"Discrimination". For the last component $\left(\bar{\lambda}_m\hat{\rho}_m - \bar{\lambda}_f\hat{\rho}_f\right)$, it comes from differences in the average selection bias (Ahmed and McGillivray, 2015).

Data

Data resources

Data used for this analysis is collected from the STEP Skills Measurement Household Survey (World Bank, 2012 & 2013). This survey is processed in eleven developing countries including Armenia, Lao PDR, Sri Lanka, Kenya, Colombia, Georgia, Ghana, Macedonia, Vietnam, Ukraine and Yunnan province of China. The survey was organized in two waves (2012 and 2013). The first wave of survey include the countries: Lao PDR, Sri Lanka, Bolivia, Colombia, Yunnan of China, Vietnam and Ukraine. The second wave contains Armenia, Kenya, Georgia, Ghana and Macedonia.

The indicators of wage equations are measured by individuals. Except for the continuous variables, such as, age, years of education, years of tenure, number of children under 6 years old, we employ several dummy variables including whether the interviewee has spouse, whether the interviewee has additional professional certificates, whether the interviewee is the head of household, whether the interviewee has chronic illness and the types of current occupation (include high skill whiter collar, low skill whiter collar and elementary operator). Specifically, the education variable can be used for proxy of individual skills (Chzhen and Mumford, 2011), and the martial status (Albrecht et al, 2009), health status, number of young

children, household position, additional skills certificated and occupation types are also likely to influence both individual productivity directly and choices of work or not.

Sample statistics

The age of the individuals in our data sample ranged from 15 to 64. The sample selection is shown in table 1. The sample data is classified into two groups: wage employees and non-participants for each of countries. The total sample size is 29,641, in which 17,698 observations come from women, while 11943 observations come from men.

Table 1 Sample Selection

Country	Work Status	Female	Male	Total
Kenya	Wage employees	960	1275	2235
	Non-participants	985	492	1477
Yunnan, China	Wage employees	598	633	1231
	Non-participants	467	266	733
Armenia	Wage employees	609	370	979
	Non-participants	1502	442	1944
Colombia	Wage employees	829	818	1647
	Non-participants	646	233	879
Georgia	Wage employees	562	333	895
	Non-participants	1423	620	2043
Ghana	Wage employees	1094	890	1984
	Non-participants	498	307	805
Lao	Wage employees	950	699	1649
	Non-participants	308	113	421
Macedonia	Wage employees	735	891	1626
	Non-participants	1319	835	2154
Sri Lanka	Wage employees	532	829	1361
	Non-participants	1149	215	1364
Ukraine	Wage employees	641	391	1032
	Non-participants	771	307	1078
Vietnam	Wage employees	1232	930	2162

	Non-participants	659	361	1020
Total number		17698	11943	29641

Note: Non-participants indicate the individuals who do not work at all during the preceding week of survey.

The sample statistics are reported in table 2. The hourly wage is standardized with US dollars. We can find that people have the highest hourly wage for both female and male groups in Armenia. But it has a very high standard deviation, which means there are outliers in Armenia's survey sample. The average hourly wage is relatively low in Yunnan, China. Yunnan is one of the worst developed provinces of China.

Wage differentials

The gender wage gap is measured by the (log) hourly wage, which represents the wage ratio between male and female (Table 3). The wage differential is calculated by $(e^r - 1)$. It indicates the proportion of wage that male earns more than female. The results show that there are significant differences in average log hourly wage between male and female, except in Yunnan province of China. Ghana shows the largest raw average wage gap. The conditional average wage gap reveals a decrease with raw wage for most of countries.

Table 3 Average wages and wage differentials

Average (log) hourly wage	Wage employees										
	Kenya	Yunnan	Armenia	Colombia	Georgia	Ghana	Laos	Macedonia	Sri Lanka	Ukraine	Vietnam
Female	0.459	0.353	0.846	1.007	0.925	0.057	0.213	1.475	0.716	1.001	0.905
Male	0.674	0.352	1.176	1.226	1.242	0.594	0.540	1.539	1.008	1.293	1.173
Raw wage gap ratio (r)	0.216***	-0.001	0.330***	0.219***	0.317***	0.536***	0.327***	0.064**	0.292***	0.292***	0.268***
Differential	24.10	-0.09	39.06	24.46	37.31	70.98	38.61	6.57	33.88	33.88	30.70
Conditional wage gap	0.045	0.037	0.304***	0.175***	0.375***	0.260***	0.249***	0.163***	0.357***	0.218***	0.247***

Note: *, ** and *** indicate the significant differences at the level of 0.1, 0.05 and 0.01 respectively. Differential is calculated by $(e^r - 1) * 100$. Conditional wage gap is estimated by an OLS regression on the pooled sample of men and women with gender dummy variable.

Table 2 Summary statistics for wage employees, by gender and country

Country	Kenya		Yunnan, China		Armenia		Colombia		Georgia		Ghana		Laos		Macedonia		Sri Lanka		Ukraine		Vietnam	
Female	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Log (wage)	0.459	1.145	0.353	2.273	0.846	0.784	1.007	1.033	0.925	0.804	0.057	1.245	0.283	1.285	1.467	0.624	0.716	1.064	1.001	0.513	0.905	1.007
Hourly wage $	3.370	7.730	2.138	3.161	7.674	70.177	5.298	12.659	3.508	4.113	2.569	7.098	3.408	11.816	5.493	7.150	3.840	7.039	3.148	2.133	5.062	19.203
age	31.247	8.909	38.522	8.637	42.140	12.610	37.405	12.225	42.477	11.568	35.670	10.561	37.407	10.722	41.839	10.717	41.276	11.440	43.103	11.409	39.012	10.600
age2	1055.660	649.938	1558.400	667.845	1934.490	1060.210	1548.430	956.389	1937.850	988.613	1383.780	837.023	1514.160	848.221	1865.240	910.058	1834.360	962.850	1987.830	974.185	1634.230	856.634
Years of education	9.056	4.796	13.344	3.256	14.168	2.947	10.121	3.949	15.695	2.773	7.365	5.479	7.791	5.060	13.716	3.599	9.885	3.892	13.716	2.106	11.010	4.290
Has spouse	0.520	0.500	0.829	0.376	0.568	0.496	0.409	0.492	0.580	0.494	0.554	0.497	0.787	0.409	0.735	0.442	0.736	0.441	0.780	0.415	0.717	0.451
children	0.633	0.761	0.132	0.344	0.271	0.571	0.349	0.616	0.267	0.544	0.673	0.864	0.479	0.655	0.253	0.544	0.340	0.555	0.158	0.401	0.413	0.647
Has chronic	0.071	0.257	0.097	0.296	0.202	0.402	0.212	0.409	0.174	0.380	0.118	0.323	0.142	0.349	0.098	0.297	0.148	0.356	0.391	0.488	0.210	0.408
Additional certificate	0.081	0.273	0.065	0.247	0.089	0.285	0.018	0.133	0.169	0.375	0.049	0.217	0.032	0.175	0.203	0.402	0.103	0.305	0.103	0.304	0.035	0.184
Head of household	0.467	0.499	0.373	0.484	0.255	0.436	0.361	0.480	0.270	0.445	0.452	0.498	0.135	0.342	0.118	0.323	0.205	0.404	0.133	0.339	0.319	0.466
Years of tenure	51.646	58.841	100.043	103.314	129.074	130.228	1.609	0.488	116.068	125.547	82.127	92.984	126.934	118.833	140.263	127.901	114.961	118.733	139.783	120.856	110.464	102.543
High skill	0.148	0.355	0.291	0.455	0.591	0.492	0.157	0.364	0.593	0.492	0.096	0.295	0.137	0.344	0.490	0.500	0.316	0.465	0.563	0.496	0.276	0.447
Low skill	0.608	0.488	0.522	0.500	0.273	0.446	0.481	0.500	0.286	0.453	0.641	0.480	0.364	0.481	0.267	0.443	0.186	0.390	0.204	0.404	0.464	0.499
Elementary operator	0.158	0.365	0.105	0.307	0.103	0.305	0.222	0.416	0.091	0.288	0.043	0.203	0.096	0.294	0.094	0.292	0.244	0.430	0.117	0.322	0.099	0.299
Male	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Log (wage)	0.674	1.074	0.352	2.241	1.176	0.740	1.225	0.871	1.242	0.921	0.590	1.205	0.627	1.236	1.528	0.671	1.008	0.952	1.286	0.818	1.173	0.969
Hourly wage $	4.137	12.073	2.407	5.453	8.190	80.335	5.408	9.560	6.077	13.534	4.238	11.811	4.310	12.426	6.042	7.895	4.963	12.150	4.847	5.263	6.592	45.704
age	32.003	9.910	40.657	9.830	40.454	12.971	36.754	12.211	40.568	12.451	35.940	11.203	39.395	11.360	41.520	11.297	39.093	11.658	38.366	12.175	39.912	11.370
age2	1122.340	753.934	1749.480	805.758	1804.340	1074.050	1499.800	960.501	1800.280	1039.430	1417.090	902.031	1680.820	903.067	1851.360	954.112	1664.010	951.770	1619.790	992.921	1722.090	925.962
Years of education	10.045	4.741	12.308	3.506	13.826	3.395	10.353	3.808	15.255	2.878	9.984	5.203	9.654	5.231	12.927	3.363	9.174	3.383	13.159	2.276	11.455	4.253
Has spouse	0.595	0.491	0.818	0.386	0.722	0.449	0.550	0.498	0.730	0.445	0.522	0.500	0.830	0.376	0.704	0.457	0.779	0.415	0.731	0.444	0.770	0.421
children	0.395	0.661	0.131	0.347	0.341	0.652	0.335	0.614	0.402	0.703	0.437	0.763	0.542	0.716	0.343	0.668	0.468	0.647	0.235	0.517	0.399	0.680
Has chronic	0.029	0.168	0.123	0.329	0.108	0.311	0.110	0.313	0.120	0.326	0.075	0.264	0.096	0.295	0.065	0.247	0.117	0.322	0.281	0.450	0.189	0.392
Additional certificate	0.109	0.312	0.055	0.229	0.065	0.247	0.018	0.134	0.111	0.315	0.090	0.286	0.067	0.251	0.129	0.335	0.070	0.255	0.095	0.293	0.057	0.232
Head of household	0.854	0.353	0.504	0.500	0.611	0.488	0.630	0.483	0.622	0.486	0.862	0.345	0.742	0.438	0.581	0.494	0.701	0.458	0.325	0.469	0.570	0.495
Years of tenure	56.636	62.737	107.330	109.186	91.622	99.317	1.658	0.475	85.123	95.657	95.436	101.523	136.246	120.599	140.630	126.076	129.057	121.781	102.988	103.714	121.441	113.937

High skill	0.233	0.423	0.262	0.440	0.411	0.493	0.204	0.403	0.399	0.491	0.258	0.438	0.195	0.396	0.334	0.472	0.186	0.389	0.381	0.486	0.285	0.452
Low skill	0.435	0.496	0.403	0.491	0.208	0.407	0.289	0.453	0.228	0.420	0.213	0.410	0.173	0.379	0.248	0.432	0.194	0.396	0.092	0.289	0.322	0.467
Elementary operator	0.096	0.295	0.106	0.308	0.059	0.237	0.164	0.370	0.087	0.282	0.081	0.273	0.180	0.385	0.089	0.284	0.197	0.398	0.069	0.254	0.084	0.277

Empirical Results

Probit regression

The probit estimation is reported in the Apppendix table 4. It displays the determinants for participation in employment for both men and women, respectively, for each of countries. The results suggest that women having spouse, chronic illness and more children under 6 years old are not likely to participate a job in the labor market in most of sample countries. It indicates that being married has implications other than just the conflict of childcare or other types of domestic responsibilities with income-earning work (Ahmed and McGillivray, 2015).

The years of education have significant impact on the probability of participating in the labor market for all these developing country women, and only Ghana shows a negative effect from year of educations. When it comes to probit estimations for men, the impact of years of education is not significant for all these countries. Most of these countries reveal a larger impact of education on being in employment for women than that for men, except Colombia and Georgia. Moreover, people are more likely to hold a job with being head of the household or additional professional certificate for both women and men in most of these countries. Individuals being a head of the household have more responsibility for supporting their families in developing countries. Having additional professional certificates provides people with stronger competitiveness to participate in a job.

Wage regression

The wage equation estimates for men and women are reported in the Appendix table 5 to table 15 by each of countries. Two methods are employed to regress the wage equations, OLS and Heckman selection models. The selection bias of wage equations can be adjusted by Heckman selection estimations. The estimates for male and male wage equations are different in each country. Not all the variables show a significant influence on the log hourly wage, and the impacts are much different among the countries. However, there is a common point that the impact of education on female wage is larger than that on male wage, except for the country Ghana. The occupation types also show a significant influence on male wage. People who are high skill white collars receive higher level income. In contrast, those low skill white collars and elementary operators are paid by relatively low wage. But the effects of occupation types differ on female wage. In Armenia, Sri Lanka and Ukraine, occupation types do not display a significant impact on female wages. However, one interesting thing is female wages are increased more by high skill occupation type than male wages for the other countries (except Georgia). Additional professional certificate reveals a totally positive effect on hourly wage, but the impacts are insignificant from many of countries. The impacts of marital status are different among the countries. In countries including Kenya, Yunnan province, Armenia, Macedonia and Ukraine, marital status shows a positive impact on female wage, but negative effect on male wage. The opposite situation happens to Laos. Colombia, Sri Lanka and Ghana have a larger positive effect on female wage, while Georgia and Vietnam are with contrary status. In terms of sample selection bias, only Ukraine

shows the significant correlation between wage regression and work probit regression for both women and men. For Sri Lanka and Macedonia, only female wage equation has sample selection bias, while for Laos and Yunnan, China, male wage equation suffers the problems of sample selection.

Blinder-Oaxaca decomposition

The Blinder-Oaxaca decomposition results based on both OLS regression and selectivity corrected regression are displayed in table 16. In terms of decomposition of the OLS estimates, Georgia and Sri Lanka reveal the largest female discrimination on hourly wage. The wage gap caused by gender discrimination (unexplained wage gap) is around 0.37 log points (or 44 %). Kenya and Yunnan province show the least female discrimination with the OLS estimates, which is 0.038 log points. But after selectivity corrected, the wage gap caused by gender discrimination increases greatly in Yunnan province, Macedonia, Sri Lanka and Ukraine, but decreases a large proportion in Laos, as sample selection bias has been significantly observed in these countries. Finally, Yunnan province, Macedonia, Sri Lanka and Ukraine reveal the worst gender discrimination on hourly wage. Considering the explained wage gap, it is significantly negative in Georgia, Sri Lanka and Macedonia, which implies women who can participate in a job may have greater human capitals than male employees. It also shows an insignificant explained wage gap in Armenia. Generally, the unexplained wage gap contributes more to total gender wage gap with the selectivity corrected estimates in most of countries, except Kenya, Ghana and Laos.

Table 16 Blinder-Oaxaca decomposition for developing countries

Country	Gender wage gap by OLS			Gender wage gap by selectivity corrected		
	Explained wage gap	Unexplained wag gap	Total wage gap	Explained wage gap	Unexplained wag gap	Total wage gap
Kenya	0.1793***	0.0382***	0.2174***	0.1824***	-0.0153***	0.1672***
	(0.5576)	(0.1612)	(0.5552)	(0.5670)	(0.1343)	(0.5630)
Yunnan	-0.0385**	0.0382***	-0.0003	0.1594***	0.6306***	0.7900***
	(0.3107)	(0.1738)	(0.3278)	(0.4803)	(0.5037)	(0.4462)
Armenia	0.0187	0.3027***	0.3214***	0.0163	0.3454***	0.3617***
	(0.2789)	(0.2472)	(0.2262)	(0.2685)	(0.2432)	(0.2207)
Colombia	0.0643***	0.1546***	0.2188***	0.0658***	0.1155***	0.1812***
	(0.3253)	(0.1051)	(0.3293)	(0.3315)	(0.1229)	(0.3325)
Georgia	-0.0645**	0.3705***	0.3060***	-0.0782***	0.4720***	0.3938***
	(0.4487)	(0.2077)	(0.3665)	(0.4299)	(0.2101)	(0.3583)
Ghana	0.2648***	0.2698***	0.5346***	0.2613***	0.1783***	0.4396***
	(0.3633)	(0.2766)	(0.3847)	(0.3746)	(0.1488)	(0.3874)
Laos	0.0555***	0.2890***	0.3445***	0.0585***	0.0441***	0.1026***
	(0.3983)	(0.2040)	(0.4236)	(0.3991)	(0.2408)	(0.4182)
Macedonia	-0.0845***	0.1458***	0.0613***	-0.0746***	0.6128***	0.5382***
	(0.3048)	(0.1222)	(0.3350)	(0.2851)	(0.2785)	(0.4064)
Sri Lanka	-0.0658***	0.3632***	0.2974***	-0.0681***	1.3367***	1.2686***
	(0.3405)	(0.1243)	(0.3425)	(0.3384)	(0.3026)	(0.4449)
Ukraine	0.0897***	0.1709***	0.2605***	0.0824***	0.8457***	0.9281***
	(0.3610)	(0.2742)	(0.2663)	(0.2834)	(0.3517)	(0.3099)
Vietnam	0.0352**	0.2326***	0.2677***	0.0387**	0.2218***	0.2605***
	(0.3770)	(0.1226)	(0.3821)	(0.3581)	(0.1149)	(0.3659)

Note: *, ** and *** indicate the significant differences at the level of 0.1, 0.05 and 0.01 respectively.

To see the relationship between the level of gender wage discrimination and economic development, a simple OLS regression is processed on unexplained wage gap. The estimation results display an insignificantly positive effect of GDP per capita on unexplained wage gap. Then no strong evidence is obtained that gender wage discrimination is correlated with economic development.

Conclusion

This study constructs the wage equations according to Mincer earnings function for male and female separately. The equations are estimated by OLS and Heckman selection regression for eleven developing countries. Since people may choose to participate in a job or not, the gender wage estimates of OLS may have sample selection bias which could be corrected by Heckman regressions. The analyses show that the estimates of wage equations from five countries including Ukraine, Sri Lanka, Macedonia Lao and Yunnan, China have the selection bias. Considering the probability of job participation, our results suggest that women who are being marriage and have more young children and chronic illness are less likely to participate in a job.

Comparing the estimates of female wage equations and male wage equations, we find that better education raise wages more for women than men, and women who work as high skill white collar receive more benefits than men. The impact of marital status on gender wage differs among the countries and additional professional certificate could help people to get better pay for both men and women.

In terms of gender wage gap analysis, we conduct the Blinder-Oaxaca decomposition for each of countries by the estimates of OLS regression and Heckman regressions. The results reveal a relatively high level of gender wage discrimination in Yunnan province, Macedonia, Sri Lanka and Ukraine. For most countries, the unexplained wage gap contributes more to the total wage gap,

comparing with the explained wage gap. However, there is no strong evidence to show that the wage discrimination is correlated with national economic development.

Appendix

Table 4 Probit estimates for likelihood of work participation in employment, by gender and country

Female	Kenya	Yunnan	Armenia	Colombia	Georgia	Ghana	Lao	Macedonia	Sri Lanka	Ukraine	Vietnam
Intercept	-4.2294 ***	-6.6297 ***	-4.4195 ***	-3.3254 ***	-4.0399 ***	-4.4949 ***	-4.0433 ***	-7.6910 ***	-4.0986 ***	-7.0580 ***	-5.2678 ***
	(0.3181)	(0.5780)	(0.3536)	(0.2940)	(0.3398)	(0.3324)	(0.3648)	(0.4358)	(0.3465)	(0.4804)	(0.3227)
age	0.2230 ***	0.2969 ***	0.1279 ***	0.1988 ***	0.1192 ***	0.2739 ***	0.2539 ***	0.2796 ***	0.1727 ***	0.2881 ***	0.3176 ***
	(0.0198)	(0.0295)	(0.0172)	(0.0168)	(0.0179)	(0.0199)	(0.0220)	(0.0208)	(0.0186)	(0.0214)	(0.0174)
age2	-0.0027 ***	-0.0039 ***	-0.0014 ***	-0.0025 ***	-0.0014 ***	-0.0032 ***	-0.0032 ***	-0.0033 ***	-0.0019 ***	-0.0035 ***	-0.0041 ***
	(0.0003)	(0.0004)	(0.0002)	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
years_educ	0.0203 ***	0.1428 ***	0.1144 ***	0.0194 **	0.0883 ***	-0.0159 **	0.0218 **	0.1632 ***	0.0422 ***	0.1591 ***	0.0255 ***
	(0.0069)	(0.0147)	(0.0105)	(0.0097)	(0.0116)	(0.0074)	(0.0100)	(0.0103)	(0.0108)	(0.0193)	(0.0084)
has_spouse	-0.2045 ***	-0.0144	-0.4191 ***	-0.3798 ***	-0.1910 **	0.1594 *	0.3946 ***	0.1310	-0.3434 ***	-0.1148	-0.0406
	(0.0780)	(0.1364)	(0.0756)	(0.0828)	(0.0773)	(0.0948)	(0.1263)	(0.0920)	(0.0952)	(0.0925)	(0.0805)
children	-0.0275	-0.2619 **	-0.1092 **	0.0045	-0.1948 ***	-0.1033 **	-0.1646 ***	-0.2187 ***	-0.1467 **	-0.4695 ***	-0.0926 *
	(0.0413)	(0.1305)	(0.0529)	(0.0586)	(0.0544)	(0.0455)	(0.0634)	(0.0597)	(0.0607)	(0.0829)	(0.0518)
chronic	0.0241	-0.2378 *	-0.0563	-0.0617	-0.2329 ***	0.0292	-0.3758 ***	-0.1994 *	-0.1858 **	-0.1921	-0.2055
	(0.1220)	(0.1365)	(0.0825)	(0.0858)	(0.0820)	(0.1270)	(0.1160)	(0.1028)	(0.0944)	(0.0823)	(0.0809)
add_cer	0.0399	-0.0295	0.3463 ***	0.1891	0.2010 **	0.4253 **	0.3998	-0.1268	0.5673 ***	0.0410 **	0.1513 **
	(0.1248)	(0.2243)	(0.1276)	(0.3165)	(0.0937)	(0.2105)	(0.3356)	(0.1079)	(0.1467)	(0.1451)	(0.1960)
head	0.4709 ***	-0.0281	-0.1778 **	0.1564 *	0.1121	0.2661 ***	0.0985	0.1535	-0.0250	-0.0435	0.1975 **
	(0.0765)	(0.0958)	(0.0821)	(0.0907)	(0.0878)	(0.0903)	(0.1531)	(0.1173)	(0.0961)	(0.1138)	(0.0791)
Estrella	0.1778	0.3184	0.1150	0.1363	0.1058	0.2617	0.2316	0.3221	0.1070	0.2845	0.2601
Likelihood Ratio	351.95	356.11	241.30	204.72	211.51	427.46	295.14	690.29	181.75	418.75	508.20
Male	Kenya	Yunnan	Armenia	Colombia	Georgia	Ghana	Lao	Macedonia	Sri Lanka	Ukraine	Vietnam

Intercept	-3.5866	-5.2522	-3.3566	-3.7223	-3.2399	-5.1249	-4.9472	-5.6829	-3.9195	-4.7094	-5.9933
	***	***	***	***	***	***	***	***	***	***	***
	(0.3484)	(0.5699)	(0.4457)	(0.3931)	(0.4097)	(0.4298)	(0.5670)	(0.3585)	(0.4340)	(0.5243)	(0.4056)
age	0.2159	0.2752	0.0989	0.2351	0.0692	0.3131	0.3464	0.2348	0.2643	0.2044	0.3646
	***	***	***	***	***	***	***	***	***	***	***
	(0.0219)	(0.0292)	(0.0249)	(0.0232)	(0.0227)	(0.0272)	(0.0389)	(0.0177)	(0.0245)	(0.0258)	(0.0225)
age2	-0.0027	-0.0035	-0.0012	-0.0029	-0.0009	-0.0037	-0.0042	-0.0028	-0.0033	-0.0028	-0.0046
	***	***	***	***	***	***	***	***	***	***	***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0005)	(0.0002)	(0.0003)	(0.0003)	(0.0003)
years_educ	-0.0113	0.0895	0.0986	0.0269	0.1001	-0.0243	-0.0252	0.1035	-0.0118	0.1212	0.0127
		***	***	*	***	**		***		***	
	(0.0084)	(0.0152)	(0.0149)	(0.0140)	(0.0162)	(0.0110)	(0.0179)	(0.0113)	(0.0177)	(0.0253)	(0.0119)
has_spouse	0.2422	-0.1416	0.2960	0.2813	0.4115	0.3788	0.8419	0.2480	0.2443	0.2420	0.3881
	**		**	**	***	***	***	***			***
	(0.1059)	(0.1551)	(0.1420)	(0.1267)	(0.1195)	(0.1458)	(0.2326)	(0.0930)	(0.1796)	(0.1510)	(0.1338)
children	0.0777	0.2173	0.0757	0.2627	0.1683	0.0374	0.0804	0.0548	0.1600	-0.1025	0.0070
				**	**						
	(0.0720)	(0.1577)	(0.0826)	(0.1036)	(0.0822)	(0.0833)	(0.1076)	(0.0586)	(0.1033)	(0.1238)	(0.0760)
chronic	-0.0694	-0.1077	-0.4426	-0.3444	-0.3549	-0.0199	-0.6262	-0.3331	-0.5156	-0.3250	-0.1300
			***	**	***		**	***	***	***	
	(0.1974)	(0.1443)	(0.1417)	(0.1424)	(0.1291)	(0.2015)	(0.2455)	(0.1200)	(0.1431)	(0.1190)	(0.1174)
add_cer	0.1862	-0.3775	-0.0958	0.2313	0.1796	0.4156	-0.0631	-0.1889	0.3795	0.1631	0.2418
		*				*					
	(0.1294)	(0.2143)	(0.2015)	(0.5878)	(0.1629)	(0.2276)	(0.3548)	(0.1171)	(0.2475)	(0.2179)	(0.2467)
head	0.6342	0.0285	0.1696	0.1286	0.1034	0.4975	-0.2256	0.1234	0.2935	0.6192	0.0181
	***					***			*	***	
	(0.0919)	(0.1013)	(0.1215)	(0.1307)	(0.1089)	(0.1229)	(0.2715)	(0.0911)	(0.1723)	(0.1393)	(0.1094)
Estrella	0.2613	0.2350	0.1746	0.2144	0.1567	0.4108	0.3794	0.2473	0.2820	0.2747	0.3973
Likelihood Ratio	468.90	216.10	144.17	225.95	151.91	505.38	292.44	443.32	294.57	198.95	531.93

Note: *, ** and *** indicate the significant differences at the level of 0.1, 0.05 and 0.01 respectively.

Table 5 Wage equation estimates of Kenya, by gender

Kenya	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-1.494***	0.415	-0.676**	0.312	-1.621	1.018	-1.205**	0.579
age	0.055**	0.023	0.033*	0.018	0.061	0.046	0.057**	0.028
age2	-0.001*	0.000	0.000	0.000	-0.001	0.001	-0.001*	0.000
years_educ	0.068***	0.008	0.065***	0.006	0.069***	0.009	0.065***	0.006
tenure	0.001*	0.001	0.002***	0.000	0.001*	0.001	0.002***	0.000
add_cer	0.201	0.127	0.212**	0.087	0.202	0.127	0.225**	0.088
has_spouse	0.117*	0.067	-0.137**	0.064	0.107	0.104	-0.100	0.073

h_skill	0.707***	0.148	0.579***	0.080	0.707***	0.148	0.572***	0.080
l_skill	-0.012	0.120	-0.253***	0.065	-0.012	0.120	-0.262***	0.065
element_ope	-0.028	0.141	-0.226**	0.099	-0.029	0.141	-0.234**	0.099
Sigma					1.014***	0.024	0.910***	0.025
Intercept					-4.229***	0.318	-3.543***	0.349
age					0.223***	0.020	0.213***	0.022
age2					-0.003***	0.000	-0.003***	0.000
years_educ					0.020***	0.007	-0.011	0.008
has_spouse					-0.205***	0.078	0.249**	0.106
children					-0.027	0.041	0.061	0.073
chronic					0.026	0.123	-0.056	0.197
add_cer					0.041	0.125	0.185	0.129
head					0.471***	0.077	0.650***	0.091
Rho					0.038	0.273	0.243	0.216
R-square	0.2148		0.2887					

Note: *, ** and *** indicate the significant differences at the level of 0.1, 0.05 and 0.01 respectively.

Table 6 Wage equation estimates of Yunnan, China, by gender

Yunnan, China	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.7003	1.6465	-0.0255	1.4107	-0.702	1.990	7.636***	1.295
age	0.0102	0.0839	-0.0162	0.0709	0.009	0.094	-0.334***	0.065
age2	-0.0001	0.0011	0.0001	0.0008	0.000	0.001	0.004***	0.001
years_educ	0.0791**	0.0339	0.0612**	0.0300	0.080**	0.038	-0.034	0.029
tenure	0.0001	0.0011	0.0014	0.0009	0.000	0.001	0.000	0.001
add_cer	0.0771	0.3869	0.1955	0.3950	0.082	0.384	0.511	0.402
has_spouse	-0.0486	0.2670	0.1345	0.2743	-0.044	0.266	0.353	0.280
h_skill	-0.0510	0.3890	-0.1816	0.2714	-0.053	0.386	0.043	0.206
l_skill	-0.3239	0.3670	-0.2314	0.2375	-0.325	0.365	-0.367**	0.182
element_ope	-0.4196	0.4527	-0.3093	0.3381	-0.423	0.450	-0.525**	0.250
Sigma					2.247***	0.065	2.484***	0.076
Intercept					-6.630***	0.578	-3.847***	0.515
age					0.297***	0.029	0.201***	0.027
age2					-0.004***	0.000	-0.003***	0.000
years_educ					0.143***	0.015	0.048***	0.013
has_spouse					-0.014	0.136	0.076	0.133
children					-0.263**	0.131	0.013	0.113
chronic					-0.238*	0.137	-0.107	0.085
add_cer					-0.030	0.224	-0.294	0.191
head					-0.028	0.096	0.103	0.068
Rho					0.013	0.108	-0.966***	0.006

R-square	0.0214	0.0208

Table 7 Wage equation estimates of Armenia, by gender

Armenia	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.0709	0.4501	0.6113	0.4735	-0.0332	2.0595	0.7659	0.6265
age	0.0091	0.0192	0.0227	0.0245	0.0078	0.0492	0.0202	0.0262
age2	-0.0001	0.0002	-0.0004	0.0003	-0.0001	0.0005	-0.0003	0.0003
years_educ	0.0592***	0.0123	0.0094	0.0128	0.0583	0.0427	0.0056	0.0152
tenure	-0.0002	0.0003	0.0005	0.0004	-0.0002	0.0003	0.0005	0.0004
add_cer	0.1660	0.1111	-0.0325	0.1537	0.1647	0.1563	-0.0302	0.1520
has_spouse	-0.0197	0.0660	0.1972*	0.1083	-0.0174	0.1497	0.1799	0.1109
h_skill	-0.0464	0.1824	0.1678*	0.0988	-0.0380	0.1812	0.1701	0.0975
l_skill	-0.0179	0.1826	-0.1790*	0.1074	-0.0100	0.1812	-0.1730	0.1062
element_ope	-0.2663	0.1986	-0.4521***	0.1685	-0.2575	0.1970	-0.4540***	0.1661
Sigma					0.7578***	0.0235	0.7022***	0.0274
Intercept					-4.4193***	0.3567	-3.3483***	0.4462
age					0.1278***	0.0173	0.0984***	0.0249
age2					-0.0014***	0.0000	-0.0012***	0.0003
years_educ					0.1145***	0.0105	0.0985***	0.0150
has_spouse					-0.4169***	0.0778	0.2945**	0.1422
children					-0.1100*	0.0595	0.0728	0.0828
chronic					-0.0558	0.0866	-0.4426***	0.1416
add_cer					0.3456***	0.1282	-0.0902	0.2015
head					-0.1753**	0.0831	0.1843	0.1258
Rho					-0.0093	0.6630	-0.0918	0.1923
R-square	0.0756		0.1052					

Table 8 Wage equation estimates of Colombia, by gender

Colombia	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.0739	0.3637	0.2542	0.3073	-0.0438	1.1485	0.0637	0.6016
age	0.0059	0.0189	0.0083	0.0167	0.0046	0.0507	0.0169	0.0287
age2	0.0000	0.0002	-0.0001	0.0002	0.0000	0.0006	-0.0002	0.0004
years_educ	0.0518***	0.0108***	0.0554	0.0087	0.0516***	0.0115	0.0561***	0.0088
tenure	0.0801	0.0746	0.0974	0.0639	0.0808	0.0742	0.0967	0.0636
add_cer	0.1572	0.2619	0.3281	0.2229	0.1534	0.2621	0.3274	0.2218
has_spouse	0.1230*	0.0708	0.0879	0.0634	0.1279	0.1182	0.0995	0.0704
h_skill	0.5809***	0.1354***	0.3321	0.0869	0.5854***	0.1346	0.3331***	0.0864
l_skill	0.2276**	0.1057	-0.0684	0.0739	0.2314**	0.1050	-0.0685	0.0734
element_ope	0.0562	0.1183	-0.0969	0.0868	0.0591	0.1176	-0.0973	0.0863

Sigma				0.9757***	0.0250	0.8109***	0.0210
Intercept				-3.3268***	0.2941	-3.7301***	0.3941
age				0.1989***	0.0169	0.2356***	0.0233
age2				-0.0025***	0.0002	-0.0029***	0.0003
years_educ				0.0194**	0.0097	0.0271*	0.0141
has_spouse				-0.3804***	0.0834	0.2834**	0.1267
children				0.0042	0.0588	0.2580**	0.1042
chronic				-0.0627	0.0879	-0.3502**	0.1427
add_cer				0.1826	0.3162	0.2323	0.5875
head				0.1554*	0.0925	0.1261	0.1309
Rho				-0.0211	0.3950	0.1033	0.2789
R-square	0.1070		0.1353				

Table 9 Wage equation estimates of Georgia, by gender

Georgia	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.1209	0.4471	-0.0410	0.5518	-0.0935	1.4731	0.2569	0.9430
age	-0.0158	0.0202	0.0100	0.0287	-0.0167	0.0402	0.0093	0.0311
age2	0.0001	0.0002	-0.0002	0.0003	0.0001	0.0005	-0.0002	0.0004
years_educ	0.0904***	0.0128	0.0687***	0.0193	0.0906***	0.0256	0.0565**	0.0260
tenure	0.0003	0.0003	0.0005	0.0005	0.0003	0.0003	0.0005	0.0005
add_cer	0.0099	0.0846	0.0815	0.1486	0.0057	0.0945	0.1017	0.1505
has_spouse	0.0266	0.0655	0.1610	0.1157	0.0313	0.0954	0.1012	0.1448
h_skill	0.2295	0.1882	0.3687***	0.1239	0.2281	0.1865	0.4009***	0.1221
l_skill	-0.1115	0.1896	-0.3727***	0.1308	-0.1066	0.1884	-0.3674***	0.1281
element_ope	0.2105	0.2094	-0.0303	0.1764	0.2119	0.2077	0.0078	0.1750
Sigma					0.7299***	0.0232	0.8248***	0.0385
Intercept					-4.0395***	0.3400	-3.2333***	0.4097
age					0.1192***	0.0179	0.0689***	0.0227
age2					-0.0014***	0.0002	-0.0009***	0.0003
years_educ					0.0883***	0.0116	0.1000***	0.0162
has_spouse					-0.1905**	0.0786	0.4097***	0.1196
children					-0.1945***	0.0549	0.1660**	0.0825
chronic					-0.2332***	0.0823	-0.3604***	0.1294
add_cer					0.2009**	0.0938	0.1735	0.1634
head					0.1135	0.0981	0.1109	0.1099
Rho					-0.0154	0.4835	-0.1194	0.3037
R-square	0.1737		0.1987					

Table 10 Wage equation estimates of Ghana, by gender

Ghana	OLS		Heckman Selection	
	Female	Male	Female	Male

	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.9091**	0.4240	-1.1869**	0.4731	-0.4331	0.9082	-1.5559	0.9608
age	0.0356	0.0227	0.0685***	0.0253	0.0141	0.0429	0.0857*	0.0465
age2	-0.0005	0.0003	-0.0008***	0.0003	-0.0002	0.0005	-0.0010*	0.0005
years_educ	0.0305***	0.0077	0.0380***	0.0093	0.0314***	0.0078	0.0373***	0.0094
tenure	0.0011**	0.0005	0.0005	0.0005	0.0011**	0.0005	0.0005	0.0005
add_cer	0.2605	0.1810	0.2122	0.1484	0.2345	0.1856	0.2249	0.1508
has_spouse	0.1136	0.0765	0.0329	0.0919	0.1142	0.0764	0.0457	0.0960
h_skill	0.6214***	0.1595	0.3118***	0.1144	0.6221***	0.1587	0.3104***	0.1138
l_skill	-0.2049**	0.0906	-0.2429**	0.1059	-0.2042**	0.0902	-0.2446**	0.1053
element_ope	0.0332	0.1917	0.1568	0.1493	0.0325	0.1908	0.1503	0.1490
Sigma					1.1846***	0.0297	1.1474***	0.0283
Intercept					-4.4939***	0.3323	-5.1204***	0.4302
age					0.2740***	0.0199	0.3124***	0.0273
age2					-0.0032***	0.0003	-0.0037***	0.0003
years_educ					-0.0160**	0.0074	-0.0241**	0.0110
has_spouse					0.1621*	0.0950	0.3709**	0.1469
children					-0.1066**	0.0456	0.0415	0.0838
chronic					0.0493	0.1307	-0.0321	0.2036
add_cer					0.4316**	0.2108	0.3985*	0.2311
head					0.2646***	0.0903	0.5031***	0.1229
Rho					-0.1298	0.2170	0.1127	0.2546
R-square	0.1007		0.0951					

Table 11 Wage equation estimates of Laos, by gender

Laos	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-1.1442**	0.4532	-0.3453	0.5038	-0.1584	0.8435	-2.2065***	0.6099
age	0.0406	0.0248	0.0346	0.0284	-0.0033	0.0402	0.1190***	0.0325
age2	-0.0005*	0.0003	-0.0004	0.0003	0.0000	0.0005	-0.0014***	0.0004
years_educ	0.0559***	0.0100	0.0373***	0.0111	0.0531***	0.0102	0.0353***	0.0113
tenure	-0.0003	0.0004	-0.0007	0.0004	-0.0003	0.0004	-0.0007	0.0004
add_cer	-0.0618	0.2360	0.0978	0.1910	-0.1023	0.2394	0.1113	0.1957
has_spouse	0.1032	0.1048	-0.2720**	0.1459	0.0562	0.1107	-0.0886	0.1510
h_skill	0.5646***	0.1494	0.4074***	0.1433	0.5580***	0.1490	0.3849***	0.1418
l_skill	0.3009***	0.0986	0.3892***	0.1311	0.2984***	0.0982	0.3779***	0.1291
element_ope	0.6252***	0.1459	0.6075***	0.1308	0.6233***	0.1453	0.6067***	0.1298
Sigma					1.2258***	0.0415	1.2199***	0.0380
Intercept					-4.0434***	0.3634	-4.7569***	0.5625
age					0.2555***	0.0221	0.3303***	0.0387
age2					-0.0032***	0.0003	-0.0040***	0.0005
years_educ					0.0198*	0.0102	-0.0229	0.0172

has_spouse					0.3813***	0.1256	0.8572***	0.2262
children					-0.1720***	0.0628	0.0864	0.0992
chronic					-0.3914***	0.1146	-0.9294***	0.2338
add_cer					0.4608	0.3408	-0.1854	0.3478
head					0.0701	0.1525	-0.0371	0.2706
Rho					-0.2992	0.2081	0.7146***	0.1094
R-square	0.0214		0.1026					

Table 12 Wage equation estimates of Macedonia, by gender

Macedonia	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	0.3221	0.3075	0.5096*	0.2974	-2.6822***	0.4518	1.1769	0.7600
age	0.0042	0.0145	0.0061	0.0144	0.1009***	0.0188	-0.0169	0.0281
age2	0.0000	0.0002	-0.0001	0.0002	-0.0012***	0.0002	0.0002	0.0003
years_educ	0.0426***	0.0070	0.0526***	0.0078	0.0935***	0.0091	0.0439***	0.0119
tenure	0.0006***	0.0002	0.0006***	0.0002	0.0008***	0.0002	0.0006***	0.0002
add_cer	0.0071	0.0521	-0.1196*	0.0685	-0.0289	0.0599	-0.1048	0.0706
has_spouse	-0.0303	0.0439	0.0765	0.0513	-0.0315	0.0488	0.0509	0.0578
h_skill	0.6090***	0.0629	0.3188***	0.0571	0.5694***	0.0596	0.3198***	0.0568
l_skill	0.2060***	0.0605	-0.0390	0.0551	0.1863***	0.0562	-0.0389	0.0548
element_ope	0.1468**	0.0776	-0.0213	0.0776	0.1434**	0.0715	-0.0208	0.0770
Sigma					0.6214***	0.0263	0.6133***	0.0292
Intercept					-7.5107***	0.4252	-5.6735***	0.3579
age					0.2711***	0.0203	0.2346***	0.0177
age2					-0.0032***	0.0002	-0.0028***	0.0002
years_educ					0.1600***	0.0105	0.1028***	0.0113
has_spouse					0.1436	0.0875	0.2351**	0.0932
children					-0.1793***	0.0505	0.0674	0.0586
chronic					-0.1955**	0.0868	-0.3426**	0.1189
add_cer					-0.1050	0.1066	-0.1829	0.1171
head					0.1800*	0.1002	0.1328	0.0903
Rho					0.8034***	0.0418	-0.2544	0.2522
R-square	0.3692		0.1920					

Table 13 Wage equation estimates of Sri Lanka, by gender

Sri Lanka	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.7797	0.5262	0.0817	0.3761	-4.4258***	0.9945	-0.0474	0.5390
age	0.0326	0.0265	0.0237	0.0199	0.1528***	0.0407	0.0314	0.0268
age2	-0.0004	0.0003	-0.0003	0.0002	-0.0017***	0.0005	-0.0004	0.0003
years_educ	0.0635***	0.0148	0.0476***	0.0118	0.0943***	0.0174	0.0496***	0.0118

tenure	0.0008	0.0004	0.0002	0.0003	0.0007*	0.0004	0.0001	0.0003
add_cer	0.1244	0.1545	0.3277**	0.1345	0.4785**	0.1959	0.3098**	0.1345
has_spouse	0.1843*	0.1007	0.0733	0.0947	-0.0727	0.1349	0.0518	0.0992
h_skill	0.2002	0.1308	0.2662***	0.1005	0.2161	0.1315	0.2450**	0.1005
l_skill	-0.1216	0.1304	-0.1301	0.0876	-0.1474	0.1313	-0.1462*	0.0876
element_ope	-0.0493	0.1253	-0.1150	0.0889	-0.0344	0.1255	-0.1138	0.0893
Sigma					1.2642***	0.1109	0.8995***	0.0222
Intercept					-4.0434***	0.3445	-3.9190***	0.4343
age					0.1694***	0.0185	0.2643***	0.0245
age2					-0.0019***	0.0002	-0.0033***	0.0003
years_educ					0.0405***	0.0109	-0.0118	0.0177
has_spouse					-0.3299***	0.0928	0.2441	0.1797
children					-0.1232**	0.0550	0.1599	0.1033
chronic					-0.1528*	0.0846	-0.5159***	0.1435
add_cer					0.5354***	0.1451	0.3803	0.2487
head					-0.0152	0.0847	0.2937*	0.1724
Rho					0.7548***	0.0938	0.0064	0.1795
R-square	0.1360		0.1031					

Table 14 Wage equation estimates of Ukraine, by gender

Ukraine	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.4865	0.3208	0.8360	0.5621	-2.5589***	0.5705	2.9713***	0.6244
age	0.0265**	0.0131	0.0220	0.0264	0.0974***	0.0218	-0.0518*	0.0285
age2	-0.0003**	0.0002	-0.0005	0.0003	-0.0012***	0.0003	0.0006*	0.0004
years_educ	0.0778***	0.0120	0.0196	0.0215	0.1143***	0.0144	-0.0172	0.0228
tenure	0.0003	0.0002	0.0013***	0.0005	0.0003	0.0002	0.0011**	0.0004
add_cer	-0.0135	0.0651	-0.1034	0.1388	-0.0183	0.0715	-0.1450	0.1531
has_spouse	-0.0097	0.0485	0.0532	0.1014	-0.0538	0.0533	-0.0974	0.1109
h_skill	-0.0642	0.0717	-0.0250	0.1035	-0.0552	0.0685	0.0072	0.0991
l_skill	-0.2849***	0.0743	-0.3655**	0.1499	-0.2699***	0.0716	-0.3470**	0.1420
element_ope	-0.2511***	0.0837	-0.8277***	0.1634	-0.2576***	0.0801	-0.7266***	0.1528
Sigma					0.5394***	0.0324	0.8818***	0.0496
Intercept					-7.0611***	0.4918	-4.6130***	0.5308
age					0.2742***	0.0220	0.1947***	0.0264
age2					-0.0034***	0.0003	-0.0027***	0.0003
years_educ					0.1734***	0.0196	0.1210***	0.0251
has_spouse					-0.1091	0.0933	0.3077**	0.1508
children					-0.3960***	0.0803	-0.0695	0.1148
chronic					-0.0903	0.0781	-0.2102*	0.1080
add_cer					0.0416	0.1449	0.1921	0.2113
head					-0.0404	0.1037	0.4949***	0.1317

Rho				0.7247***	0.0960	-0.7702***	0.0601
R-square	0.2159		0.1432				

Table 15 Wage equation estimates of Vietnam, by gender

Vietnam	OLS				Heckman Selection			
	Female		Male		Female		Male	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-0.8859**	0.3694	-0.8534**	0.3835	-0.4007	1.4874	-0.2545	0.6573
age	0.0433**	0.0190	0.0622***	0.0196	0.0204	0.0705	0.0341	0.0318
age2	-0.0005**	0.0002	-0.0007***	0.0002	-0.0003	0.0009	-0.0004	0.0004
years_educ	0.0644***	0.0081	0.0515***	0.0090	0.0628***	0.0094	0.0506***	0.0090
tenure	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
add_cer	0.1499	0.1469	-0.0182	0.1307	0.1422	0.1485	-0.0300	0.1310
has_spouse	0.0807	0.0630	0.1384*	0.0831	0.0880	0.0668	0.1149	0.0855
h_skill	0.3508***	0.0984	0.3231***	0.0908	0.3502***	0.0980	0.3232***	0.0903
l_skill	0.1939**	0.0789	-0.0348	0.0767	0.1937**	0.0786	-0.0351	0.0762
element_ope	0.0274	0.1096	-0.1537	0.1171	0.0276	0.1091	-0.1525	0.1165
Sigma					0.9346***	0.0348	0.8970***	0.0240
Intercept					-5.2718***	0.3234	-6.0003***	0.4054
age					0.3177***	0.0174	0.3642***	0.0226
age2					-0.0041***	0.0002	-0.0045***	0.0003
years_educ					0.0252***	0.0084	0.0134	0.0118
has_spouse					-0.0405	0.0803	0.3898***	0.1333
children					-0.0832	0.0597	0.0112	0.0758
chronic					-0.2087***	0.0807	-0.1463	0.1177
add_cer					0.1527	0.1962	0.2376	0.2471
head					0.2001**	0.0789	0.0313	0.1099
Rho					-0.1418	0.4170	-0.1924	0.1691
R-square	0.1463		0.1520					

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