

Understanding trade exposure and labour market:

Evidence from Vietnam's household data

Linh Pham¹, Yothin Jinjarak²

¹ The School of Economics and Finance

Victoria University of Wellington

² The School of Economics and Finance

Victoria University of Wellington

Abstracts: *We employ microdata from the Vietnam Living Standard Survey in 2006-2016 to examine the variation in the impacts of tariff reductions after the WTO accession on the labour market across 63 provinces in Vietnam. We find no evidence of differences in the changes in employment, unemployment and outside the labour force in provinces more exposed to the trade shock, but workers in these provinces are more likely to work for registered enterprises (the formal sector). Workers experience a wage drop and are less likely to earn wages above the industry's median wage in comparison to workers in less exposed provinces. The gain is bigger and the loss is less severe for women than for men, notably women who are above 30 years old, low-skilled, live in provinces with high foreign direct investment inflows, or live in provinces with a high share of initial female employment.*

Keywords: local trade exposure, labour market, employment, wages, formal sector

JEL: F14, F16, J16, J61

1. Introduction

What are the effects of trade liberalization on the labour market? How do these effects vary across regions of a nation? Studies find the mixed evidence on the variation of the local exposure to trade shocks. Kovak (2013) point out a wage reduction in the regions more exposed to a trade reform in Brazil. Erten et al. (2019) find in South Africa a significant drop in employment of both informal and formal sectors in districts harder hit by trade liberalization; workers may opt to stop searching for job or exit the labour force. Dix-Carneiro & Kovak (2019) find negative effects of trade liberalization on employment and earnings of formal sector in Brazil; with the displaced

workers in the traded industries tend to move to the non-traded industries, and the displaced workers in the formal sector end up finding jobs in the informal sector. In contrast, the work of McCaig (2011) in Vietnam in 2002-2004 find that low-skilled workers in provinces more exposed to tariff reductions after the Vietnam-US bilateral trade agreement (BTA) gain a higher wage growth and poverty declines in these provinces as well. Kis-Katos & Sparrow (2015) find the positive impacts of tariff reductions on work participation and wage in Indonesia. The mixed evidence in the current literature indicates that the answer to our research question is context-dependent. To our best knowledge, there has not been a comprehensive analysis on the impacts of trade liberalization on labour markets in the context of the World Trade Organization (WTO) and a developing country like Vietnam. This study provides empirical evidence to the literature in this new setting.

Using individual level data from the Vietnam Household Living Standard Survey (VHLSS), we find that there is no significant variation in the impact of tariff cuts after the WTO accession on economy-wide employment across provinces. Women in provinces more exposed to tariff reductions have a higher probability of being employed in the traded sector than women in less exposed provinces. The increase in employment in the traded sector is offset by the decline in employment in the non-traded sector in harder hit provinces. Employees in these provinces have a higher probability of having a job in registered enterprises. We also find no evidence of variation in the impacts of local tariff exposure on unemployment and outside the labour force. However, wages in provinces exposed to an average tariff reduction of 7.6 percent drop by 0.22 percentage points for men and 0.18 percentage points for women. In terms of the adequacy of wages, employees in provinces more exposed to tariff reductions have a lower probability of earning wages above the industry's median wage.

We further delve into the gender dimension of trade-induced inequality. Gaddis & Pieters (2017) and Kis-Katos et al. (2018) find some evidence in the sample of, respectively, Brazil and Indonesia, the role of tariff reductions on gender gap in employment. We find that older-age cohort women, low-skilled women, women in provinces with a high level of foreign direct investment inflows or with a high initial share of female employment gain more employment and wage

benefits than men from trade liberalization. We use microdata at the individual level from the VHLSS, allowing for different individual characteristics that might affect the individual decisions in the labour market. We cover a wide range of labour market outcomes in terms of employment, unemployment, outside the labour force, wages, and the adequacy of wages, adding more details on factors widening the gap between the winners and the losers in the society.

The entry to the WTO is a major step for Vietnam to join a big international market of more than 150 countries. Nonetheless, the distributive impacts of trade liberalization on different stakeholders in the country is one of the main concerns. McCaig (2011); McCaig & Pavcnik (2018) suggest a movement of workers from households to registered enterprises and a smaller poverty gap in Vietnam under the impact of the Vietnam-US trade agreement. However, our analysis bases on a different background. Vietnam reduces import tariffs to meet the WTO commitments, while export tariffs are reduced in the case of the bilateral trade agreement. The reductions of import tariffs can both increase the imports of substitute products from overseas and lower the cost of intermediate inputs for domestic production. Thus, the distributive impacts of import tariff reductions are ambiguous (Erten et al., 2019). Our study digs in the variation in tariff exposure across provinces to add evidence of WTO accession in the case of Vietnam. We also add the gender-dimension of the labor outcomes which have been given inadequate attention.

Section 2 of this paper describes data and trends in Vietnam's labour market. The tariff reductions after the WTO accession is discussed in Section 3. Methodology is given in Section 4. Section 5 shows empirical findings. Conclusion is given in Section 6.

2. Data and trends in Vietnam's labour market

2.1. Data

This study uses the pooled individual-level data from the Vietnam Household Living Standard Survey. The survey is conducted by the General Statistics Office (GSO) in Vietnam. We employ the survey data in 2006-2016 to investigate the causal effects of tariff reductions since the WTO accession on labour market outcomes. The household sample sizes are 9,189 households in VHLSS 2006-VHLSS 2008 and 9,399 households in VHLSS 2010-VHLSS 2016.

These samples are representative for the country. The households are sampled using the two-stage strata sampling. A wide range of details on the living standards of different population groups are covered, namely individual demographic characteristics, health and healthcare, employment and income, expenditure, housing, poverty reduction.

We restrict the sample to individuals who age 15 to 60, because according to the Labour Code in Vietnam, the youngest working age is 15 and the retirement age is 55 for women and 60 for men. Our analysis focuses on the most time-consuming job, and we define it as the main job. We examine the impacts of tariff reductions on labor market outcomes in terms of: employment; formal employment; unemployment; outside the labor force; wages (i.e., the average hourly wage of a worker); the adequacy of wages (i.e., the indicator of an individual earning wages above the industry's median wage). Our definition of indicators of labor market outcomes is not perfectly consistent with that of the International Labour Organization (ILO) because the information we collect from the household survey is not sufficient to satisfy all the characteristics of the indicators defined by the ILO¹. With available information from the household survey, we define unemployment as the status of a person in the working age being unable to find a job; outside the labor force as the status of a person in the working age either being at school, or doing housework, or being sick, or being too old, or being disabled; formal employment as the status of a person in the working age working for a registered enterprise². It is noted that the data on unemployment and outside the labour force are only available in 2006, 2008, 2014, and 2016, because there is no question on the reasons for not working in 2010 and 2012. We look at the adequacy of wage because some provinces are more likely to contain workers who have below-median wages while

¹ The ILO defines unemployment as the status of "all those of working age who were not in employment, carried out activities to seek employment during a specified recent period and were currently available to take up employment given a job opportunity"; outside the labor force as the status of persons of working age "who, during the specified reference period, were not in the labour force (that is, were not employed or unemployed)"; informal sector as "a sector comprises persons who in their main job were: (a) own-account workers, employers or members of producers' cooperatives employed in their own informal sector enterprises; (b) own-account workers engaged in the production of goods exclusively for own final use by their household; (c) contributing family workers, irrespective of whether they work in formal or informal sector enterprises; or (d) employees holding informal jobs, whether employed by formal sector enterprises, informal sector enterprises, or as paid domestic workers by households". (see <https://www.ilo.org/ilostat-files/Documents/Statistical%20Glossary.pdf> for more details).

² Our definition of formal employment follows that of McCaig & Pavcnik (2015).

workers in other provinces are more likely to have above-median wages. Another limitation is that in this study we are not able to examine self-employment separately. The information on self-employment of the main job is only available in VHLSS before 2010³.

Table 1. Descriptive statistics

	Min	Max	Mean	SD	Observations
Demographic characteristics					
Female	0	1	0.505		146,370
Urban	0	1	0.282		146,370
Minority	0	1	0.181		146,370
Education	0	12	8.168	3.542	146,370
Employment					
Employment	0	1	0.821		146,370
Employment in manufacturing	0	1	0.120		146,370
Employment in agriculture	0	1	0.397		146,370
Employment in the traded sector	0	1	0.539		146,370
Employment in the non-traded sector	0	1	0.282		146,370
Unemployment	0	1	0.006		97,604
Outside the labor force	0	1	0.175		97,604
Formal employment	0	1	0.177		146,370
Wage (in thousand VNDs)					
Average hourly wages	0.026	2,731.751	9.979	16.746	45,324
Average hourly wages in manufacturing	0.209	2,731.751	8.885	26.311	12,084
Average hourly wages in agriculture	0.204	89.566	6.915	5.192	6,095
Average hourly wages in the traded sector	0.204	2,731.751	8.625	20.837	20,382
Average hourly wages in the non-traded sector	0.026	621.983	11.086	12.332	24,942
Wages above the industry's median wage	0	1	0.513		45,324
Wages above the industry's median wage in manufacturing	0	1	0.510		12,084
Wages above the industry's median wage in agriculture	0	1	0.531		6,095
Wages above the industry's median wage in the traded sector	0	1	0.516		20,382
Wages above the industry's median wage in the non-traded sector	0	1	0.510		24,942

Source: Authors' calculation from the VHLSS in 2006-2016.

Notes: We restrict working population to individuals who age from 15 to 60. Summary statistics of the labour market outcomes are reported for the most time-consuming job of individuals. Employment is an indicator of being employed. Unemployment is an indicator of being unable to find a job. Outside the labour force is an indicator of being either at school, or doing housework, or being sick, or being too old, or being disabled. Formal employment is an indicator of working for a registered enterprise. Average hourly wages are calculated as the sum of wages/salaries and all other benefits (e.g., holiday, maternity, accident compensation, allowance, etc.) divided by the total working hours for the main job. Average hourly wages are converted to 2006 real prices using consumer price index collected from the GSO. Wages above the industry's median wage is an indicator of earning wages that are equal or higher than the industry's median wage.

³ Some studies examine self-employment ((Erten et al., 2019; McCaig & Pavcnik, 2015), because it is an important indicator of the labor market outcomes. Self-employed workers tend to have unstable employment and their rights are not protected by laws and labor regulations. McCaig & Pavcnik (2015) also use the VHLSS survey data, but they only use data before 2010, and the data on self-employment are available for that period.

Table 1 provides descriptive statistics of the sample in terms of the labor market outcomes, and individual demographic characteristics. Our sample includes 146,370 individuals of whom 50.5% are female, 28.2% live in the urban area, 18.1% belong to ethnic minority groups. The average level of education is grade 8. In terms of employment outcomes, of the individuals in the sample, 82% are employed, 0.6% are unemployed, 17.5% are outside the labour force, and 17.7% work in the formal sector. Average hourly wages are calculated as the sum of wages/salaries and all other benefits (e.g., holiday, maternity, accident compensation, allowance, etc.) divided by the total working hours for the main job. Average hourly wages are converted to 2006 real prices using consumer price index collected from the GSO. Average hourly wages are the lowest in agriculture sector and the highest in the non-traded sector (at 6,900 VNDs and 11,100 VNDs, respectively). On average, 51.3% of wage workers in a province have wages that are above the industry's median wage.

We collect the data on import tariffs from the WTO database. Because the tariff data are available at the 6-digit HS level, we use the correspondence tables provided by the World Integrated Trade Solution (WITS) to convert the data at the 6-digit HS level to the 2-digit ISIC level (Revision 3). We then merge the data on tariff rates with the data collected from the VHLSS survey rounds.

2.2. Trends in Vietnam's labour market

Figure 1 illustrates the trends of total employment and employment by gender in Vietnam in 2006-2016. There is an upward movement in the share of total employment and employment for both men and women after the WTO entry in 2007. Total employment as a share of the working population increased from 80.1% to 83% in 2006-2016. The contribution of female employment in total employment is increasing over the period, from 39.8% in 2006 to 40.8% in 2016, but it is still smaller than that of male employment.

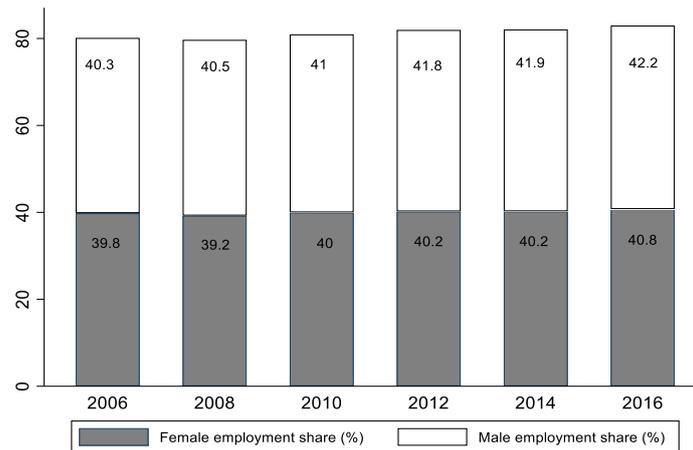


Figure 1. Composition of total employment share of working population by gender (%).

There is an upward trend in the share of employment after the WTO entry.

Source: Authors' calculation from the VHLSS in 2006-2016.

Notes: We restrict working population to individuals who age from 15 to 60. The grey bar represents the female employment share of working population and the white bar represents the male share of working population. Total employment share of working population is the sum of the female employment share of working population and the male employment share of working population.

The upward trend after the WTO entry can also be observed in the share of formal workers (i.e. workers employed by registered firms). As reported in Figure 2, the share of formal workers increases from 19.8% in 2006 to 28.8% in 2016. Although agriculture is the sector that constitutes a major share of employment to population, less than 2% of workers in this sector work for registered firms while more than 98% of workers in this sector work for households. A comparison of the traded and the non-traded sector show that the non-traded sector has a higher share of formal workers than the traded sector (at 39.4 % and 21.8%, respectively in 2016).

Figure 3 illustrates changes in hourly wage in 2006-2016. Average hourly wages are calculated as the sum of wages/salaries and all other benefits (e.g., holiday, maternity, accident compensation, allowance, etc.) divided by the total working hours for the main job. Average hourly wages are converted to 2006 real prices using consumer price index collected from the GSO. In all industries, average hourly wages nearly doubled over the period, from 7,000 VNDs in 2006 to 13,500 VNDs in 2016. Although there is an increase in wages across sectors over the period, we observe a discrepancy in wage among sectors. Wage is the lowest in agriculture and the highest in the non-traded sector (at 8,800 VNDs and 14,900 VNDs, respectively in 2016). The difference between wages in these 2 sectors are widening over the period.

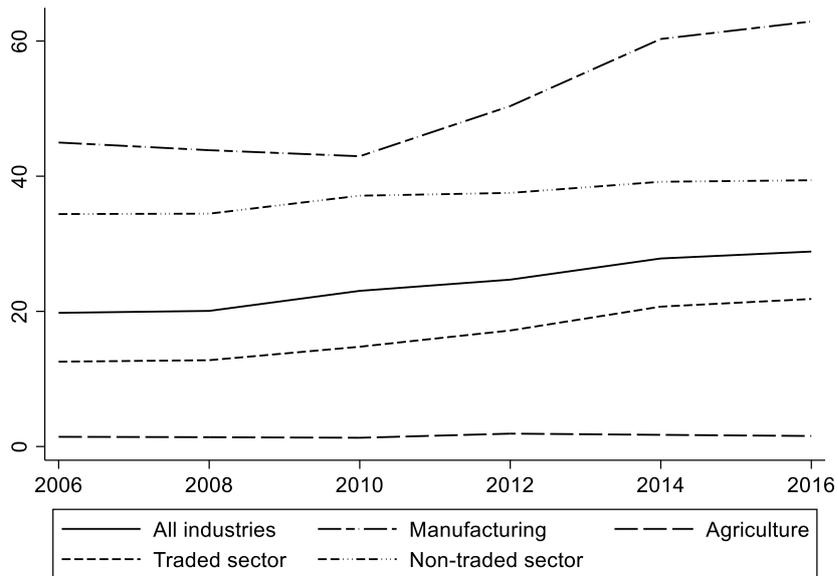


Figure 2. The share of workers in registered firms (%).

The share of workers in registered firms increases after the WTO entry.

Source: Authors' calculation from the VHLSS in 2006-2016.

Notes: The share of workers in registered firms is calculated by dividing the number of workers in registered firms by the total number of workers, then multiplying the result by 100.

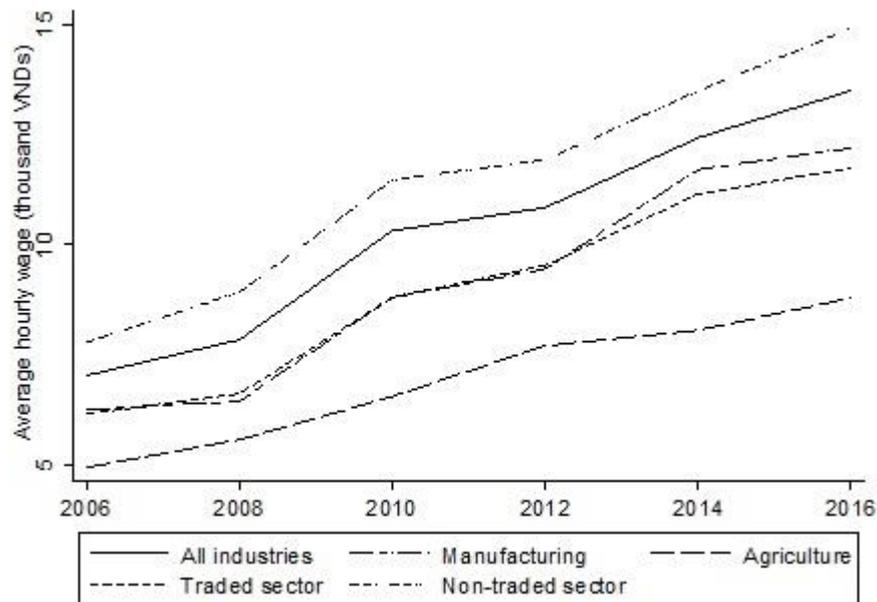


Figure 3. Average hourly wages in 2006-2016.

Average hourly wages nearly doubled from 2006 to 2016.

Source: Authors' calculation from the VHLSS in 2006-2016.

Notes: Average hourly wages are calculated as the sum of wages/salaries and all other benefits (e.g., holiday, maternity, accident compensation, allowance, etc.) divided by the total working hours for the main job. Average hourly wages are converted to 2006 real prices using consumer price index collected from the General Statistics Office.

3. WTO accession and the exogeneity of tariff reductions in Vietnam

Vietnam became a member of the WTO in 2007. As commitments with other WTO members, the country reduced most of its import tariffs from 2008, over a period of twelve years. The average tariff reduction is 23% in our sampled period.

Our identification strategy is based on the exogeneity of the tariff reductions after Vietnam’s accession to the WTO. If tariff reductions are endogenous, it is irrational to identify the causal relationship between the WTO accession and the labor market outcomes. There are several evidence supporting the exogeneity of the tariff reductions. First, Vietnam applied for joining WTO since 1995. According to Baccini et al. (2019), the country had a weak bargaining power in negotiating with other WTO members. The import tariffs therefore are reduced solely with an aim to meet the WTO’s requirement for accession. Figure A1 in the Appendix shows that before the WTO accession, tariff rates were stable, then dropped from 2008 in all sectors.

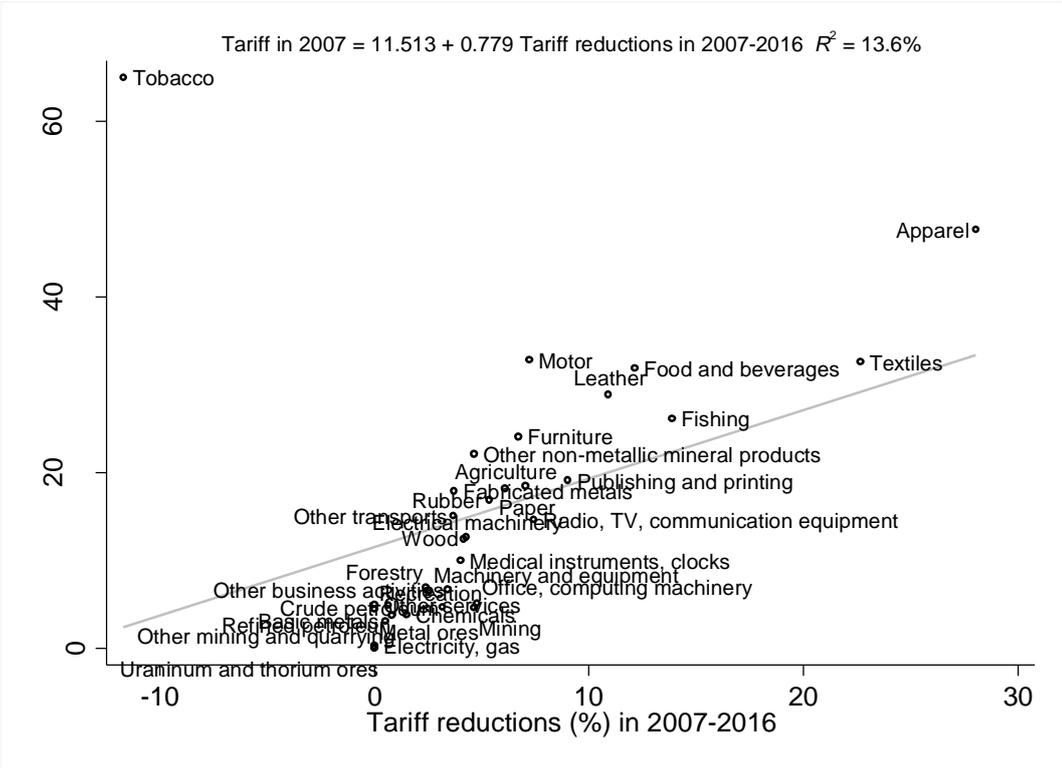


Figure 4. The correlation between tariff rates in 2007 and tariff reductions in 2007-2016.

Textiles and apparel have the highest tariff reductions after the WTO accession.

Notes: Tariff reductions are calculated as the difference between tariff rates in 2007 and tariff rates in 2016.

Source: Author’s calculations from the WTO database.

Second, we find a positive correlation between import tariffs in the year before the WTO accession and import tariff reductions after the WTO accession across industries. As can be seen in Figure 4, industries that have a high tariff in 2007 are industries that experience a great decrease in tariff in the period 2007-2016. Tobacco is the only exception when import tariff increased after the WTO accession⁴. The country's two main industries, namely textiles and apparel have the highest level of tariff rates in 2007 (32.6% and 47.6% respectively), and the reductions in tariff rates of these industries are also the highest in 2007-2016 (22.6% and 28% respectively). This finding once again supports our argument that tariff reductions in Vietnam since the WTO accession are implemented to lower the country's trade barriers and are independent of interest of any specific industry⁵.

Third, if the tariff reductions after the WTO accession are endogenous, they might relate to the previous trends of imports. Table A1 in the Appendix reports the estimates of the regression of the import tariff reductions in the period 2007-2016 and Vietnam's change in import values from the world and its main trading partners including the USA, the EU, China, Japan⁶ in 2000-2007. The coefficients are insignificant in all cases, indicating there is no correlation between the previous trends of imports and tariff reductions after the WTO accession.

Forth, at the regional level, we find no evidence of the relationship between labor market structure before the WTO accession and the tariff cut after that. Specifically, we regress tariff cut in 2006-2016 on the share of employment by industry across provinces in 2006. The estimate is positive but insignificant (Table A2), indicating that the change in tariff after the WTO accession is not determined by any regional group.

4. Methodology

4.1. Measurement of provincial tariffs

⁴ Before the WTO accession, imports of cigar, cheroots, cigarillos and cigarettes (HS code 2402) were prohibited in Vietnam. After 2007, imports of these products were allowed and a high import tariff was imposed in replacement for import prohibition. MFN tariff of tobacco industry increased from 65% to 77% in 2006-2016.

⁵ We acknowledge that presumably the size of the existing tariffs was proportional to the interest of the industry, in which case the tariff reductions would be endogenous. But this scenario is very unlikely to happen given the fact that Vietnam negotiated them with all the WTO member countries.

⁶ The data on the import value (in thousand US dollars) are collected from the World Integrated Trade Solution.

Following previous studies (Autor et al., 2013; Dix-carneiro & Kovak, 2019; Erten et al., 2019), we construct a measure of tariff at the province level accounting for the variation of the employment structures across industries and across provinces before the trade shock. Specifically, we use the share of employment in each industry in each province in 2006 as the weight of the industry's import tariff. The industrial employment share in each province in 2006 is calculated from the VHLSS round in 2006. The local tariff exposure is then the weighted average of all import tariffs. Following Kovak (2013), our calculation only covers the traded industries with the assumption that the non-traded prices change with the traded prices⁷.

$$Provincial\ tariff_{pt} = \sum_j Employment\ share_{jp,2006} * Tariff_{jt} \quad (1)$$

Where Provincial tariff_{pt} denotes the industrial employment weighted tariff of province p at time t; j denotes the traded-industry; Tariff_{jt} denotes the import tariff of industry j at time t; Employment_{jp,2006} is the share of employment of industry j in the total employment of province p in 2006, calculated as:

$$Employment\ share_{jp,2006} = \frac{Employment_{jp,2006}}{\sum_j Employment_{jp,2006}} \quad (2)$$

Figure 5 presents the map of 63 provinces in Vietnam with their corresponding local tariff exposure change in 2006-2016. The province which experiences the highest tariff reduction is Ho Chi Minh City (in the South, at 10.9%), and the lowest tariff reduction is observed in Thai Nguyen (in the North, at 6.2%). The average local tariff reduction across provinces after the WTO accession is 7.6%.

⁷ As argued by Kovak (2013), if we set tariffs of the non-traded sector as zero and include employment of this sector in our calculation of Employment_{jp,2006}, it means that we assume no price change for the non-traded goods. In this case, wages are not equalized between the traded and the non-traded sector. We can avoid this disequilibrium by removing the non-traded sector from the calculation of Employment_{jp,2006}, allowing for the non-traded price to grow by the same proportion to the traded price. Erten et al. (2019) applied the same approach in the calculation of district-level employment.

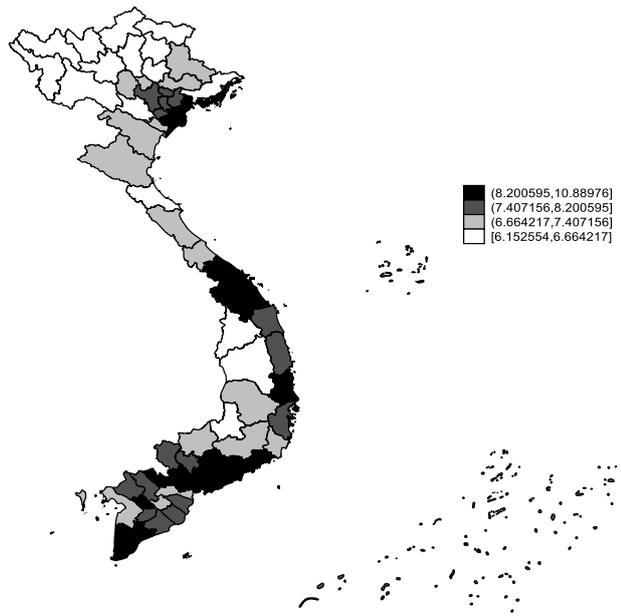


Figure 5. Provincial tariff reductions in 63 provinces in 2006-2016.

The average provincial tariff reduction is 7.6% in 2006-2016

Notes: This figure illustrates the provincial tariff reductions in Vietnam in 2006-2016. There are 4 levels of provincial tariff reductions, according to which the darker colors represent the higher level of provincial tariff reductions.

Source: The authors' calculation from the VHLSS and the WTO database.

4.2. Model specification

Our identification strategy is based on the variation of tariff exposure across provinces to compare the impacts of tariff reductions on the labor market outcomes among provinces with different levels of tariff exposure. Two individuals with similar characteristics can be affected differently because they come from two provinces with different levels of trade shock exposure. Two dimensions of differences emerge include the across-province differences in tariff exposure and the within-province differences in tariff exposure before and after the WTO accession. Hence, we use a difference in difference (DID) approach to track the impacts of tariff reductions across provinces. The model specification is constructed as follows:

$$Outcome_{ipt} = \beta_0 + \beta_1 Provincial\ tariff_{pt-1} + \beta_2 Provincial\ tariff_{pt-1} * Female_i + \beta_3 X_{ipt} + \beta_4 year + \beta_5 p + \varepsilon_{ipt} \quad (3)$$

Where $Outcome_{ipt}$ is the labour market outcomes of individual i in province p at time t in terms of employment (i.e., the indicator of an individual being employed); formal employment (i.e., the indicator of a worker working for a registered enterprise); unemployment (i.e., the indicator of a worker in the working age being unable to find a job); outside the labor force (i.e., the indicator of

an individual in the working age either being at school, or doing housework, or being sick, or being too old, or being disabled); wages (i.e., the average hourly wages of workers); the adequacy of wages (i.e., the indicator of an individual earning wage above the industry's median wage). X_{ipt} denotes individual characteristics, namely gender, age, age squared, education, indicator for urban or rural area, and ethnic minority indicator. A detailed explanation of variables is given in Table B1 in the Appendix. Time fixed effects and province fixed effects are included in the equation. A noteworthy point is that the respondents are asked about their work details within 12 months preceding the survey year, so the variable on provincial tariff is lagged 1 year. We also check for the robustness of the results by replacing the lagged value of tariff with the average of the lagged and current tariffs.

Because we are also interested in the difference in the impact of tariff reductions by gender, we interact provincial tariff exposure with a dummy on female. Thus, β_1 represents the impact of provincial tariff exposure on labor market outcomes for men, and β_2 represents the impact of provincial tariff exposure on the gender gap in labor market outcomes. Thus, the sum of β_1 and β_2 can be interpreted as the average marginal effect of tariff reductions on labor market outcomes for women. A negative sign of β_1 or the sum of β_1 and β_2 suggests a better labour outcome, while a positive sign of these coefficient suggests a worse labour outcome for individuals in exposed provinces relative to individuals in less exposed provinces. The linear probability model is employed to estimate the parameters in the model. Standard errors are clustered at province level.

5. Findings

5.1. Baseline findings

In this paper, we examine the impacts of import tariff reductions induced by Vietnam's accession to the WTO on the labor market. Panel A of Table 2 reports the estimates of employment. We find that tariff reductions mainly affect female employment. The estimates in column (1) suggest that trade liberalization has a negligible impact on economy-wide employment for both men and women. The coefficient of the interaction term between provincial tariff and the

gender dummy is negative in the column (3) and column (4), indicating a positive relationship between tariff reductions and female employment in agriculture and the traded sector. The positive relationship between trade liberalization and female employment in the traded sector is primarily driven by the agriculture sector (including agriculture, forestry and fishing). More than a half (52%) of labour in the agriculture sector are women, therefore it is reasonable that female employment in more-exposed provinces increases. The average tariff cut at regional level over the period 2006-2016 is 7.6 percentage points. Hence, a woman in a province facing an average tariff cut of 7.6 percent experienced about a 0.02 percentage-point increase in the probability of having a job in the traded sector [i.e., $7.6 * (-0.002) = -0.02$] compared to women in a province facing zero import tariff cuts in the traded sector. Our findings are in line with that of Kis-Katos et al. (2018) when trade liberalization improves employment for women, although the magnitude of the impacts in the context of Vietnam is relatively small.

Table 2. The impacts of the WTO accession on labor outcomes

	(1) All industries	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded
Panel A: Employment					
Provincial tariff	0.001 (0.002)	0.004 (0.004)	-0.007 (0.005)	-0.003 (0.003)	0.005* (0.003)
Provincial tariff*Female	-0.001 (0.001)	0 (0.001)	-0.002* (0.001)	-0.002* (0.001)	0.001 (0.001)
Observations	146370	146370	146370	146370	146370
R-squared	0.289	0.059	0.307	0.200	0.162
Panel B: Formality					
Provincial tariff	-0.009** (0.004)	-0.005 (0.011)	-0.002 (0.001)	-0.017*** (0.006)	-0.010** (0.004)
Provincial tariff*Female	-0.001 (0.001)	-0.003 (0.002)	0 (0)	-0.001 (0.001)	-0.001 (0.001)
Observations	120132	17586	58051	78912	41220
R-squared	0.221	0.239	0.039	0.230	0.251
Panel C: Unemployment and outside the labor force					
		(1) Unemployment	(2) Outside the labour force		
Provincial tariff		-0.001 (0.001)	0.001 (0.002)		
Provincial tariff*Female		0 (0)	0.001 (0.001)		
Observations		97604	97604		
R-squared		0.010	0.288		

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISCO industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISCO industries from 15 to 37. The traded sector includes all the 2-digit-ISCO industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISCO industries that are not import tariff-imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

The positive sign of the estimate in column (5) indicate a slight decline in the probability of having a job in the non-traded sector (i.e. the sector that is not imposed with a tariff rate) for both genders. While there is a small increase in the probability of being employed for women in the traded sector in provinces more exposed to tariff reductions, we also find evidence of a movement of workers of both genders from the non-traded sector to the traded sector.

In Panel B, we examine the impacts of tariff reductions on formal employment. The formal sector is defined as all registered firms while the informal sector is for household business. In terms of an economy-wide outcome, the probability of a worker working in the formal sector in provinces exposed to the average tariff decline is 0.07 percentage-points [i.e., $7.6 \times 0.009 = 0.07$] higher than that of a worker in provinces facing no tariff reduction. We also find a positive relationship between tariff reduction and the probability of working in the formal sector for both genders in both the traded and the non-traded sector. Because the coefficient of the interaction term between provincial tariff and gender is insignificant in all sectors, we find no evidence of the differential impact of tariff reductions on gender gap in terms of formality across provinces. Our findings on the positive changes in formal employment after trade liberalization are in line with that of McCaig & Pavcnik (2018) . However, we are examining trade liberalization from the angle of import tariff reductions. Although the magnitude of the positive impact on formal employment is relatively small, it is likely that the WTO accession enabled domestic enterprises to expand employment by lowering the cost of imported inputs.

Panel C reports the estimates of the impacts on unemployment and outside the labor force participation. Unfortunately, the survey in 2010 and 2012 did not ask for information of these two variables. We perform the analysis for years 2006, 2008, 2014, and 2016. Our findings in Panel C can be interpreted as a medium-term effect of the tariff reductions on unemployment and outside the labor force participation. In terms of unemployment, the coefficient of provincial tariff is negative and insignificant, suggesting no differential impacts of tariff reductions on unemployment across provinces. We also find no evidence of variation in the impacts of local tariff exposure in terms of probability of being outside the labor force.

Table 3. The impacts of the WTO accession on wages

	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded
Panel A: Wages in all sectors					
Provincial tariff	0.029*** (0.010)	0.052*** (0.014)	0.039 (0.036)	0.036** (0.015)	0.023** (0.011)
Provincial tariff*Female	-0.005*** (0.001)	-0.006* (0.003)	-0.003 (0.004)	-0.007*** (0.002)	-0.003 (0.003)
Observations	45,324	12,084	6,095	20,382	24,942
R-squared	0.275	0.301	0.200	0.279	0.261
Panel B: Wages in the formal sector					
Provincial tariff	0.031*** (0.011)	0.048*** (0.014)	0.090 (0.062)	0.033** (0.015)	0.028** (0.013)
Provincial tariff*Female	-0.001 (0.003)	-0.009*** (0.003)	0.033** (0.014)	-0.006** (0.003)	0.003 (0.003)
Observations	25,433	8,423	846	10,848	14,585
R-squared	0.265	0.304	0.400	0.305	0.242
Panel C: Wages in the informal sector					
Provincial tariff	0.031** (0.013)	0.045** (0.022)	0.051 (0.033)	0.049** (0.022)	0.020 (0.012)
Provincial tariff*Female	-0.004* (0.002)	0.011 (0.007)	-0.008** (0.004)	-0.002 (0.004)	-0.010** (0.004)
Observations	19,891	3,661	5,249	9,534	10,357
R-squared	0.219	0.328	0.186	0.204	0.224
Panel D: Wages above the industry's median wage in all sectors					
Provincial tariff	0.016** (0.007)	0.031*** (0.011)	0.050** (0.023)	0.028** (0.011)	0.007 (0.006)
Provincial tariff*Female	-0.003** (0.002)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.002)	-0.004* (0.003)
Observations	45,324	12,084	6,095	20,382	24,942
R-squared	0.114	0.170	0.141	0.132	0.131
Panel E: Wages above the industry's median wage in the formal sector					
Provincial tariff	0.011* (0.007)	0.022 (0.014)	0.047 (0.048)	0.018 (0.012)	0.006 (0.006)
Provincial tariff*Female	0.001 (0.002)	0 (0.003)	0.008 (0.008)	0.002 (0.003)	0 (0.002)
Observations	25,433	8,423	846	10,848	14,585
R-squared	0.120	0.168	0.312	0.153	0.146
Panel F: Wages above the industry's median wage in the informal sector					
Provincial tariff	0.024** (0.010)	0.047*** (0.017)	0.053** (0.023)	0.044** (0.018)	0.009 (0.010)
Provincial tariff*Female	-0.006** (0.002)	-0.004 (0.004)	-0.005 (0.004)	-0.006* (0.003)	-0.008* (0.004)
Observations	19,891	3,661	5,249	9,534	10,357
R-squared	0.109	0.188	0.132	0.125	0.124

Notes: The dependent variables in Panel A, Panel B, and Panel C are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel D, Panel E, and Panel F are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISCO industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISCO industries from 15 to 37. The traded sector includes all the 2-digit-ISCO industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISCO industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

We further investigate the link between tariff reductions and earning inequality across provinces. 37.7% of the observations report they work for wages for their main job. Average hourly wage is calculated as the sum of wage and all other benefits (e.g., holiday, maternity, accident compensation, allowance, etc.) divided by the total working hours for the job. Table 3 reports the estimates of the impacts. The pattern of the impacts is fairly consistent for both the formal and the informal sector. The positive sign of the coefficient on provincial tariff in column (1) of all the

three panels suggests a negative relationship between tariff reductions and wages in terms of the economy-wide wage outcome. The estimates in column (1) of Panel A show that wages of male workers in provinces exposed to an average tariff decline is 0.22 percentage-point-lower than those of male workers in provinces facing no tariff reduction [i.e., $7.6 \times 0.029 = 0.22$]. Manufacturing is the sector that suffers the biggest negative impacts. The impact on women is less severe than on men. Female workers in provinces exposed to an average tariff decline experience a 0.18 percentage-point decline in wages in comparison to female workers in provinces facing no tariff reduction [i.e., $7.6 \times (0.029 - 0.005) = 0.18$]. Furthermore, the impact is positive for women working for household business in the non-traded sector (column (5) of Panel C).

The negative impact of tariff reductions on earnings in provinces more exposed to the tariff reductions is not surprising given the fact that low labor cost is a big advantage of Vietnam in global competition. The minimum wages are set based on the recommendations of the National Wage Council, which is composed of representatives of employers, trade unions, and the government. Trade unions, which represent employees, have a voice in the negotiations but the nation's comparative advantage in labor cost definitely cannot be neglected. Since 1995, the minimum wages have been adjusted several times to secure the minimum living expenses for workers. Since 2009, the minimum wages have been determined at regional level, across four regions of different living standards in the country. Although many efforts have been made to increase the minimum wages for domestic workers, in comparison to some other ASEAN countries like Thailand, Malaysia, Philippines, the minimum wages of Vietnam still lag behind (ILO, 2014). In the later section of this study, we further uncover that trade liberalization improves wage for female low-skilled workers in provinces more exposed to tariff reductions. Our findings are in line with that of McCaig (2011) which points out the positive link between tariff reductions and low-skilled wages in Vietnam under the impact of the Vietnam-US BTA.

We try to analyse the adequacy of wages under the impact of tariff reductions. One approach could be examining the probability of having wages above the minimum wage. The obstacle is that the minimum wages in Vietnam are determined on a monthly basis while the VHLSS survey provides no information on monthly total working hours and only information on

hourly wage is available. We thus resort to examining the probability of having wages above the industry's median wage. The results are reported in Panel D, panel E, and panel F in Table 3. Panel D reports the estimates in both the formal and informal sectors, panel E reports the estimates in the formal sector, and panel F reports the estimates in the informal sector. Point estimates in column (1) in Panel D are positive and significant, indicating that employees in provinces more exposed to the tariff reductions have a lower probability of earning wages above the industry's median wage. This negative relationship is observed in the traded sector for both genders. The negative impacts are less severe on women than on men in all industries and the impacts are positive for women in the non-traded sector. The estimates in panel E and panel F further suggest that the difference in the impacts by gender is determined by the informal sector. There is no differential impacts on men and women in the formal sector, but in the informal sector, female workers have a higher probability of having wages above the industry's median wage in comparison to male workers.

Our findings suggest that the impacts of trade liberalization in the case of Vietnam mainly work through earnings rather than through employment. This mechanism is in contrast with that of Erten et al.(2019) for South African countries where the impacts on employment dominate. Pressure from import substitution and the strong advantage of the country in low wage labor force play a role in the detrimental effect of the import tariff cuts.

5.2. Heterogeneity

In this section, we further control for heterogeneity to get a closer look on the impacts of the WTO accession on the labour market in Vietnam. We account for the heterogeneity at both the individual level and the province level.

5.2.1. Age

In terms of age, we divide the sample into 2 groups: below 30 years-old and above 30 years-old. The estimates of the impact of the WTO accession on employment outcomes by age cohort are reported in Table 4. It can be observed from Panel A in Table 4 that the positive impacts of tariff reductions on employment for women are driven by the older-age cohort. For the younger

age cohort, women in more exposed provinces suffer job losses in the manufacturing sector. For the older age cohort, workers in more exposed provinces have a higher probability of being employed in the traded sector and a lower probability of being employed in the non-traded sector.

The estimates reported in Panel B of Table 4 shows that workers of both age cohorts in more exposed provinces gain an increase in the probability of working in the formal sector. Panel C reports the impact of the tariff cuts on unemployment and outside the labor force. We find no differential impacts across provinces for the probability of being unemployed for both age cohorts. In terms of non-labor force participation, women in more exposed provinces have a lower probability of being outside the labor force.

The estimates of the impacts on wages are reported in Table 5. Panel A shows that wages for workers of both age cohorts in provinces more exposed to tariff reductions decline, and the negative impact is less severe for female worker of the younger-age cohort. The similar pattern of the impacts is observed in the formal sector, as reported in Panel B. Both men and women in more exposed provinces experience a decrease in wages of a similar magnitude in the informal sector, as reported in Panel C. However, in column (10) of Panel C, the coefficient of the interaction term between female and tariff negative and significant, suggesting a growth in wages for women of the older age cohort working in household business in the non-traded sector. The results in Panel D, Panel E, and Panel F show that economy-wide, there is a decrease in the probability of earning wages above the industry's median wage of workers of both age cohorts in all sectors, and in the informal sector in the more trade-liberalized provinces. However, the impact does not vary across provinces in the formal sector. Comparing the magnitude of the negative effects on wages between the two age cohorts, we find that it is smaller for the older age one⁸. Thus, trade liberalization favors women of the older age cohort in terms of both employment and earnings.

5.2.2. Skill levels

⁸ We perform the same regression on pooled data for both age cohorts, including interaction terms with age cohort, to directly compare the magnitude of the impacts on the two age cohorts. The coefficients on the interactions terms are negative and statistically significant at the 1% level.

Table 6 reports the estimates of the impacts on employment outcomes by skill levels. Low skilled workers are those having less than 10 years of education, and high skilled workers are defined as those having at least 10 years of education. In terms of employment, the results in Panel A show that for economy-wide employment, low-skilled female workers in the more exposed provinces have a higher probability of being employed, while the impact of tariff reductions on low-skilled male workers and high-skilled workers of both genders is insignificant. It can be observed from Panel B that low-skilled workers in provinces more exposed to tariff reductions have a higher probability of having a job in the formal sector. For high-skilled worker, the positive effect of trade liberalization is only observed in column (7) for women in manufacturing. The estimates reported in column (1) and column (3) in Panel C suggest that there is no differential impacts of tariff reductions on unemployment for both low-skilled and high-skilled workers. However, we find an increase in the probability of being outside the labor force for low-skilled workers.

The estimates of the impact on wages are reported in Table 7. It can be observed from Panel A that low-skilled female workers in the more exposed provinces gain a growth in economy-wide wages and in wages of the traded sector, while high-skilled workers of both genders in those provinces experience a decline in wages. When we examine the formal and the informal sector separately, the estimates in Panel B show that the negative impact is only found in the case of high-skilled workers in the formal sector, while the impact on low-skilled workers in the formal sector is insignificant. In Panel C, we observe an increase in wages for low-skilled female women working for households in the non-traded sectors in the more trade-liberalized provinces. In terms of the adequacy of wages, from Panel D, Panel E and Panel F we find a decline in the probability of earning wages above the industry's median wage for both low-skilled and high-skilled workers in all sectors and in the formal sector in more tariff exposed provinces. However, in the economy-wide context, low-skilled women working in the informal sectors in these provinces have a higher probability of earning wages above the industry's median wage.

5.2.3. Urban location

The estimates of the impacts on employment outcomes by urban location are reported in Table 8. In terms of employment, the results in Panel A show that the tariff reductions only benefit women located in the urban area of the more exposed provinces. However, the increase in the probability of being employed for female workers is driven by the agriculture sector (because in urban area, the coefficient on the interaction term between provincial tariffs and the female dummy is negative and significant in column (6) and column (8) of Panel A in Table 8). As shown in Panel B, while the probability of working in the formal sector only increases for female workers in the rural area, it rises for both genders in the urban area in all industries. The estimates reported in column (1) and column (3) of Panel C indicate a growth in the probability of being unemployed for both men and women in the rural area of the more trade-liberalized provinces. In column (2) and column (4) of Panel C, we observe a decrease in the probability of being outside the labor force for women in the urban area.

Table 9 reports the estimates of the impacts on wage outcomes. In Panel A we observe that female workers in the rural area of the more exposed provinces experience a wage gain in the economy-wide setting. In the urban area of these provinces, the impact of the tariff reductions on wages is negative and significant for both genders. For the formal sector, the results in Panel B suggest a decline in wages for workers in the economy-wide setting in both locations of the more exposed provinces. For the informal sector, the impact is negative for urban workers, while it is insignificant for rural workers. Panel D, Panel E, and Panel F report the estimates of the impacts on the adequacy of wages. The results in Panel D suggest a decrease in the probability of earning wages above the industry's median wage in all sectors for workers in both the rural and the urban areas. We find no differential impacts of tariff reductions on the adequacy of wages in the formal sector in urban areas, while the impact is negative for rural workers in more exposed provinces, as reported in Panel E. The estimates in Panel F suggest that rural female workers in more exposed provinces have a higher probability of earning wages above the industry's median wage in the informal sector.

5.2.4. Foreign direct investment at the province level

Table 10 reports the impacts by FDI inflows on employment outcomes at the province level. In Panel A, we find no differential effects on tariff reductions on the probability of being employed in all industries in provinces with a below-median level of FDI. Conversely, in provinces with a from-median level of FDI, women have a higher probability of being employed. In terms of formality, in Panel B, for the more exposed provinces with a below-median level of FDI we only find a significant increase in the probability of working for registered enterprises in the non-traded sectors. For the the provinces with an above -median level of FDI inflows, the probability of being employed in the formal sector is higher for workers in the trade-exposed provinces. In Panel C, we find no evidence of the differential impacts of tariff reduction on unemployment and outside the labor force in both groups of provinces.

In terms of wage outcomes, the estimates in Panel A of Table 11 show that trade liberalization decreases wages in the more exposed provinces regardless of FDI levels. However, the negative impact is of a smaller magnitude for women than for men in provinces with an above-median level of FDI. Besides, magnitude of the negative impact is smaller for provinces with higher levels of FDI inflows⁹. In Panel B and Panel C of Table 11, we also find a decrease in wages for both genders in both the formal and informal sectors. In Panel D, Panel E, and Panel F of Table 11, we find a decline in the probability of earning wages above the industry's median wage for workers in all sectors and the formal sector in more exposed provinces regardless of their FDI level. However, in the informal sector, the probability of earning wages above the industry's median wage increases for female workers in more exposed provinces where the level of FDI is above the median level. These findings are indicative of the spillovers of FDI on the link between the tariff reductions and labor outcomes.

5.2.5. Share of female employment in 2006

The impacts of tariff reductions on employment outcomes by the initial gender structure of employment at the province level are reported in Table 12. The estimates in Panel A show that

⁹ We perform the same regression on pooled data for both groups of provinces, including interaction terms with the level of FDI inflows, to directly compare the magnitude of the impacts on the two groups. The coefficients on the interactions terms are negative and statistically significant at the 1% level at least.

tariff reductions have no differential impact on the probability of being employed in the economy-wide setting, regardless of the province's initial share of female employment. In Panel B, we only observe an increase in the probability of working for registered enterprises in the traded sectors for workers in the more exposed provinces with a below-median level of initial female employment. We also find no differential impact of tariff reductions on unemployment and non-labor force participation as shown in Panel C.

Table 13 reports the estimates of the impacts of tariff reductions on wage outcomes. In terms of wages, Panel A, Panel B, and Panel C show that in the economy-wide setting, workers in the more trade-liberalized provinces with a low initial share of female employment experiences a decline in wages. A female worker in the more exposed provinces with a high initial share of female employment experiences a wage gain, and this gain is driven by the informal sector (because the coefficient of the provincial tariffs and female dummy is negative in the informal sector). In terms of the adequacy of wages, it is observed from Panel D that in all sectors the probability of earning wages above the industry's median wage decreases for workers in more exposed provinces regardless of their initial share of female employment. However, the magnitude of the negative impact is smaller for women than for men in provinces with a higher initial share of female employment. The similar trend of the impact is observed in the informal sector, as reported in Panel F. The estimates in Panel E show no differential impacts across genders in the formal sector.

Table 4. Employment outcomes by age cohort

	Age below 30					Age above 30				
	(1) All	(2) Manufacturing	(3) Agriculture	(5) Traded	(6) Non-traded	(7) All	(8) Manufacturing	(9) Agriculture	(11) Traded	(12) Non-traded
Panel A: Employment										
Provincial tariff	0.005 (0.004)	0.006 (0.004)	-0.006 (0.006)	0.001 (0.005)	0.004 (0.004)	0.001 (0.002)	0.002 (0.005)	-0.007 (0.005)	-0.007** (0.003)	0.008*** (0.003)
Provincial tariff*Female	0 (0.001)	0.003*** (0.001)	-0.002 (0.001)	0 (0.001)	0 (0.001)	-0.002** (0.001)	-0.002** (0.001)	-0.002* (0.001)	-0.004*** (0.001)	0.002* (0.001)
Observations	56857	56857	56857	56857	56857	89513	89513	89513	89513	89513
R-squared	0.323	0.092	0.342	0.246	0.146	0.087	0.054	0.284	0.174	0.156
Panel B: Formality										
Provincial tariff	-0.015* (0.008)	-0.006 (0.022)	-0.005* (0.002)	-0.020* (0.012)	-0.015* (0.008)	-0.008* (0.004)	-0.007 (0.009)	0 (0.001)	-0.018** (0.007)	-0.010** (0.005)
Provincial tariff*Female	0 (0.001)	-0.007** (0.003)	0.001 (0.001)	0 (0.001)	0 (0.003)	-0.001* (0.001)	-0.003 (0.003)	0 (0)	-0.001 (0.001)	-0.002 (0.001)
Observations	37025	7362	17596	26134	10891	83107	10224	40455	52778	30329
R-squared	0.259	0.212	0.040	0.288	0.266	0.226	0.219	0.042	0.212	0.260
Panel C: Unemployment and outside the labor force										
		(1) Unemployment	(2) Outside the labor force			(1) Unemployment	(2) Outside the labor force			
Provincial tariff		-0.002 (0.001)	-0.003 (0.006)			-0.001 (0.001)	0 (0.002)			
Provincial tariff*Female		0 (0)	-0.001 (0.001)			0 (0)	0.002** (0.001)			
Observations		37577	37577			60027	60027			
R-squared		0.013	0.330			0.005	0.088			

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISIC industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISIC industries from 15 to 37. The traded sector includes all the 2-digit-ISIC industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISIC industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 5. Wage outcomes by age cohort

	Age below 30					Age above 30				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Wages in all sectors										
Provincial tariff	0.037*** (0.012)	0.053*** (0.017)	0.008 (0.057)	0.046** (0.020)	0.027** (0.011)	0.023** (0.010)	0.052*** (0.011)	0.058* (0.032)	0.028** (0.013)	0.018 (0.013)
Provincial tariff*Female	-0.009*** (0.002)	-0.006 (0.004)	-0.014* (0.008)	-0.012*** (0.003)	-0.005 (0.004)	-0.002 (0.002)	-0.010** (0.005)	0.004 (0.004)	-0.005 (0.003)	0 (0.004)
Observations	17371	6155	2183	9168	8203	27953	5929	3912	11214	16739
R-squared	0.236	0.268	0.217	0.248	0.233	0.286	0.358	0.21	0.314	0.257
Panel B: Wages in the formal sector										
Provincial tariff	0.033** (0.014)	0.037* (0.020)	-0.139 (0.150)	0.037* (0.020)	0.029** (0.012)	0.027** (0.013)	0.062*** (0.013)	0.164** (0.068)	0.031* (0.016)	0.025 (0.017)
Provincial tariff*Female	-0.005* (0.003)	-0.008** (0.003)	0.023 (0.023)	-0.008** (0.003)	0.001 (0.005)	0.001 (0.004)	-0.015** (0.006)	0.033* (0.019)	-0.009 (0.006)	0.005 (0.004)
Observations	9877	4597	216	5348	4529	15556	3826	630	5500	10056
R-squared	0.230	0.270	0.540	0.279	0.217	0.249	0.342	0.417	0.315	0.223
Panel C: Wages in the informal sector										
Provincial tariff	0.041*** (0.013)	0.080*** (0.027)	0.034 (0.049)	0.065*** (0.024)	0.024* (0.014)	0.028** (0.014)	0.028 (0.024)	0.068** (0.029)	0.044** (0.019)	0.021 (0.015)
Provincial tariff*Female	-0.005 (0.004)	0.015 (0.009)	-0.018** (0.007)	-0.004 (0.006)	-0.009 (0.006)	-0.003 (0.007)	0.005 (0.008)	-0.003 (0.004)	-0.002 (0.004)	-0.010** (0.005)
Observations	7494	1558	1967	3820	3674	12397	2103	3282	5714	6683
R-squared	0.206	0.298	0.210	0.195	0.240	0.233	0.387	0.193	0.227	0.214
Panel D: Wages above the industry's median wage in all sectors										
Provincial tariff	.022** (.011)	.036** (.015)	.042 (.038)	.031* (.016)	.011 (.009)	.011** (.006)	.027*** (.009)	.06*** (.019)	.025*** (.009)	.003 (.007)
Provincial tariff*Female	-.006*** (.002)	-.007** (.003)	-.016** (.007)	-.009*** (.003)	-.004 (.003)	-.002 (.002)	-.004 (.004)	.005 (.004)	0 (.002)	-.004 (.003)
Observations	17371	6155	2183	9168	8203	27953	5929	3912	11214	16739
R-squared	.106	.156	.17	.123	.128	.107	.207	.144	.147	.103
Panel E: Wages above the industry's median wage in the formal sector										
Provincial tariff	0.013 (0.012)	0.020 (0.021)	-0.035 (0.103)	0.014 (0.018)	0.010 (0.011)	0.007 (0.005)	0.023** (0.012)	0.063 (0.058)	0.018* (0.010)	0.002 (0.007)
Provincial tariff*Female	0 (0.003)	-0.004 (0.004)	0.005 (0.021)	-0.002 (0.003)	0.002 (0.004)	0.001 (0.003)	0.001 (0.004)	0.010 (0.011)	0.003 (0.004)	-0.001 (0.003)
Observations	9877	4597	216	5348	4529	15556	3826	630	5500	10056
R-squared	0.118	0.156	0.479	0.144	0.145	0.108	0.200	0.349	0.165	0.117
Panel F: Wages above the industry's median wage in the informal sector										
Provincial tariff	0.033*** (0.012)	0.060** (0.029)	0.044 (0.037)	0.056** (0.024)	0.013 (0.013)	0.021* (0.011)	0.037** (0.015)	0.067*** (0.021)	0.040*** (0.015)	0.010 (0.014)
Provincial tariff*Female	-0.011*** (0.003)	-0.008 (0.006)	-0.019** (0.008)	-0.014*** (0.005)	-0.009* (0.005)	-0.004 (0.003)	-0.005 (0.005)	0.003 (0.004)	-0.001 (0.003)	-0.008 (0.005)
Observations	7494	1558	1967	3820	3674	12397	2103	3282	5714	6683
R-squared	0.106	0.162	0.165	0.124	0.140	0.105	0.235	0.139	0.139	0.103

Notes: The dependent variables in Panel A, Panel B, and Panel C are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel D, Panel E, and Panel F are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISC industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISC industries from 15 to 37. The traded sector includes all the 2-digit-ISC industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISC industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 6. Employment outcomes by skill level

	Low skills					High skills				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Employment										
Provincial tariff	0.004 (0.003)	0.006 (0.006)	-0.004 (0.007)	0.001 (0.005)	0.002 (0.004)	0.003 (0.004)	-0.001 (0.003)	-0.003 (0.004)	-0.002 (0.004)	0.005 (0.005)
Provincial tariff*Female	-0.002*** (0.001)	0 (0.001)	-0.004** (0.002)	-0.004*** (0.002)	0.002 (0.001)	0 (0.001)	0.001 (0.001)	-0.001 (0.001)	0 (0.001)	0.001 (0.001)
Observations	92791	92791	92791	92791	92791	53579	53579	53579	53579	53579
R-squared	0.163	0.076	0.246	0.147	0.122	0.423	0.057	0.192	0.109	0.236
Panel B: Formality										
Provincial tariff	-0.009*** (0.003)	-0.013 (0.010)	-0.001 (0.001)	-0.013** (0.006)	-0.013*** (0.005)	-0.007 (0.005)	0.006 (0.018)	-0.006 (0.005)	-0.018 (0.011)	-0.010 (0.007)
Provincial tariff*Female	0 (0.001)	-0.002 (0.002)	0 (0)	-0.001 (0.001)	0.001 (0.001)	-0.002 (0.002)	-0.007** (0.004)	0 (0.002)	-0.002 (0.002)	-0.002 (0.002)
Observations	82973	11137	48687	61331	21642	37159	6449	9364	17581	19578
R-squared	0.082	0.221	0.033	0.150	0.062	0.170	0.185	0.075	0.284	0.116
Panel C: Unemployment and outside the labor force										
		(1) Unemployment	(2) Outside the labor force	(3) Unemployment	(4) Outside the labor force					
Provincial tariff		-0.001 (0.001)	-0.004* (0.002)	-0.001 (0.001)	0.002 (0.004)					
Provincial tariff*Female		0 (0)	0.002** (0.001)	0 (0)	0 (0.001)					
Observations		61837	61837	35767	35767					
R-squared		0.011	0.161	0.010	0.427					

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISCO industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISCO industries from 15 to 37. The traded sector includes all the 2-digit-ISCO industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISCO industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 7. Wage outcomes by skill level

	Low skills					High skills				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Wages in all sectors										
Provincial tariff	0.010 (0.015)	0.041* (0.022)	0.022 (0.040)	0.023 (0.021)	-0.003 (0.016)	0.041*** (0.011)	0.067*** (0.015)	0.107 (0.077)	0.054*** (0.018)	0.033*** (0.012)
Provincial tariff*Female	-0.003* (0.002)	-0.001 (0.004)	-0.005 (0.004)	-0.005* (0.003)	-0.004 (0.004)	-0.004 (0.003)	-0.004 (0.004)	0.015 (0.015)	-0.011*** (0.003)	0 (0.004)
Observations	23954	7129	5385	13373	10581	21370	4955	710	7009	14361
R-squared	0.199	0.256	0.198	0.205	0.199	0.248	0.304	0.282	0.307	0.230
Panel B: Wages in the formal sector										
Provincial tariff	-0.005 (0.016)	0.034 (0.024)	-0.032 (0.095)	0.003 (0.021)	-0.012 (0.024)	0.039*** (0.012)	0.062*** (0.015)	0.128 (0.112)	0.050** (0.020)	0.031** (0.013)
Provincial tariff*Female	0.001 (0.004)	-0.005 (0.005)	0.024 (0.018)	-0.001 (0.005)	0.009 (0.007)	-0.003 (0.003)	-0.016*** (0.004)	0.033 (0.022)	-0.014*** (0.004)	0.003 (0.004)
Observations	7865	4268	515	5215	2650	17568	4155	331	5633	11935
R-squared	0.183	0.253	0.467	0.239	0.167	0.251	0.318	0.468	0.327	0.229
Panel C: Wages in the informal sector										
Provincial tariff	0.025 (0.016)	.049 (0.030)	0.046 (0.034)	0.048** (0.024)	0.007 (0.016)	0.053*** (0.016)	0.051 (0.039)	0.096 (0.127)	0.050 (0.036)	0.054*** (0.018)
Provincial tariff*Female	-0.003 (0.002)	0.013* (0.007)	-0.009** (0.004)	-0.003 (0.004)	-0.010** (0.004)	-0.005 (0.004)	0.008 (0.010)	0.011 (0.025)	0.006 (0.008)	-0.013* (0.007)
Observations	16089	2861	4870	8158	7931	3802	800	379	1376	2426
R-squared	0.228	0.336	0.191	0.205	0.253	0.188	0.360	0.333	0.248	0.175
Panel D: Wages above the industry's median wage in all sectors										
Provincial tariff	0.012 (0.010)	0.021* (0.013)	0.041 (0.026)	0.024* (0.014)	0.001 (0.010)	0.017*** (0.006)	0.045*** (0.015)	0.090* (0.053)	0.035** (0.013)	0.008 (0.007)
Provincial tariff*Female	-0.001 (0.002)	-0.001 (0.004)	-0.005 (0.003)	-0.003 (0.003)	-0.002 (0.004)	-0.005** (0.002)	-0.006* (0.004)	0.005 (0.012)	-0.004 (0.003)	-0.004* (0.002)
Observations	23954	7129	5385	13373	10581	21370	4955	710	7009	14361
R-squared	0.102	0.156	0.143	0.124	0.109	0.134	0.172	0.222	0.150	0.151
Panel E: Wages above the industry's median wage in the formal sector										
Provincial tariff	-0.003 (0.011)	0.004 (0.017)	0.031 (0.061)	0.004 (0.014)	-0.009 (0.013)	0.014** (0.007)	0.042** (0.018)	-0.034 (0.077)	0.029* (0.015)	0.006 (0.006)
Provincial tariff*Female	0.009** (0.003)	0.001 (0.005)	-0.002 (0.011)	0.005 (0.004)	0.013* (0.007)	-0.003 (0.002)	-0.004 (0.004)	0.008 (0.016)	-0.003 (0.003)	-0.002 (0.002)
Observations	7865	4268	515	5215	2650	17568	4155	331	5633	11935
R-squared	0.117	0.159	0.397	0.155	0.114	0.137	0.179	0.406	0.159	0.161
Panel F: Wages above the industry's median wage in the informal sector										
Provincial tariff	0.022 (0.013)	0.050*** (0.017)	0.048* (0.025)	0.043** (0.019)	0.006 (0.015)	0.030** (0.012)	0.044 (0.032)	0.186** (0.076)	0.053* (0.027)	0.018 (0.018)
Provincial tariff*Female	-0.005* (0.002)	-0.002 (0.005)	-0.005 (0.004)	-0.005 (0.003)	-0.007 (0.005)	-0.009** (0.004)	-0.008 (0.008)	0.001 (0.018)	-0.005 (0.007)	-0.011 (0.007)
Observations	16089	2861	4870	8158	7931	3802	800	379	1376	2426
R-squared	0.111	0.208	0.137	0.133	0.126	0.124	0.189	0.231	0.138	0.148

Notes: The dependent variables in Panel A, Panel B, and Panel C are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel D, Panel E, and Panel F are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISIC industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISIC industries from 15 to 37. The traded sector includes all the 2-digit-ISIC industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISIC industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 8. Employment outcomes by urban location

	Rural					Urban				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Employment										
Provincial tariff	0.004 (0.004)	0.001 (0.007)	-0.002 (0.009)	-0.001 (0.005)	0.005 (0.004)	0.002 (0.002)	0 (0.003)	0.001 (0.003)	0 (0.004)	0.002 (0.003)
Provincial tariff*Female	0 (0.001)	0 (0.001)	-0.002 (0.002)	-0.002 (0.002)	0.002** (0.001)	-0.003** (0.001)	0.001 (0.001)	-0.002** (0.001)	-0.001 (0.001)	-0.002 (0.002)
Observations	105051	105051	105051	105051	105051	41319	41319	41319	41319	41319
R-squared	0.271	0.071	0.224	0.143	0.107	0.329	0.052	0.162	0.077	0.140
Panel B: Formality										
Provincial tariff	-0.008 (0.005)	-0.004 (0.016)	-0.001 (0.001)	-0.015** (0.007)	-0.005 (0.010)	-0.012*** (0.004)	-0.012 (0.012)	-0.004 (0.005)	-0.021*** (0.007)	-0.011* (0.006)
Provincial tariff*Female	-0.002* (0.001)	-0.004 (0.003)	0 (0)	-0.001 (0.001)	-0.003** (0.001)	0.002 (0.002)	-0.001 (0.003)	0.002 (0.002)	0.002 (0.002)	0.001 (0.002)
Observations	88877	11863	53259	66624	22253	31255	5723	4792	12288	18967
R-squared	0.142	0.265	0.041	0.152	0.229	0.231	0.217	0.074	0.279	0.258
Panel C: Unemployment and outside the labor force										
		(1) Unemployment	(2) Outside the labor force	(3) Unemployment	(4) Outside the labor force					
Provincial tariff		-0.001* (0)	-0.004 (0.004)	-0.001 (0.002)	0.001 (0.002)					
Provincial tariff*Female		0 (0)	-0.001 (0.001)	0 (0)	0.003** (0.001)					
Observations		70216	70216	27388	27388					
R-squared		0.007	0.274	0.013	0.324					

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISIC industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISIC industries from 15 to 37. The traded sector includes all the 2-digit-ISIC industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISIC industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 9. Wage outcomes by urban location

	Rural					Urban				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	All	Manufacturing	Agriculture	Traded	Non-traded	All	Manufacturing	Agriculture	Traded	Non-traded
Panel A: Wages in all sectors										
Provincial tariff	0.020 (0.014)	0.042 (0.027)	0.023 (0.037)	0.026 (0.023)	0.011 (0.013)	0.031** (0.012)	0.054*** (0.013)	0.119** (0.057)	0.043** (0.017)	0.025* (0.014)
Provincial tariff*Female	-0.005*** (0.002)	-0.006 (0.004)	-0.003 (0.004)	-0.007** (0.003)	-0.003 (0.004)	-0.005** (0.002)	-0.005 (0.004)	-0.002 (0.012)	-0.007 (0.004)	-0.003 (0.002)
Observations	27680	7907	5315	14180	13500	17644	4177	780	6202	11442
R-squared	0.188	0.251	0.198	0.204	0.176	0.321	0.367	0.284	0.364	0.308
Panel B: Wages in the formal sector										
Provincial tariff	0.029* (0.015)	0.033 (0.032)	0.068 (0.078)	0.014 (0.026)	0.037** (0.018)	0.030* (0.015)	0.054*** (0.014)	0.153 (0.197)	0.042** (0.020)	0.022 (0.018)
Provincial tariff*Female	-0.001 (0.003)	-0.010*** (0.004)	0.033** (0.014)	-0.006* (0.003)	0.002 (0.005)	-0.001 (0.003)	-0.008 (0.005)	-0.001 (0.051)	-0.008 (0.005)	0.003 (0.003)
Observations	12974	5258	705	6542	6432	12459	3165	141	4306	8153
R-squared	0.176	0.234	0.412	0.223	0.172	0.291	0.370	0.582	0.370	0.261
Panel C: Wages in the informal sector										
Provincial tariff	0.019 (0.015)	0.048 (0.033)	0.042 (0.031)	0.049** (0.024)	-0.011 (0.014)	0.052*** (0.015)	0.050* (0.026)	0.132** (0.060)	0.061** (0.026)	0.046*** (.017)
Provincial tariff*Female	-0.002 (0.003)	0.014 (0.009)	-0.008* (0.004)	-0.001 (0.004)	-0.011** (0.005)	-0.008** (0.003)	0.007 (0.008)	-0.006 (0.014)	-0.002 (0.006)	-0.012** (0.005)
Observations	14706	2649	4610	7638	7068	5185	1012	639	1896	3289
R-squared	0.219	0.335	0.182	0.202	0.224	0.254	0.363	0.267	0.265	0.265
Panel D: Wages above the industry's median wage in all sectors										
Provincial tariff	0.022* (0.011)	0.026 (0.020)	0.046** (0.023)	0.036** (0.016)	0.005 (0.012)	0.013* (0.006)	0.038*** (0.009)	0.079 (0.062)	0.026** (0.012)	0.006 (0.007)
Provincial tariff*Female	-0.005** (0.002)	-0.003 (0.003)	-0.005 (0.004)	-0.004 (0.003)	-0.008* (0.004)	-0.002 (0.002)	-0.004 (0.004)	0.007 (0.011)	-0.002 (0.004)	-0.002 (0.002)
Observations	27680	7907	5315	14180	13500	17644	4177	780	6202	11442
R-squared	0.082	0.140	0.140	0.113	0.085	0.150	0.217	0.220	0.169	0.162
Panel E: Wages above the industry's median wage in the formal sector										
Provincial tariff	0.023* (0.014)	0.017 (0.027)	0.032 (0.057)	0.022 (0.022)	0.031** (0.015)	0.006 (0.006)	0.033** (0.013)	0.099 (0.144)	0.022* (0.012)	-0.004 (0.007)
Provincial tariff*Female	0 (0.003)	0 (0.004)	0.007 (0.009)	0.003 (0.003)	-0.004 (0.004)	0.001 (0.003)	-0.001 (0.004)	0.007 (0.033)	0 (0.005)	0.002 (0.003)
Observations	12974	5258	705	6542	6432	12459	3165	141	4306	8153
R-squared	0.078	0.139	0.317	0.136	0.085	0.138	0.219	0.502	0.178	0.151
Panel F: Wages above the industry's median wage in the informal sector										
Provincial tariff	0.019 (0.013)	0.036 (0.029)	0.054** (0.022)	0.050*** (0.018)	-0.017 (0.017)	0.034*** (0.012)	0.058** (0.024)	0.092 (0.064)	0.044* (0.025)	0.033** (0.013)
Provincial tariff*Female	-0.005** (0.003)	-0.002 (0.006)	-0.007* (0.004)	-0.005 (0.004)	-0.009* (0.005)	-0.006* (0.004)	-0.008 (0.007)	0.009 (0.013)	-0.004 (0.006)	-0.008* (0.005)
Observations	14706	2649	4610	7638	7068	5185	1012	639	1896	3289
R-squared	0.106	0.193	0.129	0.126	0.122	0.146	0.237	0.240	0.172	0.164

Notes: The dependent variables in Panel A, Panel B, and Panel C are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel D, Panel E, and Panel F are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISIC industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISIC industries from 15 to 37. The traded sector includes all the 2-digit-ISIC industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISIC industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 10. Employment outcomes by FDI level

	Below-median level					Above-median level				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Employment										
Provincial tariff	-0.004 (0.004)	-0.003 (0.008)	-0.015 (0.010)	-0.016*** (0.006)	0.012*** (0.005)	0.004 (0.003)	0.004 (0.003)	0 (0.004)	0.003 (0.003)	0 (0.003)
Provincial tariff*Female	-0.001 (0.002)	0.001 (0.001)	-0.003 (0.002)	-0.003 (0.002)	0.002 (0.001)	-0.001* (0.001)	0 (0.001)	-0.002* (0.001)	-0.002* (0.001)	0.001 (0.001)
Observations	58685	58685	58685	58685	58685	87685	87685	87685	87685	87685
R-squared	0.276	0.045	0.268	0.202	0.160	0.299	0.068	0.330	0.199	0.164
Panel B: Formality										
Provincial tariff	-0.005 (0.005)	-0.005 (0.024)	-0.002 (0.002)	-0.006 (0.005)	-0.022** (0.010)	-0.011*** (0.004)	0 (0.012)	-0.001 (0.002)	-0.023*** (0.007)	-0.009* (0.005)
Provincial tariff*Female	0 (0.001)	-0.006 (0.004)	0 (0)	0 (0.001)	0.001 (0.002)	-0.001 (0.001)	-0.003 (0.003)	0 (0)	-0.001 (0.001)	-0.002 (0.001)
Observations	48768	5593	26338	33068	15700	71364	11993	31713	45844	25520
R-squared	0.181	0.178	0.022	0.128	0.244	0.235	0.257	0.047	0.263	0.257
Panel C: Unemployment and outside the labor force										
		(1) Unemployment	(2) Outside the labor force	(3) Unemployment	(4) Outside the labor force					
Provincial tariff		0 (0.001)	-0.002 (0.006)	-0.001 (0.001)	0.002 (0.003)					
Provincial tariff*Female		0 (0)	0 (0.002)	0 (0)	0.001 (0.001)					
Observations		38227	38227	59377	59377					
R-squared		0.009	0.279	0.011	0.296					

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISCO industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISCO industries from 15 to 37. The traded sector includes all the 2-digit-ISCO industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISCO industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 11. Wage outcomes by FDI level

	Below-median level					Above -median level				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Wages in all sectors										
Provincial tariff	0.058*** (0.020)	0.107*** (0.021)	0.079 (0.078)	0.088*** (0.033)	0.035* (0.018)	0.032** (0.013)	0.057*** (0.014)	0.054 (0.033)	0.032* (0.017)	0.030** (0.015)
Provincial tariff*Female	-0.003 (0.003)	0.004 (0.005)	-0.009 (0.006)	-0.003 (0.004)	-0.003 (0.005)	-0.006*** (0.001)	-0.010*** (0.004)	0.002 (0.005)	-0.009*** (0.002)	-0.003 (0.003)
Observations	16440	3443	2897	7055	9385	28884	8641	3198	13327	15557
R-squared	0.238	0.245	0.139	0.208	0.241	0.281	0.307	0.248	0.291	0.264
Panel B: Wages in the formal sector										
Provincial tariff	0.056*** (0.020)	0.113*** (0.027)	-0.167 (0.153)	0.078** (0.037)	0.042 (0.025)	0.036** (0.014)	0.049*** (0.014)	0.190*** (0.053)	0.032 (0.020)	0.034** (0.017)
Provincial tariff*Female	0.009* (0.005)	0.003 (0.005)	0.023 (0.019)	0.007 (0.005)	0.010 (0.006)	-0.003 (0.003)	-0.013*** (0.004)	0.032* (0.017)	-0.010*** (0.003)	0.002 (0.003)
Observations	8096	2170	255	2894	5202	17337	6253	591	7954	9383
R-squared	0.246	0.232	0.486	0.267	0.231	0.272	0.318	0.420	0.309	0.247
Panel C: Wages in the informal sector										
Provincial tariff	0.063** (0.028)	0.082* (.044)	0.114* (0.059)	0.101** (0.041)	0.024 (0.026)	0.029* (0.016)	0.048* (0.026)	0.027 (0.037)	0.038 (0.025)	0.031** (0.014)
Provincial tariff*Female	-0.007* (0.004)	0.015* (0.008)	-0.012 (0.007)	-0.006 (0.007)	-0.014** (0.007)	-0.003 (0.002)	0.008 (0.009)	-0.005 (0.004)	0 (0.005)	-0.010** (0.004)
Observations	8344	1273	2642	4161	4183	11547	2388	2607	5373	6174
R-squared	0.192	0.349	0.150	0.178	0.212	0.234	0.325	0.238	0.229	0.229
Panel D: Wages above the industry's median wage in all sectors										
Provincial tariff	0.049** (0.019)	.079*** (0.022)	0.081* (0.042)	0.076*** (0.028)	0.026 (0.017)	0.017*** (0.005)	0.033*** (0.009)	0.051* (0.029)	0.027*** (0.009)	0.009* (0.005)
Provincial tariff*Female	-0.001 (0.003)	0.003 (0.004)	-0.009* (0.005)	0 (0.004)	-0.003 (0.005)	-0.005*** (0.002)	-0.006* (0.003)	-0.001 (0.004)	-0.005** (0.002)	-0.004* (0.003)
Observations	16440	3443	2897	7055	9385	28884	8641	3198	13327	15557
R-squared	0.093	0.146	0.120	0.108	0.114	0.117	0.172	0.157	0.136	0.136
Panel E: Wages above the industry's median wage in the formal sector										
Provincial tariff	0.040** (0.019)	0.077** (0.033)	-0.090 (0.116)	0.053* (0.030)	0.025 (0.023)	0.015** (0.006)	0.028** (0.012)	0.109** (0.053)	0.025** (0.012)	0.006 (0.006)
Provincial tariff*Female	0.008** (0.003)	0.010** (0.005)	0.023 (0.017)	0.016*** (0.004)	0.003 (0.005)	-0.001 (0.002)	-0.003 (0.004)	0.001 (0.009)	-0.002 (0.003)	-0.001 (0.002)
Observations	8096	2170	255	2894	5202	17337	6253	591	7954	9383
R-squared	0.109	0.170	0.395	0.140	0.131	0.120	0.164	0.330	0.152	0.155
Panel F: Wages above the industry's median wage in the informal sector										
Provincial tariff	0.050** (0.023)	0.084** (0.042)	0.090** (0.037)	0.091*** (0.031)	0.011 (0.024)	0.021 (0.013)	0.034 (0.023)	0.034 (0.036)	0.030 (0.024)	0.018 (0.011)
Provincial tariff*Female	-0.007 (0.005)	-0.005 (0.008)	-0.011** (0.005)	-0.008 (0.005)	-0.006 (0.008)	-0.006** (0.003)	-0.004 (0.006)	-0.002 (0.005)	-0.004 (0.004)	-0.009* (0.005)
Observations	8344	1273	2642	4161	4183	11547	2388	2607	5373	6174
R-squared	0.094	0.191	0.127	0.120	0.110	0.118	0.206	0.150	0.138	0.135

Notes: The dependent variables in Panel A, Panel B, and Panel C are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel D, Panel E, and Panel F are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISIC industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISIC industries from 15 to 37. The traded sector includes all the 2-digit-ISIC industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISIC industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 12. Employment outcomes by the female employment share in 2006

	Below-median level					Above-median level				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Employment										
Provincial tariff	0.003 (0.004)	0.008*** (0.002)	-0.01*** (0.003)	-0.003 (0.003)	0.006* (0.003)	0.001 (0.003)	-0.003 (0.009)	-0.001 (0.011)	-0.004 (0.006)	0.005 (0.005)
Provincial tariff*Female	-0.001 (0.001)	0 (0.001)	-0.004*** (0.001)	-0.003** (0.001)	0.002* (0.001)	-0.001 (0.001)	0.001 (0.001)	-0.001 (0.002)	-0.001 (0.002)	0 (0.001)
Observations	72698	72698	72698	72698	72698	73672	73672	73672	73672	73672
R-squared	0.301	0.048	0.271	0.161	0.141	0.277	0.068	0.290	0.216	0.172
Panel B: Formality										
Provincial tariff	-0.007 (0.004)	-0.007 (0.015)	-0.001 (0.002)	-0.017*** (0.005)	-0.008 (0.006)	-0.007 (0.006)	0.007 (0.023)	-0.002 (0.002)	-0.011 (0.008)	-0.011 (0.009)
Provincial tariff*Female	0 (0.001)	-0.004 (0.003)	0 (0.001)	0 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.003)	0 (0)	-0.001 (0.001)	-0.001 (0.002)
Observations	58306	10529	21901	34538	23768	61826	7057	36150	44374	17452
R-squared	0.238	0.225	0.048	0.270	0.249	0.171	0.211	0.032	0.118	0.256
Panel C: Unemployment and outside the labor force										
		(1) Unemployment	(2) Outside the labor force	(3) Unemployment	(4) Outside the labor force					
Provincial tariff		-0.001 (0.001)	0.003 (0.004)	-0.001 (0.001)	-0.002 (0.003)					
Provincial tariff*Female		0 (0)	0 (0.001)	0 (0)	0.001 (0.001)					
Observations		48425	48425	49179	49179					
R-squared		0.012	0.299	0.007	0.278					

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISCO industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISCO industries from 15 to 37. The traded sector includes all the 2-digit-ISCO industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISCO industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table 13. Wage outcomes by the female employment share in 2006

	Below-median level					Above-median level				
	(1) All	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded	(6) All	(7) Manufacturing	(8) Agriculture	(9) Traded	(10) Non-traded
Panel A: Wages in all sectors										
Provincial tariff	0.025** (0.011)	0.038*** (0.013)	0.093* (0.052)	0.035** (0.015)	0.018 (0.015)	0.035 (0.022)	0.090** (0.037)	0.010 (0.051)	0.037 (0.040)	0.028* (0.014)
Provincial tariff*Female	-0.003* (0.001)	-0.008** (0.004)	0.002 (0.005)	-0.006** (0.003)	-0.001 (0.003)	-0.007*** (0.003)	-0.002 (0.004)	-0.006 (0.006)	-0.008** (0.004)	-0.004 (0.005)
Observations	26630	7864	2844	12169	14461	18694	4220	3251	8213	10481
R-squared	0.286	0.306	0.240	0.305	0.265	0.233	0.234	0.155	0.180	0.246
Panel B: Wages in the formal sector										
Provincial tariff	0.022 (0.014)	0.038*** (0.012)	0.330*** (0.076)	0.032* (0.018)	0.015 (0.018)	0.041* (0.024)	0.077 (0.051)	-0.047 (0.068)	0.024 (0.049)	0.046** (0.019)
Provincial tariff*Female	-0.003 (0.003)	-0.012*** (0.004)	0.038*** (0.013)	-0.008* (0.004)	0.001 (0.003)	0.004 (0.004)	-0.004 (0.005)	0.024 (0.030)	-0.003 (0.003)	0.011* (0.006)
Observations	15773	5750	392	7254	8519	9660	2673	454	3594	6066
R-squared	0.277	0.310	0.471	0.318	0.247	0.233	0.216	0.357	0.211	0.231
Panel C: Wages in the informal sector										
Provincial tariff	0.037** (0.015)	0.029 (0.026)	0.065 (0.055)	0.044 (0.029)	0.036*** (0.013)	0.025 (0.023)	0.085* (0.042)	0.042 (0.042)	0.057* (0.030)	-0.005 (0.022)
Provincial tariff*Female	-0.002 (0.003)	0.007 (0.009)	-0.007 (0.005)	0 (0.005)	-0.008 (0.005)	-0.007*** (0.003)	0.015 (0.010)	-0.010 (0.006)	-0.006 (0.006)	-0.015** (0.006)
Observations	10857	2114	2452	4915	5942	9034	1547	2797	4619	4415
R-squared	0.223	0.318	0.196	0.219	0.215	0.199	0.330	0.165	0.176	0.224
Panel D: Wages above the industry's median wage in all sectors										
Provincial tariff	0.009* (0.005)	0.023** (0.009)	0.080** (0.030)	0.025** (0.010)	-0.002 (0.006)	0.034* (0.017)	0.066** (0.030)	0.040 (0.028)	0.044 (0.027)	0.021* (0.012)
Provincial tariff*Female	-.001 (0.002)	-0.004 (0.003)	0.005 (0.003)	-0.001 (0.003)	-0.002 (0.002)	-0.007** (0.003)	-0.004 (0.004)	-0.010* (0.005)	-0.008** (0.003)	-0.007 (0.005)
Observations	26630	7864	2844	12169	14461	18694	4220	3251	8213	10481
R-squared	0.119	0.162	0.173	0.135	0.136	0.089	0.141	0.107	0.104	0.115
Panel E: Wages above the industry's median wage in the formal sector										
Provincial tariff	0.001 (0.006)	0.017 (0.010)	0.197*** (0.054)	0.017 (0.012)	-0.011 (0.007)	0.036* (0.018)	0.058 (0.044)	-0.020 (0.065)	0.031 (0.036)	0.030** (0.013)
Provincial tariff*Female	0.001 (0.002)	0 (0.004)	0.008 (0.009)	0.003 (0.004)	0 (0.002)	0.001 (0.003)	-0.003 (0.005)	0.005 (0.016)	-0.001 (0.005)	0.001 (0.005)
Observations	15773	5750	392	7254	8519	9660	2673	454	3594	6066
R-squared	0.119	0.154	0.367	0.142	0.150	0.103	0.143	0.294	0.137	0.140
Panel F: Wages above the industry's median wage in the informal sector										
Provincial tariff	0.026** (0.011)	0.041* (0.022)	0.069* (0.036)	0.041 (0.025)	0.017 (0.011)	0.021 (0.020)	0.051 (0.031)	0.047* (0.026)	0.052** (0.023)	-0.008 (0.021)
Provincial tariff*Female	-0.003 (0.003)	-0.007 (0.006)	0.002 (0.004)	-0.002 (0.005)	-0.006 (0.006)	-0.010*** (0.003)	0 (0.006)	-0.012** (0.005)	-0.010*** (0.004)	-0.011 (0.006)
Observations	10857	2114	2452	4915	5942	9034	1547	2797	4619	4415
R-squared	0.121	0.184	0.159	0.139	0.130	0.087	0.193	0.101	0.107	0.103

Notes: The dependent variables in Panel A, Panel B, and Panel C are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel D, Panel E, and Panel F are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISIC industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISIC industries from 15 to 37. The traded sector includes all the 2-digit-ISIC industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISIC industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

5.3. Robustness checks

We perform several checks for the robustness of our empirical findings on the links between local tariff exposure and the labor market outcomes. Vietnam is making great efforts in international economic integration. The bilateral trade agreement with the USA became effective in 2002, paving the way for the growth of exports to the country's major market. Before joining WTO, the country concluded two free trade agreements with members of the Association of Southeast Asian Nations (ASEAN) and China. After the WTO entry, the number of free trade agreements signed gets larger than before. Up to 2015, 6 more free trade agreements had become effective. Trade partners in these agreements spread across continents, including Korea, Japan, India, Australia, New Zealand, Chile. Besides, as a developing country, Vietnam's exports enjoy Generalised Scheme of Preferences (GSP) status given by EU countries, according to which export products are imposed reduced or zero tariffs. The intensive efforts of Vietnam in preferential trade agreements raise our concerns about the concurrence of the impacts of export tariff reductions on the labor market. To address this concern, we calculate the average effectively applied export tariffs imposed by trade partners in the above trade agreements. These trade partners accounts for approximately 90 percent of Vietnam's total exports. We then use equation (1) to calculate provincial export exposure and add this variable to equation (3). It can also be argued that exchange rate can be another concurrent factor that drives the impacts of trade liberalization. We therefore incorporate exchange rate in the right-hand side of equation (3). The results reported in Table C1 show that the estimates of the impact of local tariff exposure on the labor market outcomes after controlling for concurrent macro economic factors are of the same sign and similar magnitude with that of the main model specification.

Our next concern is that the before-WTO condition at the province level might affect the links between local tariff exposure and the labor market outcomes. Following McCaig & Pavcnik (2018) we add the change in provincial employment share in the period 2006-2008 to the right-hand side of equation (3). The results reported in Table C2 are consistent with our findings in Table 1.

The VHLSS rounds were carried out at the middle and the end of the year 2006 and 2008, while the time fell in every quarter of the year from the 2010 round. The interviewer asked for the

individual's information in the period of 12 months prior the survey. Thus, individuals provide information of both the prior and the current survey year. To capture the impact of tariff in both years, we replace the lag value of tariff in equation (3) with the average of the lag and current value of tariff. Thus, 2006 is the year before the WTO entry and the years from 2008 represents post WTO entry. The estimation results are reported in Table C3. Consistent with our baseline findings, there is no significant disparity in the impact of tariff exposure on employment across provinces in all industries while the probability of working in the formal sector increases for workers in the more exposed provinces. The patterns of the impacts on unemployment, labour force nonparticipation and wages remains robust. However, we observe an slight increase in the magnitude of the coefficients, which suggests that the inclusion of the current tariff triggers the impacts of the trade shock.

We also control for other individual characteristics, including marital status (married or single), and the household size (the number of members in the household). The findings reported in Table C4 are robust.

Another robustness check is that we exclude tobacco, uranium and thorium ores, metal ores from the sample, because of tariff trend is different in these industries. Tobacco is the only industry which experiences an increase in the tariff rate after the WTO accession, whereas tariff rate in these other 2 industries is always zero. We again find consistent results as reported in Table C5.

5.4. Labor mobility across provinces

Following the literature on the local trade exposure (i.e., Erten et al., 2019; Mccraig, 2011; Topalova, 2005), we examine the mobility of labor across provinces under the impact of trade liberalization. It is expected that tariff reductions after the WTO accession have no impact on inter-province movement. In that case, workers have no motivation to move across regions in the presence of tariff reductions so that wages are not equalized among provinces and our main findings in the previous sections are not violated. In line with Mccraig (2011), we find that the share of individuals moving to another province to find work is relatively slow. Using the data from the subsection of migration in the 2 consecutive rounds of VHLSS, we estimate that the shares of inter-province

migrants for work reason is around 2.5 % in 2006-2008, 2.0 % in 2010-2012, 2.4% in 2012-2014, and 1.8% in 2014-2016.

We further regress the probability of individuals moving across province to find a job on the local tariff exposure. The estimation results are reported in Table D. The first column shows the result when tariff exposure is the only explanatory variable. In the second column, we control for the impacts of other individual characteristics such as the interaction of tariff exposure and gender, age, square of age, gender, minority and urban locations. Province and year fixed effects are controlled in both estimations. The coefficients of provincial tariff and the interaction term are insignificantly different from zero, indicating that tariff reductions have no significant impact on the probability of migrating to another province. Our findings are in line with those of previous literature (Erten et al., 2019; Mccraig, 2011; Topalova, 2005) on the insignificant change in labour movement across region under the impact of local trade exposure.

6. Conclusion

This study examines the impacts of a trade shock on the labor market, taking Vietnam as a case study. Using individual-level data from the household survey, we add to the literature the empirical evidence of local tariff exposure. We further focus on the gender dimension of the impacts.

We find no evidence of the variation in the impacts of tariff reductions after Vietnam's accession to the WTO on economy-wide employment, unemployment and outside the labour force across provinces. Workers in provinces more exposed to tariff reductions tend to have a higher probability of working for registered enterprises. Wages in provinces exposed to the trade shocks are getting smaller than those in less exposed provinces. We develop our discussion about the adequacy of wages by examining the likelihood of earning wages above the industry's median wage. It turns out that workers in more exposed provinces are less likely to earn wages above the industry's median wage. The positive impacts favour women more than men and the negative impacts are less severe for the former relative to the latter though the magnitude is relatively small. Women who are more

than 30 years old, low-skilled, live in provinces with a high level of FDI inflows, or with a high share of initial female employment benefit more from tariff reductions than men.

Our insightful analysis provides useful policy implications. Job prospects for people are always a major concern of the government and policy-makers when a trade shock comes. Our findings suggest the variation in the impacts of tariff reductions among different groups. Trade liberalization is essential for the country to integrate in the global market, but more measures should be taken to narrow down the gap between the winners and the losers in the labour market. Individuals who are more vulnerable to negative outcomes should be given better access to education, job training, and recruitment information. The empirical findings can serve as an evidence-base for policy-makers to target necessary interventions to groups who are vulnerable to the impact of trade liberalization.

In this study, we have scrutinized the impacts of trade liberalization on various aspects of the labor market. Nevertheless, we are not able to explain the channel generating the impacts in more details due to the limitation of the household survey. Future studies incorporating data from different stakeholders such as enterprises, and local authorities are expected to offer a thorough view on the mechanism of labor demand and labor supply that channels the impact.

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Appendix

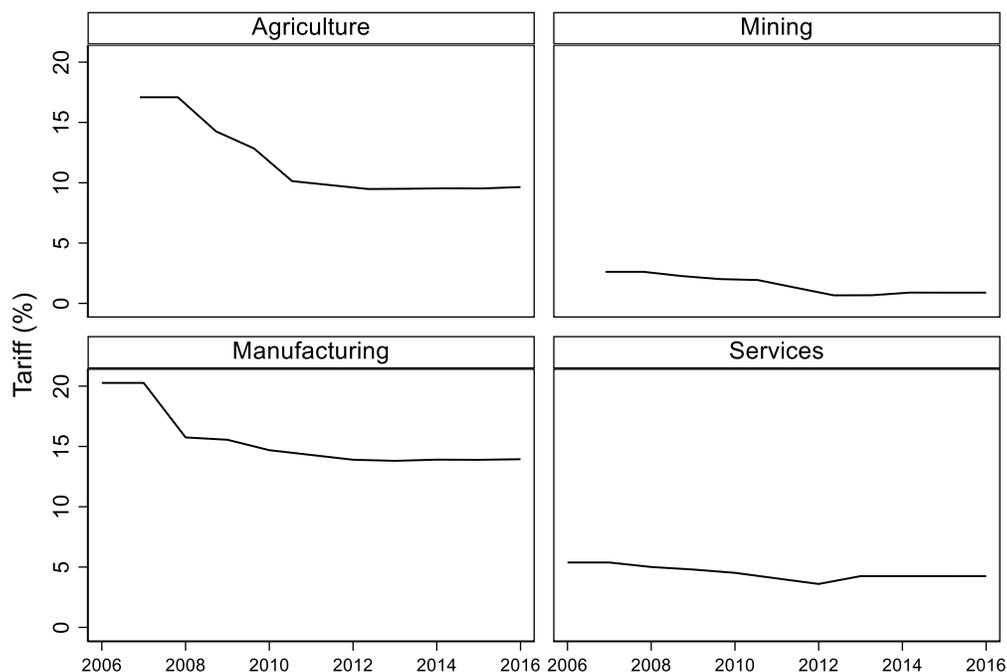


Figure A1. Tariff trends by main sectors in 2007-2016.

Tariffs drop in all sectors after the WTO accession.

Source: Authors' calculations from the WTO database.

Table A1. The correlation between the previous trends of imports and the tariff reductions.

The tariff reductions after the WTO entry are independent of the previous trends of imports.

	(1)	(2)	(3)	(4)	(5)
	World	China	EU	Japan	USA
Import in 2000-2007	-0.282	0.171	0.221	-2.744	-1.765
	(4.099)	(0.952)	(1.396)	(1.881)	(1.239)
Observations	28	25	28	25	26
R-squared	0.001	0.001	0.002	0.141	0.116

Notes: The table reports the estimates of the correlation between the tariff reductions in 2007-2016 and Vietnam's change in import value in 2000-2007. The dependent variable is tariff reductions in 2006-2016. The independent variable is Vietnam's change in import value in 2000-2007 from the world and its main trading partners including the USA, the EU, China, Japan. Robust standard errors are in parentheses. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table A2. The correlation between the initial employment structure at the province level and tariff reductions after the WTO accession.

The tariff reductions are independent of the initial employment structure at the province level.

	Tariff reductions in 2007-2016
Employment share by industry in 2006	0.050 (0.428)
Observations	851
R-squared	0.027

Notes: The table reports the estimates of the correlation between between the initial employment structure at the province level and tariff cut. The dependent variable is tariff reductions in 2007-2016. The independent variable is the share of employment by industry at province level in 2006. Robust standard errors are in parentheses. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table B1. Description of variables.

Variable	Description
Provincial tariff _{pt}	The industrial employment weighted tariff of province p at time t. The weight is the share of employment in each industry in 2006.
Employment	A dummy variable which is equal to 1 if an individual is employed within the last 12 months, and zero otherwise.
Formal employment	A dummy variable which is equal to 1 if an individual if an individual works for a registered firm within the last 12 months, and zero otherwise.
Unemployment	A dummy variable which is equal to 1 if an individual in the working age is unable to find a job within the last 12 months, and zero otherwise.
Outside the labor force	A dummy variable which is equal to 1 if an individual in the working age is not working because of either being at school, or doing housework, or being sick, or being too old, or being disabled within the last 12 months, and zero otherwise.
Wages	Natural logarithm of the real average hourly wage of the most time-consuming job of an individual within the last 12 months. The nominal wage is the sum of salary and all the benefits that an individual obtains from his/her most time-consuming job. We calculate the real wage by dividing the nominal wage by the corresponding yearly consumer price index (the base year is 2006).
Wages above the industry's median wage	A dummy variable which is equal to 1 if an individual has a wage equal to or greater than the industry's median wage, and zero otherwise.
Female	A dummy variable which is equal to 1 if an individual is female, and zero otherwise.
Age	Age of an individual.
Age squared	Squared age of an individual.
Education	Number of years of education of an individual, which ranges from 0 to 12.
Minority	A dummy variable which is equal to 1 if an individual belongs to the ethnic minority group (he/she does not belong to the Kinh/Hoa ethnic group), and zero otherwise.
Urban	A dummy variable which is equal to 1 if an individual lives in the urban area, and zero otherwise.

Table C1. Robustness checks- Average effectively applied export tariff and exchange rate are added.

	(1)	(2)	(3)	(4)	(5)
	All industries	Manufacturing	Agriculture	Traded	Non-traded
Panel A: Employment					
Provincial tariff	.002 (.002)	.004 (.004)	-.006 (.005)	-.002 (.003)	.005 (.003)
Provincial tariff*Female	-.001 (.001)	0 (.001)	-.002* (.001)	-.002* (.001)	.001 (.001)
Observations	146370	146370	146370	146370	146370
R-squared	.289	.059	.307	.2	.162
Panel B: Formality					
Provincial tariff	-.009** (.004)	-.005 (.011)	-.002 (.002)	-.015** (.006)	-.012** (.005)
Provincial tariff*Female	-.001 (.001)	-.003 (.002)	0 (0)	-.001 (.001)	-.001 (.001)
Observations	120132	17586	58051	78912	41220
R-squared	.221	.239	.039	.23	.251
Panel C: Employment and outside the labor force					
		(1)		(2)	
		Unemployment		Outside the labour force	
Provincial tariff		-.001 (.001)		-.002 (.003)	
Provincial tariff*Female		0 (0)		.001 (.001)	
Observations		97604		97604	
R-squared		.01		.288	
Panel D: Wages in all sectors					
Provincial tariff	.035*** (.009)	.057*** (.015)	.039 (.033)	.044*** (.015)	.028** (.011)
Provincial tariff*Female	-.005*** (.001)	-.006* (.003)	-.003 (.004)	-.007*** (.002)	-.003 (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.275	.301	.2	.279	.261
Panel E: Wages in the formal sector					
Provincial tariff	.036*** (.011)	.05*** (.016)	.114* (.06)	.038** (.017)	.033*** (.012)
Provincial tariff*Female	-.001 (.003)	-.009*** (.003)	.033** (.014)	-.006** (.003)	.003 (.003)
Observations	25433	8423	846	10848	14585
R-squared	.266	.304	.401	.305	.242
Panel F: Wages in the informal sector					
Provincial tariff	.038*** (.012)	.052** (.025)	.052* (.03)	.055*** (.02)	.027** (.012)
Provincial tariff*Female	-.004* (.002)	.011 (.007)	-.008** (.004)	-.002 (.004)	-.01** (.004)
Observations	19891	3661	5249	9534	10357
R-squared	.22	.328	.186	.204	.224
Panel G: Wages above the industry's median wage in all sectors					
Provincial tariff	.019*** (.007)	.037*** (.012)	.046** (.022)	.03** (.012)	.01* (.006)
Provincial tariff*Female	-.003** (.002)	-.003 (.003)	-.003 (.003)	-.003 (.002)	-.004* (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.115	.17	.141	.132	.131
Panel H: Wages above the industry's median wage in all sectors in the formal sector					
Provincial tariff	.012* (.007)	.027* (.015)	.054 (.047)	.022* (.012)	.005 (.007)
Provincial tariff*Female	.001 (.002)	0 (.003)	.008 (.008)	.002 (.003)	0 (.002)
Observations	25433	8423	846	10848	14585
R-squared	.12	.168	.312	.153	.146
Panel I: Wages above the industry's median wage in all sectors in the informal sector					
Provincial tariff	.028*** (.009)	.049** (.019)	.048** (.021)	.042** (.017)	.019* (.01)
Provincial tariff*Female	-.006** (.002)	-.004 (.004)	-.005 (.004)	-.006* (.003)	-.008* (.004)
Observations	19891	3661	5249	9534	10357
R-squared	.109	.188	.132	.125	.124

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). The dependent variables in Panel D, Panel E, and Panel F are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel G, Panel H, and Panel I are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-*ISIC* industries from 1 to 5. The manufacturing sector includes all the 2-digit-*ISIC* industries from 15 to 37. The traded sector includes all the 2-digit-*ISIC* industries that are import tariff imposed. The non-traded sector includes all the 2-digit-*ISIC* industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table C2.
Robustness checks- Change in provincial employment share in 2006-2008 is added.

	(1) All industries	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded
Panel A: Employment					
Provincial tariff	.001 (.002)	.004 (.004)	-.007 (.005)	-.003 (.003)	.005* (.003)
Provincial tariff*Female	-.001 (.001)	0 (.001)	-.002* (.001)	-.002* (.001)	.001 (.001)
Observations	146370	146370	146370	146370	146370
R-squared	.289	.059	.307	.2	.162
Panel B: Formality					
Provincial tariff	-.009** (.004)	-.005 (.011)	-.002 (.001)	-.017*** (.006)	-.01** (.004)
Provincial tariff*Female	-.001 (.001)	-.003 (.002)	0 (0)	-.001 (.001)	-.001 (.001)
Observations	120132	17586	58051	78912	41220
R-squared	.221	.239	.039	.23	.251
Panel C: Employment and outside the labor force					
		(1) Unemployment		(2) Outside the labour force	
Provincial tariff		-.001 (.001)		.001 (.002)	
Provincial tariff*Female		0 (0)		.001 (.001)	
Observations		97604		97604	
R-squared		.01		.288	
Panel D: Wages in all sectors					
Provincial tariff	.029*** (.01)	.052*** (.014)	.039 (.036)	.036** (.015)	.023** (.011)
Provincial tariff*Female	-.005*** (.001)	-.006* (.003)	-.003 (.004)	-.007*** (.002)	-.003 (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.275	.301	.2	.279	.261
Panel E: Wages in the formal sector					
Provincial tariff	.031*** (.011)	.048*** (.014)	.09 (.062)	.033** (.015)	.028** (.013)
Provincial tariff*Female	-.001 (.003)	-.009*** (.003)	.033** (.014)	-.006** (.003)	.003 (.003)
Observations	25433	8423	846	10848	14585
R-squared	.265	.304	.4	.305	.242
Panel F: Wages in the informal sector					
Provincial tariff	.031** (.013)	.045** (.022)	.051 (.033)	.049** (.022)	.02 (.012)
Provincial tariff*Female	-.004* (.002)	.011 (.007)	-.008** (.004)	-.002 (.004)	-.01** (.004)
Observations	19891	3661	5249	9534	10357
R-squared	.219	.328	.186	.204	.224
Panel G: Wages above the industry's median wage in all sectors					
Provincial tariff	.016** (.007)	.031*** (.011)	.05** (.023)	.028** (.011)	.007 (.006)
Provincial tariff*Female	-.003** (.002)	-.003 (.003)	-.003 (.003)	-.003 (.002)	-.004* (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.114	.17	.141	.132	.131
Panel H: Wages above the industry's median wage in all sectors in the formal sector					
Provincial tariff	.011* (.007)	.022 (.014)	.047 (.048)	.018 (.012)	.006 (.006)
Provincial tariff*Female	.001 (.002)	0 (.003)	.008 (.008)	.002 (.003)	0 (.002)
Observations	25433	8423	846	10848	14585
R-squared	.12	.168	.312	.153	.146
Panel I: Wages above the industry's median wage in all sectors in the informal sector					
Provincial tariff	.024** (.01)	.047*** (.017)	.053** (.023)	.044** (.018)	.009 (.01)
Provincial tariff*Female	-.006** (.002)	-.004 (.004)	-.005 (.004)	-.006* (.003)	-.008* (.004)
Observations	19891	3661	5249	9534	10357
R-squared	.109	.188	.132	.125	.124

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). The dependent variables in Panel D, Panel E, and Panel F are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel G, Panel H, and Panel I are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-*ISIC* industries from 1 to 5. The manufacturing sector includes all the 2-digit-*ISIC* industries from 15 to 37. The traded sector includes all the 2-digit-*ISIC* industries that are import tariff imposed. The non-traded sector includes all the 2-digit-*ISIC* industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table C3.
Robustness checks- The average tariff is used instead of the lagged tariff.

	(1) All industries	(2) Manufacturing	(3) Agriculture	(4) Traded	(5) Non-traded
Panel A: Employment					
Provincial tariff	.002 (.003)	.007 (.005)	-.008 (.006)	-.002 (.004)	.004 (.003)
Provincial tariff*Female	-.001 (.001)	0 (.001)	-.003** (.001)	-.002 (.001)	.001 (.001)
Observations	146370	146370	146370	146370	146370
R-squared	.289	.059	.307	.2	.162
Panel B: Formality					
Provincial tariff	-.01** (.004)	-.009 (.014)	-.002 (.001)	-.018** (.008)	-.012** (.005)
Provincial tariff*Female	-.001 (.001)	-.004 (.002)	0 (0)	-.001 (.001)	-.001 (.001)
Observations	120132	17586	58051	78912	41220
R-squared	.221	.239	.039	.23	.251
Panel C: Employment and outside the labor force					
		(1) Unemployment		(2) Outside the labour force	
Provincial tariff		0 (.001)		-.001 (.003)	
Provincial tariff*Female		0 (0)		.001 (.001)	
Observations		97604		97604	
R-squared		.01		.288	
Panel D: Wages in all sectors					
Provincial tariff	.038*** (.011)	.06*** (.019)	.044 (.042)	.046** (.02)	.03*** (.011)
Provincial tariff*Female	-.005*** (.002)	-.005 (.004)	-.003 (.005)	-.006** (.003)	-.004 (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.275	.3	.2	.279	.261
Panel E: Wages in the formal sector					
Provincial tariff	.04*** (.012)	.053** (.02)	.1 (.072)	.041** (.019)	.036*** (.013)
Provincial tariff*Female	0 (.003)	-.008* (.004)	.039** (.018)	-.004 (.004)	.003 (.004)
Observations	25433	8423	846	10848	14585
R-squared	.266	.304	.4	.305	.242
Panel F: Wages in the informal sector					
Provincial tariff	.043** (.016)	.057* (.029)	.063 (.039)	.061** (.026)	.029** (.013)
Provincial tariff*Female	-.004* (.003)	.012 (.007)	-.009* (.005)	-.002 (.004)	-.013*** (.004)
Observations	19891	3661	5249	9534	10357
R-squared	.22	.328	.186	.204	.224
Panel G: Wages above the industry's median wage in all sectors					
Provincial tariff	.023** (.009)	.041*** (.015)	.051* (.028)	.035** (.016)	.013* (.007)
Provincial tariff*Female	-.004** (.002)	-.004 (.003)	-.003 (.004)	-.004 (.003)	-.006** (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.115	.17	.141	.132	.131
Panel H: Wages above the industry's median wage in all sectors in the formal sector					
Provincial tariff	.016** (.008)	.029 (.019)	.053 (.057)	.028* (.014)	.008 (.008)
Provincial tariff*Female	.001 (.002)	0 (.004)	.009 (.01)	.002 (.003)	0 (.002)
Observations	25433	8423	846	10848	14585
R-squared	.12	.168	.312	.153	.146
Panel I: Wage above the industry's median wage in all sectors in the informal sector					
Provincial tariff	.033** (.013)	.065*** (.021)	.055* (.028)	.048** (.023)	.022** (.01)
Provincial tariff*Female	-.007*** (.003)	-.007 (.005)	-.005 (.004)	-.007* (.003)	-.009* (.005)
Observations	19891	3661	5249	9534	10357
R-squared	.109	.189	.131	.125	.124

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job), and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). The dependent variables in Panel D, Panel E, and Panel F are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel G, Panel H, and Panel I are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-*ISIC* industries from 1 to 5. The manufacturing sector includes all the 2-digit-*ISIC* industries from 15 to 37. The traded sector includes all the 2-digit-*ISIC* industries that are import tariff imposed. The non-traded sector includes all the 2-digit-*ISIC* industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table C4. Robustness checks- More individual characteristics are added.

	(1)	(2)	(3)	(4)	(5)
	All industries	Manufacturing	Agriculture	Traded	Non-traded
Panel A: Employment					
Provincial tariff	.001 (.002)	.004 (.004)	-.007 (.005)	-.004 (.003)	.005* (.003)
Provincial tariff*Female	-.001 (.001)	0 (.001)	-.002* (.001)	-.002 (.001)	.001 (.001)
Observations	146370	146370	146370	146370	146370
R-squared	.299	.059	.31	.205	.162
Panel B: Formality					
Provincial tariff	-.009** (.004)	-.006 (.012)	-.002 (.001)	-.017*** (.006)	-.01** (.004)
Provincial tariff*Female	-.001 (.001)	-.003 (.002)	0 (0)	-.001 (.001)	-.001 (.001)
Observations	120132	17586	58051	78912	41220
R-squared	.221	.239	.039	.231	.251
Panel C: Employment and outside the labor force					
		(1)		(2)	
		Unemployment		Outside the labour force	
Provincial tariff		-.001 (.001)		.001 (.002)	
Provincial tariff*Female		0 (0)		0 (.001)	
Observations		97604		97604	
R-squared		.011		.295	
Panel D: Wages in all sectors					
Provincial tariff	.029*** (.009)	.05*** (.014)	.039 (.036)	.035** (.015)	.024** (.011)
Provincial tariff*Female	-.004*** (.001)	-.005 (.003)	-.002 (.004)	-.006*** (.002)	-.002 (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.278	.305	.202	.283	.264
Panel E: Wages in the formal sector					
Provincial tariff	.031*** (.011)	.046*** (.014)	.092 (.06)	.032** (.015)	.029** (.014)
Provincial tariff*Female	0 (.003)	-.009*** (.003)	.032** (.014)	-.006* (.003)	.004 (.003)
Observations	25433	8423	846	10848	14585
R-squared	.267	.307	.405	.308	.244
Panel F: Wages in the informal sector					
Provincial tariff	.03** (.012)	.041* (.021)	.051 (.032)	.048** (.021)	.02 (.012)
Provincial tariff*Female	-.004* (.002)	.011 (.007)	-.008* (.004)	-.002 (.004)	-.01** (.004)
Observations	19891	3661	5249	9534	10357
R-squared	.223	.334	.188	.208	.228
Panel G: Wages from the industry's median wage in all sectors					
Provincial tariff	.016** (.007)	.029** (.012)	.05** (.022)	.028** (.011)	.007 (.006)
Provincial tariff*Female	-.003* (.002)	-.003 (.003)	-.003 (.003)	-.003 (.002)	-.004* (.003)
Observations	45324	12084	6095	20382	24942
R-squared	.117	.173	.144	.136	.132
Panel H: Wages from the industry's median wage in all sectors in the formal sector					
Provincial tariff	.011* (.007)	.021 (.015)	.048 (.048)	.017 (.012)	.007 (.006)
Provincial tariff*Female	.002 (.002)	0 (.003)	.008 (.008)	.002 (.003)	0 (.002)
Observations	25433	8423	846	10848	14585
R-squared	.121	.17	.313	.155	.147
Panel I: Wages from the industry's median wage in all sectors in the informal sector					
Provincial tariff	.023** (.01)	.044** (.017)	.054** (.022)	.044** (.017)	.008 (.01)
Provincial tariff*Female	-.006** (.002)	-.004 (.004)	-.005 (.004)	-.005 (.003)	-.008* (.004)
Observations	19891	3661	5249	9534	10357
R-squared	.113	.194	.135	.129	.126

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job),

and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). The dependent variables in Panel D, Panel E, and Panel F are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel G, Panel H, and Panel I are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISCO industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISCO industries from 15 to 37. The traded sector includes all the 2-digit-ISCO industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISCO industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table C5. Robustness checks- Some sectors are excluded.

	(1)	(2)	(3)	(4)	(5)
	All industries	Manufacturing	Agriculture	Traded	Non-traded
Panel A: Employment					
Provincial tariff	.001 (.002)	.004 (.004)	-.007 (.005)	-.003 (.003)	.005* (.003)
Provincial tariff*Female	-.001 (.001)	0 (.001)	-.002* (.001)	-.002* (.001)	.001 (.001)
Observations	146249	146249	146249	146249	146249
R-squared	.289	.059	.307	.201	.162
Panel B: Formality					
Provincial tariff	-.009** (.003)	-.005 (.012)	-.002 (.001)	-.016*** (.006)	-.01** (.004)
Provincial tariff*Female	-.001 (.001)	-.004 (.002)	0 (0)	-.001 (.001)	-.001 (.001)
Observations	120011	17546	58051	78791	41220
R-squared	.221	.239	.039	.23	.251
Panel C: Employment and outside the labor force					
		(1)		(2)	
		Unemployment		Outside the labour force	
Provincial tariff		-.001 (.001)		.001 (.002)	
Provincial tariff*Female		0 (0)		.001 (.001)	
Observations		97531		97531	
R-squared		.01		.288	
Panel D: Wages in all sectors					
Provincial tariff	.029*** (.01)	.052*** (.014)	.039 (.036)	.037** (.015)	.023** (.011)
Provincial tariff*Female	-.005*** (.001)	-.006* (.003)	-.003 (.004)	-.007*** (.002)	-.003 (.003)
Observations	45220	12054	6095	20278	24942
R-squared	.275	.301	.2	.28	.261
Panel E: Wages in the formal sector					
Provincial tariff	.031*** (.011)	.047*** (.014)	.09 (.061)	.034** (.016)	.028** (.013)
Provincial tariff*Female	-.001 (.003)	-.009*** (.003)	.032** (.014)	-.006** (.003)	.003 (.003)
Observations	25349	8393	846	10764	14585
R-squared	.266	.304	.4	.306	.242
Panel F: Wages in the informal sector					
Provincial tariff	.031** (.013)	.046** (.022)	.051 (.033)	.049** (.021)	.02 (.012)
Provincial tariff*Female	-.004* (.002)	.011 (.007)	-.008** (.004)	-.002 (.004)	-.01** (.004)
Observations	19871	3661	5249	9514	10357
R-squared	.22	.328	.186	.205	.224
Panel G: Wages above the industry's median wage in all sectors					
Provincial tariff	.016** (.007)	.03*** (.011)	.05** (.023)	.027** (.011)	.007 (.006)
Provincial tariff*Female	-.003** (.002)	-.003 (.003)	-.003 (.003)	-.003 (.002)	-.004* (.002)
Observations	45220	12054	6095	20278	24942
R-squared	.115	.171	.141	.133	.131
Panel H: Wages above the industry's median wage in all sectors in the formal sector					
Provincial tariff	.011 (.007)	.021 (.014)	.047 (.047)	.017 (.012)	.006 (.006)
Provincial tariff*Female	.001 (.002)	0 (.003)	.008 (.008)	.002 (.003)	0 (.002)
Observations	25349	8393	846	10764	14585
R-squared	.121	.169	.312	.154	.146
Panel I: Wages above the industry's median wage in all sectors in the informal sector					
Provincial tariff	.023** (.01)	.047*** (.017)	.053** (.023)	.043** (.018)	.009 (.01)
Provincial tariff*Female	-.006** (.002)	-.004 (.004)	-.005 (.004)	-.006* (.003)	-.008* (.004)
Observations	19871	3661	5249	9514	10357
R-squared	.109	.188	.132	.126	.124

Notes: The dependent variables in Panel A, Panel B are an indicator for being employed, and an indicator for working in the formal sector (the sector that includes all registered firms), respectively. In Panel C, the dependent variable in Column (1) is an indicator for being unemployed (being unable to find a job),

and the dependent variable in Column (2) is an indicator for being outside the labor force (doing housework, studying, being disabled, being sick, being too old). The dependent variables in Panel D, Panel E, and Panel F are wages in all sectors (both the formal and the informal sectors), wages in the formal sector (the sector that includes all registered firms), and wages in the informal sector (the sector that includes all households), respectively. The dependent variables in Panel G, Panel H, and Panel I are indicators for having wages above the industry's median wage in all sectors, in the formal sector, and in the informal sector, respectively. In all specifications, the independent variable is the provincial tariff, weighted by the industrial employment share in 2006. Other independent variables include gender, age, age squared, education, an indicator for an urban or rural area, and an ethnic minority indicator. We also control for province fixed effects and year fixed effects. The agriculture sector includes all the 2-digit-ISCO industries from 1 to 5. The manufacturing sector includes all the 2-digit-ISCO industries from 15 to 37. The traded sector includes all the 2-digit-ISCO industries that are import tariff imposed. The non-traded sector includes all the 2-digit-ISCO industries that are not import tariff imposed. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

Table D. Tariff reductions and inter-province migration.
Tariff reductions has no significant effect on migration.

	(1) Only provincial tariff	(2) Other individual characteristics included
Provincial tariff	0 (.001)	0 (.001)
Provincial tariff*Female		0 (0)
Observations	40262	40262
R-squared	.009	.037

Notes: The dependent variable is the probability of moving across province to find a job. In column (1), provincial tariff is the only explanatory variable. In column (2), we control for the impacts of other individual characteristics such as the interaction of tariff exposure and gender, age, square of age, gender, minority and urban locations. Province and year fixed effects are controlled in both columns. In all specifications, provincial tariff is weighted by the industrial employment share in 2006. Robust standard errors clustered at the province level are in parenthesis. *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.