

# Foreign Wage Premium, Gender and Education

Insights from Vietnam Household Surveys

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## Abstract

This paper investigates the differential impacts of foreign ownership on wages for different types of workers (in terms of educational background and gender) in Vietnam using the *Vietnam Household Living Standards Surveys* of 2002 and 2004. Whereas most previous studies have compared wage levels between foreign and domestic sectors using firm-level data (thus excluding the informal sector), one advantage of using the Living Standards Surveys in this paper is that the data allow wage comparison analyses to extend to the informal wage sector. A series of Mincerian earnings equations and worker-specific fixed effects models are estimated. Several

findings emerge. First, foreign firms pay higher wages relative to their domestic counterparts after controlling for workers' personal characteristics. Second, the higher the individual workers' levels of education, the larger on average are the wage premiums for those who work for foreign firms. Third, longer hours of work in foreign firm jobs relative to working in the informal wage sector are an important component of the wage premium. Finally, unskilled women experience a larger foreign wage premium than unskilled men, reflecting the low earning opportunities for women and a higher gender gap in the informal wage sector.

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# **Foreign Wage Premium, Gender and Education: Insights from Vietnam Household Surveys**

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## 1. Introduction

Since Vietnam adopted its *doi moi* (“renovation”) policy in 1986, Vietnam has been among the fastest growing economies.<sup>2</sup> Vietnam has gradually enacted a series of market-oriented reforms and made substantial progress in liberalizing its trade and Foreign Direct Investment (FDI) policy. Since the first Law on Foreign Direct Investment took effect in 1987, Vietnam has received a considerable inflow of FDI with a cumulative FDI stock of \$72.8 billion in 2011 (UNCTAD). This FDI has contributed greatly to Vietnam’s economy. For the year 2009, foreign owned firms accounted for 18.3 percent of Vietnam’s Gross Domestic Product (GDP) and 43.2 percent of industrial output (GSO, 2010). Stimulated by the United States-Vietnam Bilateral Trade Agreement (BTA) in 2001 and Vietnam’s accession to the World Trade Organization (WTO) in 2007, employment in foreign affiliates increased from 0.4 million workers in 2000 to 1.7 million in 2007 (the *Enterprise Survey* data, GSO). During the same period, the expansion of employment by foreign firms was faster for female workers relative to male workers, as the share of females employed by foreign firms increased from 60.4 percent in 2000 to 67.5 percent in 2007 (the *Enterprise Survey* data, GSO). However, not much research has been done in terms of the employment and wage effects of foreign-owned establishments.<sup>3</sup>

This paper investigates the impacts of foreign ownership on wages for different types of workers in Vietnam (in terms of educational attainment and gender) using the *Vietnam Household Living Standards Surveys* (VHLSS) for the years 2002 and 2004. Previous studies have found that foreign firms usually pay higher wages both in developed and developing countries.<sup>4</sup> Most of these studies have used *firm-* or *plant-*level data and demonstrated that

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<sup>2</sup> During the period 1986-2011, Vietnam recorded an average annual growth rate of 6.9 percent (the *World Development Indicators*, the World Bank).

<sup>3</sup> See Nguyen and Nguyen (2007) for a review of the literature on FDI in Vietnam.

<sup>4</sup> See Lipsey (2004) for a review of the earlier literature.

foreign firms pay wage premiums, even controlling for a variety of firm and industry characteristics (e.g., industry, firm size, capital intensity, and inputs). A small number of studies adjusted for workers' educational attainments for developing countries. For instance, using Indonesian manufacturing plant data which include information on the distribution of workers by level of education completed, Lipsey and Sjöholm (2004) find that foreign-owned plants hire more educated workers than domestically-owned ones and pay higher wages given the educational level of workers.

For Vietnam, using firm-level data from annual enterprise surveys for the period 2000-2004, Ramstetter and Ngoc (2007a) find results in accordance with previous studies: Multinational Corporations (MNCs) are found to pay the highest compensation followed by state-owned enterprises (SOEs) and then by private firms; but the MNCs-private compensation differential is reduced after controlling for a series of firm- and industry-level characteristics and, as a proxy for worker quality, for the proportion of science and technology workers in total employment. However, little is known about how foreign firms reward different types of workers. One advantage in using the VHLSS is that the detailed individual level data permit the researcher to analyze the differential impacts of foreign ownership on wages by running Mincerian earnings regressions separately by skill levels and by gender.

The existence of a foreign wage premium after adjusting for observable personal characteristics does not necessarily imply that workers' wages increase by working for foreign firms. For instance if individuals with some *unobservable* attributes (e.g., higher ability) self-select into (or are picked up by) foreign firms, the estimated coefficient for foreign ownership in cross-sectional data would be biased. In order to address selectivity bias, several recent studies trace the change in wages of *identical* individuals over time using matched employer-employee

panel data (e.g., Andrews, Bellmann, Schank and Upward, 2009; Martins, 2004, 2011; Heyman, Sjöholm and Tingvall, 2007) and many of them find much reduced foreign wage premiums. However, few studies trace the same individuals in developing countries, perhaps due to data constraints. Exploiting the panel component of the VHLSS 2002 and 2004, this study investigates how the wage levels of identical individuals changed if they “switched” between domestic and foreign sectors.

While Vietnam’s “formal” enterprise employment has been growing rapidly (Ramstetter and Ngoc, 2007b), Vietnam’s “formal”<sup>5</sup> sector in terms of employment represents still only a fraction of its economy (e.g., about 17 percent of total employment in 2004 (VHLSS, 2004)) and the remaining workers belong to large agricultural and other informal sectors. One of the roles of foreign firms in Vietnam is to create “formal” job opportunities, drawing workers from the informal sectors. Such an employment effect of FDI has been documented in other developing countries, especially in the context of the expansion of export-oriented manufacturing production.<sup>6</sup> However, previous studies based on firm-level data as well as those using matched employer-employee data ignore the wage effects on workers who are moving from informal sectors. Another advantage in using the VHLSS is that the data enable to extend the wage comparison analyses to the informal sector, filling the gap in the literature.<sup>7</sup>

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<sup>5</sup> Throughout the paper, jobs in foreign, private and state enterprises as well as those in government are referred to as “formal” employment. “Informal” employment is defined to include “informal wage” workers and “self-employed”. The impacts of foreign ownership on income for self-employed are not considered in this paper due to the lack of wage data.

<sup>6</sup> See Anderson and Dimon (1999) for Mexico, Fu and Balasubramanyam (2005) for China, Glick and Roubaud (2006) for Madagascar. For instance, applying the Smith-Myint model of “vent for surplus” to China, Fu and Balasubramanyam (2005) find that the expansion of exports from labor-intensive manufacturing, assisted by FDI, accelerated the transfer of surplus labor from the agricultural to the export sector. For Mexico, Anderson and Dimon (1999) report evidence that export oriented production in *maquiladoras* (across-border export processing plants) created formal sector job opportunities for single women.

<sup>7</sup> The VHLSSs include data for a category of workers who reported as “work for other households,” which are used as a proxy for the “informal” wage workers.

Section 2 reviews the trends of FDI in Vietnam with a particular focus on the evolution of foreign employment compared to private and state enterprises. Section 3 estimates a series of Mincerian earnings equations by different types of workers accounting for personal and other observable characteristics. Section 4 implements a worker-specific fixed-effects model to control for unobservable individual specific characteristics. Section 5 presents my conclusions.

## **2. Employment Effects of FDI in Vietnam**

Although Vietnam received substantial FDI inflow in the 1990s, the contribution of FDI to employment was limited (Jenkins, 2006). Some economists attribute the slow growth of foreign jobs in the 1990s to the capital-intensive and domestic-market-oriented nature of production under protectionist trade and investment regimes (Athukorala and Tien, 2012). In contrast, partly stimulated by the U.S.-Vietnam BTA (2001) and Vietnam's accession to the WTO (2007), the re-orientation of foreign firm activities toward export-oriented production in the 2000s appears to have had positive impacts on foreign employment growth. In 2001, the U.S.-Vietnam BTA came into effect with the United States extending Most-Favored-Nation (MFN) status to Vietnam. As a result, Vietnam's exports to the United States, in particular, those of labor-intensive manufactured goods such as clothing, footwear and furniture (in which Vietnam was likely to have a comparative advantage), expanded dramatically, and appears to have induced labor reallocation towards Vietnam's comparative advantage sectors (Fukase, 2013a; McCaig and Pavcnik, 2012). Vietnam's FDI inflow in the aftermath of the BTA experienced a disproportionately large increase in those sectors in which exports to the U.S. expanded (Parker, Riedel, and Quang, 2007).<sup>8</sup> Furthermore, a number of provisions specified in the BTA<sup>9</sup> and

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<sup>8</sup> FDI in the clothing, footwear and furniture sectors tripled from 6.2 percent (average 1996-2000) of total registered FDI to 18.6 percent (average 2001-2005). Although increasing in absolute terms, the share of these sectors in total FDI inflow decreased to around 12 percent in 2006, as FDI into more capital/skill intensive sectors expanded (Parker *et al.*, 2007, Figure 13, p.233).

commitments made in the negotiation process of Vietnam's accession to the WTO played a catalytic role in accelerating Vietnam's legal, regulatory and administrative reforms contributing to an improvement of Vietnam's investment climate (Parker *et al.*, 2007).

Table 1 and Figure 1.A-C compare the structure of formal "enterprise"<sup>10</sup> employment by ownership and by gender for the period 2000-2007. The percentages of female workers included in grid section in Table 1 are reported in parentheses. Since the implementation of the Enterprise Law (2000),<sup>11</sup> the number of workers employed by "enterprises" expanded substantially—from 3.5 million in 2000 to 7.4 million in 2007. The domestic private sector has become the largest source of enterprise employment with its employment rising from 1.0 million in 2000 to 3.9 million in 2007. Job creation in the foreign sector has been also strong, rising from 0.4 million in 2000 to 1.7 million in 2007. The pattern of foreign employment is characterized by its high female intensity and faster employment growth for female workers relative to male workers: the female intensity in foreign firm employment increased from 60.4 percent in 2000 to 67.5 percent in 2007. Perhaps reflecting trends of privatization and rationalization, the number of workers employed by SOEs, which was the largest source of enterprise employment up to the early 2000s, has declined in recent years.

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<sup>9</sup> The BTA provisions included requirements to encourage U.S. investment in Vietnam including: providing MFN or National Treatment (NT)-whichever was better for U.S. investors; improving investment licensing procedures and corporate governance regulations; non-discriminatory pricing; a series of safeguards for foreign investors including protection against expropriation and nationalization processes and the right to repatriate earnings; allowing access to international arbitration to resolve disputes and the elimination over time of trade-related investment measures (TRIMs) involving trade balancing, local content, and foreign exchange requirements, and market access provisions in key service sectors such as financial services, trading and distribution, telecommunications, and legal, consulting and engineering services (Parker *et al.*, 2007).

<sup>10</sup> The term "enterprise" is defined as "an economic unit that independently keeps business account and acquires its own legal status..." (GSO). The "enterprises" do not include *household* enterprises.

<sup>11</sup> The implementation of the Enterprise Law (2000) was a major step toward reducing numerous barriers to private business and has greatly encouraged the establishment of new enterprises (Ramstetter and Ngoc, 2007b). Since the Enterprise Law came into effect, the number of firms has increased from 42,288 in 2000 to 155,771 in 2007 (the *Enterprise Survey* data).



Panels B-D in Table 1 and Figure 2.A-C disaggregate the enterprise employment numbers by ownership and by economic sector.<sup>12</sup> Panel B of Table 1 and Figure 2.A show that foreign firm employment is mainly concentrated in the manufacturing sector, accounting for about 93.2 percent of total foreign employment in 2004.<sup>13</sup> In particular, Figure 2.A highlights the predominance of labor-intensive manufacturing in foreign employment and its rapid growth from 0.24 million in 2000 to 1.1 million in 2007. As foreign-owned enterprises are more likely to be engaged in international trade than domestic enterprises,<sup>14</sup> the concentration of employment generated by them in labor-intensive manufacturing may reflect Vietnam's comparative advantage in labor-intensive manufacturing. Further disaggregation reveals that a large percentage of Vietnam's foreign sector employment was concentrated in the clothing and footwear industries (47.1 percent in 2004), and that these industries have an exceptionally high proportion of female workers (84.8 percent in 2004). The high female-intensity in these industries undoubtedly skews the overall gender distribution for foreign employment in Vietnam.

Perhaps reflecting the growing importance of assembly activities by foreign firms in electronics and other high-tech industries (Athukorala and Tien, 2012), employment generated by foreign firms in the skill-intensive sector rose rapidly albeit from its small initial level, more than quadrupling from 0.054 million in 2000 to 0.25 million in 2007. As employment by foreign firms in the skill-intensive sector expanded at faster rates than corresponding employment by

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<sup>12</sup> The manufacturing sector is further disaggregated into labor-, capital-, and skill-intensive sectors. The labor-intensive sector includes textiles, apparel, footwear/leather products, wood products, furniture/miscellaneous manufacturing, metal products, and non-metallic mineral products. The capital-intensive sector is defined as comprising the mining, food products, basic manufacturing, and chemical, rubber, plastic products industries. The skill-intensive sector consists of electronics/machinery and transport equipment. See footnote 24 for the corresponding Vietnam Standards Industrial Classifications (VSICs).

<sup>13</sup> The statistics for the year 2004 is reported since it is the year of my empirical analyses.

<sup>14</sup> In their responses to the annual *Enterprise Survey*, 73.1 percent of foreign enterprises in manufacturing indicated that they had some direct exports in 2004 whereas the corresponding figures are 28.1 percent and 11.7 percent for state and for private enterprises respectively. 76.5 percent, 26.2 percent and 9.3 percent of foreign, state and private enterprises, respectively, had some direct imports in 2004.

domestic employers, the share of foreign sector employment in total skill-intensive employment accordingly rose from 35.3 percent in 2000 to 55.7 percent in 2007 suggesting the importance of foreign firms for upgrading Vietnam's industrial structure. It is also noted that, unlike domestic private and state enterprises, foreign-owned skill-intensive enterprises tend to employ more females than males, becoming another factor contributing to a rise in female intensity in foreign sector employment.<sup>15</sup> Overall, high export-orientation and high female intensity in foreign firms in Vietnam are consistent with the view that expansion of exports has boosted the demand for female labor in manufacturing in developing countries (e.g., Ozler, 2000; Rama, 2003; Wood, 1991).<sup>16</sup>

### **3. Impacts of Foreign Ownership on Wages**

#### **3.1. Data and Summary Statistics**

The *Vietnam Household Living Standard Survey 2004* (VHLSS 2004) was conducted by the GSO of Vietnam with the technical support of the World Bank and is generally recognized to be of high quality and representative of all of Vietnam. The VHLSS 2004 consists of 9,188 households of which about half were also represented in the sample for VHLSS 2002. Table 2 shows the summary statistics of individuals from 15 to 59 years of age who responded to the survey's ownership question. The ownership information is based on an individual's "most time-consuming job in the last 12 months". The ownership categories consist of "foreign", "state", "private", "informal wage", and "self-employment" sectors.<sup>17</sup> Table 2 reveals that the "formal"

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<sup>15</sup> This trend appears to reflect largely the employment expansion in certain export-oriented and female-intensive sectors such as electronics. For instance, in terms of the electrical machinery (VSIC 31), the female intensity among foreign firms registered at 80.5 percent in 2004 as opposed to 23.4 percent and 31.4 percent for private and state enterprises respectively (the *Enterprise Survey* data).

<sup>16</sup> Measuring the impact of North-South trade on the female intensity of manufacturing, Wood (1991) finds that developing countries which exported a rising proportion of their manufactured output tended to experience rising female intensity in their manufacturing sectors.

<sup>17</sup> The classification of ownership is based on the response to a question "for whom has [name] worked?" in the VHLSS 2004: "foreign" is referred to "foreign-invested sector"; "state" sector includes government and SOEs;

sector accounts for only a fraction of Vietnam's economy: the combined employment by "enterprises" and government absorbed about 17 percent of Vietnam's workers in 2004.

Table 2 shows that there is a substantial variation in terms of average worker age, gender, education, hourly wage and working hours according to ownership. Overall, Vietnam's workers of this sample are on average 35.0 years of age, attained 7.7 years of education, earned Vietnamese Dong (VND) 5,304 per hour,<sup>18</sup> and worked 34.8 hours per week.

On average, workers in the state sector are the most educated (with total education of 11.9 years) followed by foreign (10.4 years) and private (9.2 years) sector workers. The total education years for those who work in the informal sectors are lower, averaging 6.6 years and 7.1 years for the informal wage sector and self-employed workers respectively. Those who work for foreign-owned firms tend to be the youngest (27.5 years old on average), and 62 percent of them are female. In contrast, state workers are the oldest with an average age of 37.7 years.

The calculation of the average hours worked per week<sup>19</sup> reveals that those who work for the formal sector work clearly longer hours (45.1 hours, 42.2 hours, and 41.2 hours for foreign, private and state sectors respectively) relative to those in the informal sectors (35.1 hours for the informal wage sector and 33.0 hours for self-employment). The latter figures suggest that workers tend to be underemployed in Vietnam's informal sectors.

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"private" sector consists of "collective economic sector" and "private economic sector"; "informal wage" workers are assumed to be represented by those who responded to "work for other households"; "self-employed" includes those who answered "self-employment" and "working in his family owned company". No wage information is available for self-employed individuals.

<sup>18</sup> If the wages are converted into U.S. dollars using the average exchange rate in 2004 (U.S.\$1.00=VND 15,630), Vietnamese workers earned \$0.34 per hour on average. The average wage levels of workers who worked for state, foreign, private, and informal wage sectors were \$0.45, \$0.43, \$0.33 and \$0.25 respectively.

<sup>19</sup> "Hours worked per week" are computed by combining the hours worked for the first and second jobs.

Among Vietnam's wage workers,<sup>20</sup> the "informal wage" employers comprised the largest wage employment sector hiring about 6.8 million people in 2004.<sup>21</sup> Workers who worked for the state sector earned the highest hourly wage on average (VND 7,106) followed by workers working for the foreign (VND 6,783), private (VND 5,112) and informal wage sectors (VND 3,902).

Columns 2 and 3 of Table 2 report summary statistics by gender. The wage differential between men and women, known as the "gender gap", is relatively low as women earn on average an 11 percent lower wage relative to men for the whole sample. At first glance, women working in foreign firms appear to be experiencing the greatest degree of gender wage inequality as women are found to be paid about 40 percent lower wages relative to male counterparts whereas the gap is narrowest in the state sector (8 percent).<sup>22</sup>

Columns 4 and 5 of Table 2 disaggregate statistics by skill levels which are measured by whether or not the workers have upper-secondary educational attainment (12 grades completed with upper-secondary education diploma). The wage premium for skilled workers, defined as the relative wage of skilled to unskilled workers, is 176 percent for the whole sample. The skill premium is largest in the foreign sector (where skilled wages are 183 percent of unskilled wages) and lowest for those who work for the informal wage sector (132 percent).

### **3.2. Model Specification**

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<sup>20</sup> About 31 percent of Vietnam's workers held a wage job as the first job in 2004. The remaining 69 percent were self-employed of which about 73 percent worked in agriculture/fishery/forestry activities.

<sup>21</sup> The figure is computed using the household weights available in the VHLSS 2004. The corresponding figures are 0.7 million for "foreign", 4.8 million for "state" (including government and SOEs), and 2.4 million people for "private" sector employers. The number of workers employed by foreign firms computed from the VHLSS 2004 is smaller than that taken from the *Enterprise Survey* data (see Table 1), most likely because the VHLSS data exclude migrants who hold a temporary or no registration status.

<sup>22</sup> The large gender gap in the foreign sector partly reflects the younger average age of female workers relative to male in this sector and the low-wage industries for which women work. Controlling for personal and other characteristics, the gender gap is found to be largest in the informal wage sector followed by foreign and domestic private sectors (see Sub-section 3.3 below).

The wage comparison analysis based on simple average wages is potentially misleading since the wage rates are greatly influenced by individual characteristics, industries, and locations. Thus, I turn to Mincerian wage regression analyses of the form:

$$\ln W_i = \alpha \text{Ownership}_i + \beta X_i + \gamma \text{ES}_i + \delta \text{Location}_i + \varepsilon_i \quad (1)$$

where  $W_i$  is an individual  $i$ 's wage,  $\text{Ownership}_i$  is a series of dummy variables for the ownership categories (foreign, state, private, and informal wage);  $X_i$  is a vector of individual specific characteristics including gender, ethnicity, years of schooling, potential experience,<sup>23</sup> and marital status;  $\text{ES}_i$  is a series of dummy variables for the Vietnam Standard Industrial Classification (VSIC) sub-sector;<sup>24</sup> and  $\text{Location}_i$  consists of two city and eight regional dummy variables<sup>25</sup> and a dummy variable for whether or not the worker lives in an urban area; and  $\varepsilon_i$  is the error term.

### 3.3. Regression Results

In this sub-section, I present the results of two sets of Mincerian earnings regressions. The first set of regressions includes all the wage workers in the sample, and estimates the wage differentials between the foreign and informal wage sectors. The second set of regressions repeats the same models for the subset of workers in the formal sector and evaluates the wage differentials between foreign and domestic (formal) private sectors. The latter results are

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<sup>23</sup> Potential experience is calculated as age minus six minus education years.

<sup>24</sup> The VSIC sub-sector dummies consist of: agriculture/forestry/fishery (1, 2, 5), mining (10, 11, 13, 14), food products (15, 16), textiles (17), apparel (18), footwear and leather products (19), wood products (20), non-metallic mineral products (26), metal products (28), basic manufacturing (21, 22, 23, 27, 40, 41), chemical, rubber, plastic products (24, 25), electronics and machinery (29, 30, 31, 32, 33), transport equipment (34, 35), furniture and miscellaneous manufacturing (36, 37), construction (45), sales (50, 51, 52), hotel and restaurant (55), transportation (60, 61, 62, 63, 64), finance and consulting (65, 66, 67, 70, 71, 72, 73, 74, 90, 99), public (75, 80, 85, 91), and other services (92, 93, 95). Between parentheses are the VSIC codes at the two digit level.

<sup>25</sup> The dummies consist of: Hanoi, Ho Chi Minh City (HCMC), Red River Delta other than Hanoi, North East, North West, North Central Coast, South Central Coast, Central Highlands, South East other than HCMC and Mekong River Delta.

reported for the purpose of comparison, since most of the previous studies compared wage differentials within formal establishments.

One limitation of this study relative to firm-level analyses is that my regressions do not control for firm characteristics because the information on the firms for which individuals work is not available. Thus, the coefficients for the foreign dummy would capture some firm characteristics correlated with foreign ownership such as higher capital intensity and larger firm size (Ramstetter and Ngoc, 2007a). Since the focus of this study is to evaluate the impacts of foreign firms on Vietnam's labor market, it would not be essential to this study to determine whether foreign firms' higher wages are attributed purely to ownership or to other firm characteristics associated with foreign ownership.<sup>26</sup>

Columns 1-3 in Table 3 show the results of a series of regressions to evaluate the impacts of foreign ownership on wages for the full sample. The "informal wage" sector is the omitted ownership category. The first column in Table 3 demonstrates the results controlling for a series of individual characteristics. The results exhibit the expected properties: the education years are positively associated with wage; the impact of potential experience is positive but faces a diminishing return; and female workers and ethnic minority people are paid less even controlling for other personal characteristics. The coefficient for the foreign dummy is found to be positive and statistically significant at the one percent level.

If foreign firms are associated with relatively high (low) wage industries, omitting industry variables would lead to the upward (downward) bias of the coefficients estimate of foreign ownership. Column 2 in Table 3 introduces industry dummies as explanatory variables following

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<sup>26</sup> Lipsey (2004) suggests that it is better not to control for too many variables when answering a policy question such as whether or not a country should promote FDI. Whereas a country is concerned about whether foreign firms bring benefits to a host country, it may be less relevant whether it is because of, for instance, scale, productivity or capital intensity. It might be the case that larger, more productive and more capital-intensive domestic firms also pay higher wages, but such firms are scarce in developing countries (Lipsey, 2004).

Krueger and Summers (1988).<sup>27</sup> The results show that the magnitude of the coefficient for the foreign dummy increased with the inclusion of industry variables. A potential explanation is that the jobs generated by foreign firms during the period reflected by the VHLSS 2004 are disproportionately represented by low-wage industries. Thus, controlling for industry affiliation, the estimated effect of foreign ownership may well increase as a negative omitted variable bias is removed.

Column 3 in Table 3 shows the results introducing the impact of location on wages. With the inclusion of urban and regional dummies, the effect of foreign ownership is reduced. The latter result is consistent with the view that higher wages by foreign firms are partly attributed to the relatively high-wage areas where foreign enterprises are typically located. Therefore, the coefficient for the foreign dummy might be reduced by attributing higher wages to locations rather than to foreign ownership. Using regression (3) as a basic model, foreign firms are found to pay about 46 percent<sup>28</sup> higher wages relative to similar workers in the informal wage sector. The wage premiums are highest for foreign firms followed by state and private organizations.

Columns 4-6 in Table 3 report the regression results for a subset of workers employed in the formal sector so that the sample is roughly comparable to the firm-level analysis (e.g., Ramstetter and Ngoc, 2007a). The domestic private sector is the omitted ownership category. Restricting the sample to workers in the formal sector, the foreign wage premium relative to the domestic “private” sector is estimated to be 30 percent.

Columns 1-5 in Table 4 report the regression results by subsets of workers with different educational attainments, namely, college/university graduates, workers who have diplomas for upper-secondary, lower-secondary and primary education, and those without any school degree.

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<sup>27</sup> Krueger and Summers (1988) use cross-sectional and longitudinal data and demonstrate that industry wage differentials are substantial after controlling for detailed individual characteristics.

<sup>28</sup> 0.38 in log terms.

These results show that the higher the individual workers' levels of education, the larger the wage premiums are for those who work for foreign firms: the effect of foreign ownership is about 108 percent higher wages relative to the informal wage sector for college/university graduates, 45 percent for those with upper-secondary education, 43 percent and 40 percent for those with lower-secondary and primary educations respectively, and around 31 percent for workers without primary education. The qualitative results are similar for the subset of workers in the formal sector (column 6-10 in Table 4).

Higher rewards for workers with higher educational achievement in foreign firms are broadly consistent with the previous literature which finds that the foreign wage premium rises with skill (e.g., Lipsey and Sjöholm (2004) for Indonesia, Velde and Morrissey (2003) for five African countries, and Zhao (2002) for China). A potential explanation for higher wages for workers with higher educational attainment is that, as foreign firms tend to employ more advanced and/or capital-intensive technologies relative to domestic counterparts, this in turn may lead to an increase in demand for skills associated with higher educated workers through technology-skill and/or capital-skill complementarity. Another potential explanation is that, since foreign firms have limited understanding of local labor, they may be more likely to reward observable skills such as educational attainment (Velde and Morrissey, 2003). However, pooling the sample across genders may mask differential impacts of foreign ownership and education on wages by gender. Thus, I turn to the analyses by gender and by skill levels below.

Whereas it is generally observed that export-oriented production tends to create jobs disproportionately for women in developing countries (see Section 2 above), the wage effect of FDI on women is controversial. Some observers feel that foreign firms segregate women into inferior jobs which demand little skill, pay low wages and require long working hours. Others



hold that export processing activities (most likely to include those by foreign firms) may provide women with higher earning opportunities relative to an alternative job in the informal sector (e.g., Glick and Roubaud, 2006; Madani, 1999). However, the previous studies usually did not differentiate the impacts of foreign ownership on wages by gender.<sup>29</sup>

Columns 1-2 in Table 5 show the regression results run separately by gender comparing the foreign wage levels to those in the informal wage sector. Foreign firms appear to pay higher wages for both male and female workers, as the coefficients for the foreign dummy turn out to be positively significant at the one percent level. The wage differentials between the foreign sector and the informal wage sector are found to be larger for females at around 58 percent relative to 43 percent for males. In fact, women seem to experience a generally higher “formal wage premium” as the coefficients for foreign, state and private dummies all turn out to be larger for women than for men. This suggests that the lower wages in the informal sector for women are likely to be the source of larger foreign-wage premiums for women relative to men.

In order to investigate further the source of wage differentials, columns 3-4 and columns 5-6 in Table 5 report the results of gender-specific regressions run by subsets of skilled workers (with at least an upper-secondary education diploma) and unskilled workers (without upper-secondary education) respectively. The gender difference in the foreign wage premium is particularly large for the subset of unskilled workers (57 percent for women vs. 31 percent for men), suggesting that foreign employment provides higher earnings opportunities for unskilled women relative to unskilled men. The results of the Wald Tests in Table 5 indicate that the equality of the

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<sup>29</sup> One exception is a study by Braunstein and Brenner (2007) which compares the foreign wage premiums by gender in urban China in 1995 and 2002. Using province-level macro data and household survey data for 1995 and 2002, Braunstein and Brenner find that women received a higher foreign wage premium than men did in 1995, perhaps because FDI in export-oriented and female-dominated industries raised labor demand for women. However, after China committed to opening domestic markets in preparation for WTO accession in 2001, gender-based advantages reversed, as foreign investment in more capital- or technology-intensive sectors grew by 2002 to more greatly advantage workers in male-dominated than in female-dominated industries (Braunstein and Brenner, 2007).

coefficients between men and women is rejected only for the subset of unskilled workers, confirming the higher foreign wage premium for unskilled women relative to unskilled men.

The second panel in Table 5 reports the results of the gender-specific regressions restricting the samples to the formal sectors for both skilled and unskilled workers (columns 7-8), for the subset of skilled workers (columns 9-10) and for the subset of unskilled workers (Columns 11-12). The private domestic sector is the omitted ownership category. It is found that the foreign wage premiums in the formal sectors are similar for men and women for all the samples (the results of the Wald tests do not reject the equality of foreign wage premium between male and female); and that the premiums are larger for skilled workers than unskilled workers for both genders.

Appendix Table 1 reports the foreign wage differentials by gender and by five educational attainments and the qualitative results turn out to be similar to the results in Table 5.<sup>30</sup> In summary, the wage gains resulting from working in the foreign sector are larger for women at low skill levels, but the higher female foreign wage premium disappears or even is reversed both at higher levels of education and when the sample is restricted to the formal sector. These results are consistent with Glick and Roubaud (2006)'s finding that Zone Franche (the Export Processing Zones (EPZs)) employment in Madagascar represents a significant step-up in pay for women (especially for those with low but not zero levels of schooling) who would otherwise be engaged in low-wage informal sector work.<sup>31</sup>

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<sup>30</sup> The results for the subset of male workers in Appendix Table 1 reveal that foreign wage premiums relative to informal wage sector increase markedly with the level of educational attainment (columns 1-5 in Panel A). In contrast, among female workers, no clear relationship is observed between the level of educational attainment and foreign wage premium relative to informal wage sector (columns 1-5 in Panel B). Restricting the samples to the formal sector (columns 6-10 in Panel A and Panel B), the positive association between educational attainment and foreign wage premium are broadly observed for both men and women.

<sup>31</sup> Whereas foreign sector and EPZ sector are not the same, insights from Glick and Roubaud (2006) are relevant here in terms of earning opportunities for women in export-oriented production relative to informal wage sector jobs. Glick and Roubaud (2006) suggest that the EPZ may possibly have a significant impact on poverty as it provides relatively high wage opportunities for women with relatively low levels of schooling. Further, by

A question arises why women are poorly remunerated especially in the informal wage sector. A potential explanation is that jobs in the latter sector tends to involve work of a low-skilled or elementary nature,<sup>32</sup> and physical strength may matter more in such jobs than in factory employment or more mental-labor intensive jobs (e.g., Fan and Lui, 2003; Galor and Weil, 1996; Goldin and Sokoloff, 1982).<sup>33</sup> For instance, using agricultural wage data available in the *Vietnam Living Standard Survey* (VLSS) 1998, Brassard (2004) finds that the wage gap between genders is particularly high for physically demanding work, such as land preparation and crop harvesting. Following Fan and Lui (2003), I ran four separate Mincerian regressions by ownership categories for Vietnam assuming that the coefficient estimates of the female dummy captures the unexplained part of the gender gap. The results reveal that, controlling for personal and other characteristics, the gender gap is largest in the informal wage sector as the average female worker earns about 23.6 percent lower wages relative to her male counterpart. The gender gaps are found to be about 15.0 percent for foreign and domestic private sectors. Other things equal,

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disproportionately drawing women from the low-wage informal sector (where the gender gap is very large) to a higher wage sector, the EPZ has the potential to contribute to narrowing the gender gap (Glick and Roubaud, 2006).

<sup>32</sup> The largest sources of informal wage employment for males were construction (36 percent), agriculture/forestry/fishery (27 percent) and transportation (7 percent) whereas those for females were agriculture/forestry/fishery (37 percent), other services (10 percent) and sales (9 percent) in 2004 (the VHLSS 2004).

<sup>33</sup> Some economists relate the evolution of relative wages of females to women's changing comparative advantage as economies develop (Fan and Lui, 2003; Galor and Weil, 1996; Goldin and Sokoloff, 1982). They argue that when economic structure changes, rewarding the attributes in which women have a comparative advantage, this in turn leads to a narrowing gender gap in wages. The common assumption in the literature is that men are relatively better endowed for their performance of physical labor whereas men and women are equally endowed for mental labor. Thus, females have a comparative advantage in sectors which require less physical labor. A historical illustration which supports this view may be found in the early stages of industrialization in the U.S.. Goldin and Sokoloff (1982) argue that rising demand for unskilled labor in manufacturing during the first half of the nineteenth century in the U.S., in particular in female-intensive manufacturing such as was found in the cotton and wool textile industries, drew female workers from agriculture (where women had less comparative advantage), and that both the relative wage of females and labor force participation rates for females increased during the same period. Fan and Lui (2003) develop a model focusing on different endowments in physical labor and mental labor in determining occupational choices and show that the gender gap is smaller in occupations and industries in which physical labor is less intensively used. Using the 1981 and 1991 Hong Kong population censuses, Fan and Lui (2003) suggest that the reduction in the gender gap in Hong Kong SAR, China during this period is attributable to its structural change from a manufacturing- to a service-oriented economy in favor of women's comparative advantage. Running Mincerian earnings equations separately on the subsets of industrial sectors, they show that gender gaps were much larger in primary and manufacturing sectors (where physical labor is more intensively used) than in service sectors, which are more mental labor intensive.

female workers in state sector jobs received 7.9 percent higher wages relative to their male counterparts (regressions are not reported). Vietnam's gender gap pattern is consistent with the view that the gender gap tends to be large in physical-labor-intensive and elementary jobs but may decrease in jobs which require higher levels of schooling.

### **3.4. Alternative Specifications**

This sub-section runs a series of additional regressions to test the robustness of the results and other related issues. Column (1) in Table 6 reports the results of the basic model (regression (3) in Table 3) for the purpose of comparison. The informal wage sector is the omitted ownership category.

Column (2) investigates the impacts of foreign ownership on *weekly* wages which in turn reflect both the compensation per unit of time and the hours worked per week. The foreign wage premium increases from 46 percent in the basic model to 80 percent, suggesting that the increased hours of work relative to working in the informal sector are an important source of income gains.

Column (3) reports the result of a regression addressing a potential sample-selection problem into the wage sector using Heckman's two-step procedure (Heckman, 1979).<sup>34</sup> The coefficient for the selection term turns out to be positively significant implying that individuals selected into wage employment earn higher wages than those with similar observable characteristics randomly drawn from the population. However, the coefficient for the foreign dummy remains essentially unchanged.

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<sup>34</sup> In the first stage, a probit model is used to determine the selection process from self-employment into wage employment. For the purpose of identification, the variables which are likely to influence the selection process but not wages, namely the non-labor household income and agricultural/forestry land and water surface for aquaculture, are included. In the second stage, the selection correction term for the wage earners is calculated from the probit model and is included in the wage equation.

Column (4) introduces the interaction terms between education and ownership allowing for an analysis of ownership-specific returns to education. The estimated impacts of additional schooling seem to be largest in the state sector and lowest in the informal wage sector. The positive slope of the interaction term between foreign ownership and education confirms that the impact of foreign ownership on wage rises with educational attainment. The implied wage premium relative to informal wage sector turns out to be largest for the foreign sector at around 58 percent<sup>35</sup> followed by state (52 percent) and private sectors (13 percent).

## 4. Panel Data Analyses

### 4.1. Model Specification

A series of cross-sectional regressions in Section 3 compared the wage levels of individuals working in different employer ownership categories, controlling for observable personal and other characteristics. One of the limitations of this approach is that the coefficient for the foreign dummy is biased if some unobservable characteristics (e.g., ability, willingness to work harder) are correlated with foreign ownership.

In order to address selectivity bias, several recent studies use matched employer-employee panel data and trace the change in wages of *identical* individuals over time. Some studies compare the wage growth of workers whose employers experience foreign takeover with that of workers whose employers do not. For instance, Andrews *et al.* (2009) find that the takeover effect is small in Germany; and Martins (2004) and Heyman *et al.* (2007) show that the wage consequences of the acquisition of domestic firms may even be negative in Portugal and in Sweden respectively. Other studies focus on worker mobility between foreign and domestic firms to identify the wage effect. For instance, using matched employer-employee panel data for

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<sup>35</sup> The effect of foreign ownership in the log term is calculated at the sample mean of education level:  $0.46 \approx -0.029 + 10.4 * 0.047$ .

Portugal, Martins (2011) finds that workers who move from a domestic to a foreign firm receive a considerable pay increase. However, few studies trace the same individuals in developing countries,<sup>36</sup> perhaps due to data constraints.

This section examines how wages of *identical* individuals would have changed as they “switch” between domestic and foreign sectors by exploiting a panel of individuals in the VHLSS 2002 and 2004.

I estimate a worker-specific fixed-effects model of the type used by Korenman and Neumark (1991) and Lemieux, MacLeod and Parent (2009). I start with equation (1) and introduce the time invariant individual specific characteristics  $\eta_i$  which may be correlated with independent variables.

$$\ln W_{it} = \alpha \text{Ownership}_{it} + \beta X_{it} + \gamma ES_{it} + \delta \text{Location}_i + \eta_i + \varepsilon_{it} \quad (2)$$

where  $i$  and  $t$  index individuals and years (2002 and 2004) respectively.  $W_{it}$  is an individual’s wage;  $\text{Ownership}_{it}$  are a series of dummy variables reflecting ownership (foreign, state, private, and informal wage);  $X_{it}$  is a vector of individual characteristics;  $ES_{it}$  and  $\text{Location}_i$  are a set of industry and location dummy variables defined in equation (1) and  $\eta_i$  is an unobservable time-invariant individual characteristic of individual  $i$ .

In order to remove the individual-specific effect  $\eta_i$ , a first-difference is taken between the years 2002 and 2004, and then the parameters will be estimated via Ordinary Least Squares (OLS).

$$\Delta \ln W_i = \alpha \Delta \text{Ownership}_i + \beta \Delta X_i + \gamma \Delta ES_i + \Delta \varepsilon_i \quad (3)$$

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<sup>36</sup> The results of some studies based on *firm-level* panel data suggest that impacts of foreign ownership in labor markets may differ between developed and developing countries (Almeida, 2007). For instance, using the panel of Indonesian manufacturing data to control for unobserved plant level characteristics, Lipsey and Sjöholm (2006) find that acquisition of Indonesian plant leads to substantially higher average wages of employees in acquired firms. Their results contrast with those for European countries which tend to find much smaller wage effects of foreign acquisition on employees (e.g., Almeida (2007) for Portugal, Conyon, Girma, Thompson and Wright (2002) for the United Kingdom).

It is noted that, through differencing, the individual specific characteristics  $\eta_i$  and the other time-invariant explanatory variables (e.g., gender, ethnicity) are eliminated. Since education levels do not change much for adults and everybody is two years older in 2004, human capital variables such as education and potential experience are not included.<sup>37</sup> *Location*<sub>*i*</sub> dummies are also discarded since the households who moved out between 2002 and 2004 were not usually interviewed in 2004. If the individual did not change the ownership category of his or her employment, the ownership term also drops out. Thus, the coefficients  $\alpha$  are identified only from those who “switched” between different ownership categories.

#### **4.2. Data and Summary Statistics**

Out of the individuals whose ages range 15-59 in the VHLSS 2004, 10,526 persons are matched as having appeared in the VHLSS in both 2002 and 2004.<sup>38</sup> Table 7 demonstrates how these individuals changed their employment/ownership status, showing the numbers of individuals for each cell by the status in 2002 (by row) and 2004 (by column). Of 10,526 panel individuals, about three quarters stayed in the same employment/ownership status, and the remaining quarter either changed employment status (unemployed<sup>39</sup>/employed) or the ownership category in which they work as the first job. Out of 109 individuals who reported working for foreign firms in 2004 (column 1 in Table 7), 36 individuals also worked for the foreign sector in 2002. Among 73 individuals who newly entered into foreign sector employment in 2004, 17 persons were students

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<sup>37</sup> The differential impacts of personal characteristics on wage growth depending on ownership may be estimated through the interaction terms between ownership and personal characteristics (Lemieux *et al.*, 2009). However, since the coefficients of interaction terms between ownership and education turn out to be individually and jointly insignificant, these terms are not included in the regressions either.

<sup>38</sup> Since there exist some errors in the panel identifiers in the original dataset, I used the revised identifier codes provided by McCaig (2009) to match the individuals between 2002 and 2004. Then, I eliminated some observations whose information on gender, age and education are inconsistent. In order to mitigate further the measurement error, I dropped one percent of individuals who experienced the largest wage changes. However, the regression results are not sensitive to these adjustments.

<sup>39</sup> “Unemployed” includes those who responded in the VHLSS 2004 as “do housework”, “don’t work since being too old/retired”, “disabled”, “unable to find a job” and “others”.

in 2002, 29 persons came from formal sectors (12 from state and 17 from private sector work),<sup>40</sup> and 23 persons moved from informal sectors (8 from informal wage jobs and 15 from self-employment). These figures may understate the number of individuals who moved from informal sector work since the VHLSS data exclude some substantial number of migrants.<sup>41</sup>

Panel A in Table 8 reports the differences in log hourly wages<sup>42</sup> for 1,754 panel individuals who had wage information in both years by the ownership category in 2002 and by that in 2004. Overall, Vietnamese wage workers in the sample experienced hourly wage growth rate of 21 percent between 2002 and 2004. Those who worked in the state sector in 2004 experienced the highest hourly wage growth rate (26 percent), mainly reflecting the wage increase for those who worked for the state sector in 2002 and 2004. Those who stayed within and moved into the foreign sector experienced a 20 percent wage growth rate. Individuals who moved from the informal wage sector jobs into the foreign-owned sector experienced the largest hourly wage growth at about 40 percent. Conversely, those who moved from foreign to domestic sector jobs appear to have experienced smaller wage gains relative to the average wage growth. The pattern of wage change is broadly consistent with the study by Martins (2011) for Portugal, which reports that movers from domestic to foreign firms tend to experience pay increases whereas movers from foreign to domestic firms may experience a pay cut when they move.

Panel B in Table 8 demonstrates the differences in the log *weekly* wages for the panel individuals which in turn reflect the changes in both hourly wages and hours worked. The average weekly wage growth of 23 percent is slightly higher than the average hourly wage

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<sup>40</sup> For changes in ownership categories within the formal sectors, the changes may reflect either the change in nationality of the establishment for which an individual works or individual's move from one sector to another.

<sup>41</sup> The VHLSS is likely to exclude migrants who hold a temporary or no registration status since the sampling of the surveys is limited to the households who had permanent registration status. Based on the *Vietnam Migration Survey* (VMS) data in 2004, Fukase (2013b) finds that only 10 percent of migrants who work for foreign firms possess permanent registration status.

<sup>42</sup> The wages are converted to January 2002 constant prices using the deflators available in the VHLSS.



growth rate of 21 percent. Those who stayed within or moved into the foreign sector appear to have experienced the largest weekly wage growth at around 31 percent, partly reflecting an increase in working hours for those who moved into foreign sector jobs from the other wage sectors.

### **4.3. Regression Results for the Fixed-Effects Model**

Table 9 demonstrates the results of worker-specific fixed-effects regressions to estimate the impacts of the changes in employer ownership category on hourly wage growth and weekly wage growth in columns (1) and (2) respectively. The result in regression (1) shows that the impact of foreign ownership on hourly wage growth is positive but is not statistically significant at the conventional level, perhaps due to the small number of individuals who moved between foreign and domestic sectors. Column (2) reports the regression result evaluating the impacts of ownership on weekly wage growth rate. Here, the coefficient for foreign ownership turns out to be positively significant at the five percent level, implying that foreign ownership is associated with higher weekly wage growth rate of about 19 percentage points. Controlling for unobserved worker-specific characteristics, the fixed-effects estimates of the impacts of foreign ownership are much smaller than the cross-sectional estimates. The lower estimates of the foreign premium found in the fixed-effects model may arise because some portion of the cross-sectional foreign premium may be attributable to unobservable characteristics of individuals that are positively correlated with both foreign ownership and wages. However, further studies would be required to confirm these hypotheses since the foreign wage effect in my regression is identified only by a small number of “switchers”.

## **5. Conclusions**

This paper investigates the differential impacts of foreign ownership on wages for different types of workers in Vietnam using the *Vietnam Household Living Standards Surveys* (VHLSS) of 2002 and 2004. Most of the previous studies analyzing the impacts of foreign ownership on wages used firm-level data and did not consider the wage effects for those working in informal sectors. This paper intends to fill the gap in the literature extending the wage comparison analysis to workers in the informal wage sector.

A series of Mincerian earnings equations and worker-specific fixed effects models are estimated and their results are generally consistent with those from previous literature. Foreign firms are found to pay higher wages relative to domestic counterparts given observable characteristics of workers. The effects of foreign ownership on hourly wages are estimated to be about 30 percent and 46 percent higher wages relative to wages paid to similar workers employed with domestically-owned private firms and those working in the informal wage sector respectively. It is also found that the higher the individual workers' levels of education, the larger *on average* the wage premiums are for those who work for foreign firms.

The inclusion of workers in the informal wage sector in the sample reveals additional insights on the impact of foreign firms on wages that were overlooked by previous firm-level studies. In particular, as Vietnamese workers in the informal sector tend to be underemployed, the increased hours of work resulting from obtaining foreign firm jobs relative to working in the informal wage sector appears to be an important source of earnings gains.

Finally, women with lower levels of education are found to experience a larger foreign wage premium (relative to their male counterparts and relative to the informal wage sector), reflecting their low earnings opportunities and higher gender gap in the latter sector. One limitation of this study is that it focuses only on wages and does not evaluate other working conditions such as

quality of work. Another limitation is that the data exclude self-employed individuals and some substantial portion of migrants. Nevertheless, this study suggests that higher wages paid by foreign firms to unskilled women relative to alternative jobs in the informal sector may be among the factors which drew women disproportionately toward foreign job opportunities in Vietnam.

### Reference

- Almeida, R. (2007), 'The Labor Market Effects of Foreign Owned Firms,' *Journal of International Economics*, **72**, 75-96.
- Anderson, J. B. and D. Dimon. (1999), 'Formal Sector Job Growth and Women's Labor Sector Participation: the Case of Mexico,' *The Quarterly Review of Economics and Finance*, **39**, 169-191.
- Andrews, M., L. Bellmann, T. Schank and R. Upward. (2009), 'The Takeover and Selection Effects of Foreign-owned Establishments: an Analysis Using Linked Employer-Employee Data,' *Weltwirtschaftliches Archiv*, **145**, 293-317.
- Athukorala, P. and T. Q. Tien. (2012), 'Foreign Direct Investment in Industrial Transition: the Experience of Vietnam,' *Journal of the Asia Pacific Economy*, **17**, 3, 446-463.
- Brassard, C. (2004), 'Wage and Labour Regulation in Vietnam within the Poverty Reduction Agenda,' National University of Singapore.
- Braunstein, E. and M. Brenner. (2007), 'Foreign Direct Investment and Gendered Wages in Urban China,' *Feminist Economics*, **13**, 3-4, 213-237.
- Conyon, M., S. Girma, S. Thompson and P. Wright. (2002), 'The Productivity and Wage Effects of Foreign Acquisition in the United Kingdom,' *Journal of Industrial Economics*, **50**, 85-102.
- Fan, C. S. and H. Lui. (2003), 'Structural Change and the Narrowing Gender Gap in Wages: Theory and Evidence from Hong Kong,' *Labour Economics*, **10**, 609-626.
- Fu, X. and V. N. Balasubramanyam. (2005), 'Exports, Foreign Direct Investment and Employment: the Case of China,' *The World Economy*, **28**, 4, 607-625.
- Fukase, E. (2013a), 'Export Liberalization, Job Creation and the Skill Premium: Evidence from the U.S.-Vietnam Bilateral Trade Agreement (BTA),' *World Development*, **41**, 1, 317-337.
- Fukase, E. (2013b), 'Foreign Job Opportunities and Internal Migration in Vietnam,' *Policy Research Working Paper*, forthcoming, the World Bank.

- Galor, O. and D. N. Weil. (1996), 'The Gender Gap, Fertility and Growth,' *American Economic Review*, **86**, 374-387.
- General Statistics Office. (2010), *Statistical Yearbook of Vietnam 2010*, Hanoi: Statistical Publishing House.
- Glick, P. and F. Roubaud. (2006), 'Export Processing Zone Expansion in Madagascar: What are the Labour Market and Gender Impacts?' *Journal of African Economies*, **15**, 4, 722-756.
- Goldin, C. and K. Sokoloff. (1982), 'Women, Children, and Industrialization in the Early Republic: Evidence from the Manufacturing Censuses,' *The Journal of Economic History*, **XLII**, 4, 741-774.
- Heckman, J. (1979), 'Sample Selection Bias as a Specification Error,' *Econometrica*, **47**, 153-161.
- Heyman, F., F. Sjöholm and P. G. Tingvall. (2007), 'Is There Really a Foreign Ownership Wage Premium? Evidence from Matched Employer-Employee Data,' *Journal of International Economics*, **73**, 355-376.
- Jenkins, R. (2006), 'Globalization, FDI and Employment in Vietnam,' in *Transnational Corporations*, **15**, 1, 115-142. UNCTAD.
- Korenman, S. and D. Neumark. (1991), 'Does Marriage Really Make Men More Productive?' *The Journal of Human Resources*, **26**, 2, 282-307.
- Krueger, A. B. and L. H. Summers. (1988), 'Efficiency Wages and the Inter-Industry Wage Structure,' *Econometrica*, **56**, 2, 259-94.
- Lemieux T., B. W. MacLeod and D. Parent. (2009), 'Performance Pay and Wage Inequality,' *The Quarterly Journal of Economics*, **124**, 1, 1-49.
- Lipsey, R. E. (2004), 'Home and Host Country Effects of Foreign Direct Investment,' in R. E. Baldwin and L. A. Winters (eds.), *Challenges to Globalization: Analyzing the Economics*, 333-379. Chicago and London: University of Chicago Press.
- Lipsey, R. E. and F. Sjöholm. (2004), 'Foreign Direct Investment, Education, and Wages in Indonesian Manufacturing,' *Journal of Development Economics*, **73**, 1, 415-422.
- Lipsey, R. E. and F. Sjöholm. (2006), 'Foreign Firms and Indonesian Manufacturing Wages: An Analysis with Panel Data,' *Economic Development and Cultural Change*, **55**, 1, 201-221.
- Madani, D. (1999), 'A Review of the Role and Impact of Export Processing Zones,' *World Bank Policy Research Working Paper*, **2238**.

- Martins, P. S. (2004), 'Do Foreign Firms Really Pay Higher Wages? Evidence from Different Estimators,' *The Institute for the Study of Labor (IZA) Discussion paper*, **1388**.
- Martins, P. S. (2011), 'Paying More to Hire the Best? Foreign Firms, Wages and Worker Mobility,' *Economic Inquiry*, **49**, 2, 349-363.
- McCaig B. and N. Pavcnik. (2012), 'Export Markets and Labor Allocation in a Poor Country,' Mimeo.
- McCaig, B. (2009), 'The Reliability of Matches in the 2002-2004 Vietnam Household Living Standards Survey Panel,' *Discussion Paper*, **622**, The Australian National University, Centre for Economic Policy Research.
- Nguyen N. A. and T. Nguyen. (2007), 'Foreign Direct Investment in Vietnam: An Overview and Analysis the Determinants of Spatial Distribution across Provinces,' ([http://mpra.ub.uni-muenchen.de/1921/01/MPRA\\_paper\\_1921.pdf](http://mpra.ub.uni-muenchen.de/1921/01/MPRA_paper_1921.pdf)).
- Ozler, S. (2000), 'Export Orientation and Female Share of Employment: Evidence from Turkey,' *World Development*, **28**, 7, 1239-1248.
- Parker, S., J. Riedel and P. V. Quang. (2007), 'Assessment of the Five-Year Impact of the U.S.-Vietnam Bilateral Trade Agreement on Vietnam's Trade, Investment, and Economic Structure,' a report by STAR-Vietnam project. ([www.amchamvietnam.com/download/906](http://www.amchamvietnam.com/download/906))
- Rama, M. (2003), 'Globalization and Workers in Developing Countries,' *World Bank Policy Research Working Paper*, **2958**.
- Ramstetter, E. D. and P. M. Ngoc. (2007a), 'Employee Compensation, Ownership, and Producer Concentration in Vietnam's Manufacturing Industries,' *Working Paper*, **2007-07**, Kitakyushu: International Centre for the Study of East Asian Development.
- Ramstetter, E. D. and P. M. Ngoc. (2007b), 'Changes in Ownership and Producer Concentration after the Implementation of Vietnam's Enterprise Law,' *Working Paper*, **2007-06**, Kitakyushu: International Centre for the Study of East Asian Development.
- UNCTAD. *Foreign Direct Investment Database* online. (<http://www.unctad.org>)
- Velde, D. W. te. and O. Morrissey. (2003), 'Do Workers in Africa Get a Wage Premium if Employed in Firms Owned by Foreigners?' *Journal of African Economics*, **12**, 1, 41-73.
- Wood, A. (1991), 'North-South Trade and Female Labour in Manufacturing: An Asymmetry,' *Journal of Development Studies*, **27**, 2, 168-189.
- Zhao, Y. (2002), 'Earnings Differentials Between State and Non-state Enterprises in Urban China,' *Pacific Economic Review*, **7**, 1, 181-197.

*Table 1*  
*Structure of Enterprise Employment for the Period 2000-2007* (1,000s of employees)

	2000	2001	2002	2003	2004	2005	2006	2007
<b>A. Total Enterprises</b>								
Agriculture/fishery/forestry	267.3 (35.5)	264.2 (38.5)	265.8 (38.1)	252.1 (39.8)	256.1 (38.3)	259.1 (37.8)	256.4 (37.8)	253.3 (38.2)
<b>Manufacturing Total</b>	<b>1823.1</b> (53.9)	<b>2014.0</b> (54.2)	<b>2440.7</b> (54.9)	<b>2806.6</b> (55.9)	<b>3161.9</b> (55.6)	<b>3369.9</b> (55.5)	<b>3711.1</b> (55.9)	<b>4090.7</b> (55.7)
Capital-intensive	710.9 (41.7)	742.1 (42.1)	862.1 (42.0)	935.6 (42.3)	1030.5 (41.5)	1074.9 (42.0)	1157.7 (40.7)	1232.9 (39.8)
Labor-intensive	959.3 (65.9)	1089.1 (65.5)	1357.5 (66.1)	1618.0 (66.6)	1844.8 (66.1)	1976.2 (65.0)	2183.5 (66.0)	2417.7 (65.8)
Skill-intensive	152.8 (35.5)	182.9 (36.1)	221.1 (36.2)	253.0 (37.9)	286.6 (38.9)	318.8 (41.8)	369.9 (43.7)	440.1 (45.3)
Construction/Services	1447.5 (30.0)	1673.0 (28.1)	1951.3 (26.8)	2116.0 (26.8)	2352.2 (27.2)	2613.2 (27.4)	2747.8 (27.9)	3038.1 (28.7)
<b>Total</b>	<b>3537.9</b> (42.7)	<b>3951.3</b> (42.1)	<b>4657.8</b> (42.1)	<b>5174.8</b> (43.2)	<b>5770.2</b> (43.2)	<b>6242.2</b> (43.0)	<b>6715.2</b> (43.8)	<b>7382.2</b> (44.0)
<b>B. Foreign-owned Enterprises</b>								
Agriculture/fishery/forestry	3.9 (38.3)	4.3 (35.7)	5.4 (38.0)	6.4 (39.8)	7.7 (40.3)	7.7 (43.0)	7.9 (43.5)	8.3 (43.6)
<b>Manufacturing Total</b>	<b>363.7</b> (63.2)	<b>443.1</b> (65.4)	<b>636.0</b> (67.2)	<b>800.0</b> (68.5)	<b>973.6</b> (68.5)	<b>1135.0</b> (68.0)	<b>1349.2</b> (69.4)	<b>1572.5</b> (69.4)
Capital-intensive	73.9 (39.0)	85.2 (41.3)	102.5 (41.5)	119.7 (43.1)	137.7 (45.7)	154.9 (46.3)	186.3 (47.4)	206.6 (46.6)
Labor-intensive	235.9 (73.3)	291.5 (74.9)	445.1 (75.7)	571.5 (76.2)	703.8 (75.2)	820.1 (73.6)	964.3 (75.0)	1120.6 (74.6)
Skill-intensive	53.9 (52.0)	66.4 (54.6)	88.4 (54.1)	108.7 (56.2)	132.1 (56.8)	159.9 (60.3)	198.7 (62.8)	245.3 (65.0)
Construction/Services	40.1 (37.1)	41.9 (38.3)	49.6 (38.2)	53.9 (37.5)	63.6 (38.9)	77.9 (38.2)	88.2 (39.5)	105.1 (41.3)
<b>Foreign-owned Total</b>	<b>407.7</b> (60.4)	<b>489.3</b> (62.8)	<b>691.1</b> (64.9)	<b>860.3</b> (66.3)	<b>1044.9</b> (66.5)	<b>1220.6</b> (65.9)	<b>1445.4</b> (67.4)	<b>1685.9</b> (67.5)
<b>C. Private*<sup>1</sup> Enterprises</b>								
Agriculture/fishery/forestry	37.0 (8.4)	38.4 (8.6)	40.7 (7.6)	32.3 (10.9)	36.1 (11.7)	37.9 (14.0)	37.1 (15.6)	40.8 (17.6)
<b>Manufacturing Total</b>	<b>570.1</b> (57.9)	<b>702.3</b> (56.4)	<b>868.1</b> (54.6)	<b>1044.3</b> (54.6)	<b>1236.8</b> (53.1)	<b>1395.1</b> (52.8)	<b>1586.4</b> (52.6)	<b>1815.7</b> (51.1)
Capital-intensive	202.9 (49.3)	238.1 (49.5)	301.8 (48.2)	360.0 (47.7)	428.6 (46.0)	487.8 (47.3)	556.8 (45.8)	641.8 (44.0)
Labor-intensive	344.2 (65.3)	430.0 (63.2)	519.1 (61.6)	628.5 (61.6)	738.2 (60.3)	829.1 (59.0)	945.2 (59.3)	1061.8 (58.6)
Skill-intensive	23.0 (22.1)	34.2 (19.6)	47.2 (18.9)	55.9 (20.3)	70.0 (21.2)	78.2 (21.7)	84.5 (21.6)	112.1 (21.0)
Construction/Services	433.9 (23.1)	603.2 (23.4)	798.0 (23.1)	973.2 (24.0)	1202.6 (25.2)	1547.7 (26.1)	1746.3 (26.9)	2076.6 (28.0)
<b>Private Total</b>	<b>1041.0</b> (41.6)	<b>1343.8</b> (40.2)	<b>1706.9</b> (38.8)	<b>2049.9</b> (39.4)	<b>2475.4</b> (39.0)	<b>2980.7</b> (38.5)	<b>3369.9</b> (38.8)	<b>3933.2</b> (38.6)
<b>D. State-owned Enterprises (SOE)s</b>								
Agriculture/fishery/forestry	226.4 (39.9)	221.5 (43.7)	219.7 (43.8)	213.4 (44.2)	212.4 (42.8)	213.4 (41.8)	211.3 (41.5)	204.2 (42.1)
<b>Manufacturing Total</b>	<b>889.3</b> (47.5)	<b>868.7</b> (46.8)	<b>936.5</b> (46.7)	<b>962.3</b> (46.8)	<b>951.6</b> (45.5)	<b>839.8</b> (43.0)	<b>775.4</b> (39.2)	<b>702.5</b> (37.1)
Capital-intensive	434.2 (38.6)	418.8 (38.1)	457.8 (38.1)	456.0 (37.7)	464.3 (36.0)	432.1 (34.6)	414.7 (30.9)	384.5 (29.3)
Labor-intensive	379.2 (61.7)	367.6 (60.9)	393.3 (61.0)	418.0 (61.0)	402.8 (60.7)	327.0 (58.8)	274.0 (57.5)	235.3 (55.9)
Skill-intensive	75.9 (27.7)	82.4 (28.0)	85.4 (27.2)	88.3 (26.7)	84.5 (25.5)	80.7 (24.5)	86.7 (21.4)	82.6 (19.7)
Construction/Services	973.5 (32.8)	1027.9 (30.5)	1103.7 (28.9)	1088.9 (28.7)	1086.0 (28.6)	987.6 (28.5)	913.3 (28.8)	856.4 (29.0)
<b>SOE Total</b>	<b>2089.1</b> (39.8)	<b>2118.1</b> (38.6)	<b>2259.9</b> (37.7)	<b>2264.6</b> (37.9)	<b>2249.9</b> (37.1)	<b>2040.9</b> (35.9)	<b>1899.9</b> (34.5)	<b>1763.1</b> (33.7)

Source: the *Enterprise Survey* data (GSO).

Notes: Parenthetical numbers reflect the percentage of employees reflected in each cell who are female.

\*<sup>1</sup> Private enterprises include collective, private, limited companies and joint stock companies with and without state capital.

Table 2 Summary Statistics of Vietnam's Workers aged 15-59 from the VHLSS 2004

Ownership		Total	By Gender		By Skill	
			Male	Female	skilled	unskilled
Total	Number of Obs.	21022	10599	10423	3981	17041
	Share of female (%)	.50			.46	.51
	Age	35.0 (11.7)	34.8 (11.8)	35.3 (11.6)	35.0 (10.7)	35.0 (11.8)
	Education years	7.7 (3.7)	8.0 (3.6)	7.3 (3.8)	12.8 (1.5)	6.5 (3.0)
	hourly wage* <sup>1</sup> (VND 1,000)	5.3(4.7)	5.5 (5.1)	4.9 (3.9)	7.4 (6.3)	4.2 (3.0)
	Hours worked per week* <sup>2</sup>	34.8 (15.8)	34.9 (15.4)	34.7 (16.3)	38.6 (15.8)	33.9 (15.7)
Foreign	Number of Obs.	278	106	172	134	144
	Share of female (%)	.62			.57	.67
	Age	27.5 (7.8)	30.2 (8.7)	25.8 (6.7)	27.5 (7.8)	27.5 (7.9)
	Education years	10.4 (3.2)	10.8 (3.2)	10.2 (3.1)	13.1 (1.8)	7.9 (1.9)
	hourly wage (VND 1,000)	6.8 (6.9)	9.0 (9.7)	5.4 (3.7)	8.9 (9.2)	4.8 (2.2)
	Hours worked per week	45.1 (11.7)	44.8 (10.3)	45.4 (12.5)	44.1 (11.7)	46.1 (11.7)
State	Number of Obs.	2291	1281	1010	1581	710
	Share of female (%)	.44			.46	.39
	Age	37.7 (10.1)	38.8 (10.0)	36.2 (10.1)	37.3 (9.8)	38.4 (10.8)
	Education years	11.9 (3.2)	11.9 (3.3)	11.9 (3.0)	13.8 (1.8)	8.2 (2.3)
	hourly wage (VND 1,000)	7.1 (5.8)	7.4 (6.6)	6.8 (4.5)	7.9 (6.2)	5.4 (4.1)
	Hours worked per week	41.2 (11.5)	41.5 (11.3)	40.9 (11.7)	40.8 (10.9)	42.2 (12.7)
Private	Number of Obs.	945	586	359	328	617
	Share of female (%)	.38			.41	.36
	Age	30.2 (10.3)	31.6 (10.7)	27.8 (9.0)	30.7 (10.0)	29.9 (10.4)
	Education years	9.2 (3.4)	9.2 (3.4)	9.3 (3.5)	12.8 (1.5)	7.3 (2.5)
	hourly wage (VND 1,000)	5.1 (4.6)	5.6 (5.1)	4.3 (3.5)	6.4 (6.2)	4.4 (3.2)
	Hours worked per week	42.2 (14.0)	42.5 (14.6)	41.8 (12.8)	42.6 (13.3)	42.1 (14.3)
Informal Wage	Number of Obs.	3109	2123	986	301	2808
	Share of female (%)	.32			.27	.32
	Age	31.2 (10.8)	31.2 (10.5)	31.3 (11.2)	30.7 (10.4)	31.3 (10.8)
	Education years	6.6 (3.4)	7.0 (3.3)	5.9 (3.5)	12.1 (.67)	6.1 (3.0)
	hourly wage (VND 1,000)	3.9 (2.7)	4.3 (2.9)	3.1 (2.0)	5.0 (3.6)	3.8 (2.6)
	Hours worked per week	35.1 (14.6)	36.1 (13.5)	33.0 (16.5)	36.0 (15.6)	35.0 (14.5)
Self-employed	Number of Obs.	14399	6503	7896	1637	12762
	Share of female	.55			.49	.56
	Age	35.9 (11.9)	35.5 (12.2)	36.2 (11.6)	35.1 (11.2)	36.0 (12.0)
	Education years	7.1 (3.4)	7.4 (3.3)	6.8 (3.4)	12.2 (.78)	6.4 (3.0)
	hourly wage	n.a.	n.a.	n.a.	n.a.	n.a.
	Hours worked per week	33.0 (16.4)	32.3 (16.1)	33.5 (16.6)	35.6 (19.5)	12.7 (15.9)

Notes: See the text for the definition of each ownership category. The standard deviations are between parentheses.

\*<sup>1</sup> Average hourly wage is calculated dividing annual income from first job by hours worked for 6623 individuals who have wage employment as first job. The wage includes bonus/award, social allowances, and trip subsidy. \*<sup>2</sup> Hours worked per week are computed by combining the hours worked for the first and second jobs.

*Table 3*  
*Impacts of Foreign Ownership on Wages*

	Full Sample <sup>*1</sup>			Subset of Workers in the Formal Sector <sup>*2</sup>		
	(1)	(2)	(3)	(1)	(2)	(3)
Foreign dummy	.40*** (.034)	.50*** (.037)	.38*** (.035)	.25*** (.037)	.32*** (.038)	.26*** (.035)
State dummy	.25*** (.21)	.31*** (.025)	.28*** (.023)	.042 (.028)	.13*** (.031)	.15*** (.028)
Private dummy	.11*** (.022)	.14*** (.023)	.071*** (.021)			
Female	-.15*** (.016)	-.10*** (.015)	-.11*** (.015)	-.061*** (.021)	.0091 (.021)	-.0012 (.020)
Married	.020 (.019)	.018 (.019)	.052*** (.018)	.0068 (.029)	.015 (.028)	.069*** (.026)
Minority	-.11*** (.029)	-.11*** (.029)	-.061** (.030)	-.094** (.045)	-.054 (.045)	.012 (.048)
Education	.048*** (.002)	.049*** (.0025)	.053*** (.0024)	.075*** (.0032)	.079*** (.0036)	.078*** (.0034)
Potential experience	.032*** (.0030)	.031*** (.0027)	.027*** (.0025)	.041*** (.0044)	.041*** (.0042)	.032*** (.0039)
Experience <sup>2</sup>	-.0006 (.0006)	-.0006*** (.00006)	-.0005*** (.00006)	-.0007*** (.0001)	-.0007*** (.0001)	-.0005*** (.000095)
Urban			.090*** (.016)			.12*** (.021)
Industry dummies		X	X		X	X
Regional dummies			X			X
Number of obs.	6623	6623	6623	3514	3514	3514
R <sup>2</sup>	.24	.28	.35	.20	.25	.34

Notes:

<sup>\*1</sup>The informal wage sector is the omitted ownership category.

<sup>\*2</sup>The private domestic sector is the omitted ownership category.

The dependent variable is the log of hourly wage.

\*, \*\*, \*\*\* indicate that the coefficients are significant at the 10, 5, and 1 percent level, respectively.

The robust standard errors are between parentheses.



*Table 4*  
*Impacts of Foreign Ownership on Wages by Educational Attainment*

	Full Sample <sup>*1</sup>					Subset of Workers in the Formal Sector <sup>*2</sup>				
	College and above	Upper- secondary	Lower- secondary	Primary	No Degree	College and above	Upper- secondary	Lower- secondary	Primary	No Degree
Foreign dummy	.73*** (.23)	.37*** (.065)	.36*** (.059)	.34*** (.062)	.27* (.14)	.42*** (.13)	.29*** (.064)	.27*** (.061)	.24*** (.071)	-.10 (.16)
State dummy	.44*** (.20)	.19*** (.049)	.35*** (.039)	.29*** (.054)	.23*** (.085)	.12 (.079)	.13*** (.051)	.24*** (.053)	.15** (.069)	.12 (.097)
Private dummy	.33 (.22)	.041 (.052)	.075* (.040)	.087** (.035)	.10** (.046)					
Female	-.035 (.035)	-.038 (.035)	-.14*** (.032)	-.23*** (.027)	-.23*** (.030)	-.033 (.035)	-.0008 (.039)	.020 (.046)	-.15*** (.055)	-.018 (.080)
Married	.080 (.049)	.15*** (.046)	.026 (.036)	.059** (.030)	.030 (.037)	.079 (.048)	.17*** (.053)	-.016 (.051)	.11* (.066)	-.0017 (.088)
Minority	.079 (.10)	.011 (.093)	.055 (.070)	-.17*** (.063)	-.088** (.039)	.079 (.11)	.065 (.10)	.14 (.092)	-.083 (.11)	-.040 (.15)
Education	.016 (.017)		.021 (.018)	.020** (.010)	.00085 (.0089)	.021 (.01)		.050* (.026)	.030 (.020)	.0083 (.025)
Potential experience	.031*** (.0079)	.023*** (.0069)	.018*** (.0054)	.022*** (.0049)	.026*** (.0071)	.034*** (.0076)	.026*** (.0083)	.017** (.0083)	.015 (.011)	.070*** (.018)
Experience <sup>2</sup>	-.0003 (.0002)	-.0003* (.0002)	-.0004*** (.00013)	-.0004*** (.00011)	-.0005*** (.00013)	-.0004* (.00021)	-.0003 (.00019)	-.0002 (.0002)	-.0001 (.00026)	-.0012*** (.0003)
Urban	.059 (.038)	.039 (.034)	.12*** (.032)	-.00079 (.029)	.074* (.042)	.047 (.038)	.070* (.038)	.28*** (.049)	.021 (.054)	.032 (.091)
Industry dummies	X	X	X	X	X	X	X	X	X	X
Regional dummies	X	X	X	X	X	X	X	X	X	X
Number of obs.	849	1495	1734	1522	1023	838	1205	851	454	166
R <sup>2</sup>	.34	.25	.27	.27	.21	.34	.26	.30	.25	.46

Notes:

\*<sup>1</sup>The informal wage sector is the omitted ownership category.

\*<sup>2</sup>The private domestic sector is the omitted ownership category.

The dependent variable is the log of hourly wage.

\*, \*\*, \*\*\* indicate that the coefficients are significant at the 10, 5, and 1 percent level, respectively.

The robust standard errors are between parentheses.

*Table 5*  
*Impacts of Foreign Ownership on Wages by Gender*

	Full Sample <sup>*1</sup>						Subset of Workers in the Formal Sector <sup>*2</sup>					
	Full Sample		Subset of Skilled Workers		Subset of Unskilled Workers		Full Sample		Subset of Skilled Workers		Subset of Unskilled Workers	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Foreign dummy	.36*** (.057)	.46*** (.047)	.49*** (.094)	.44*** (.094)	.27*** (.070)	.45*** (.053)	.30*** (.058)	.26*** (.045)	.37*** (.096)	.37*** (.083)	.25*** (.095)	.24*** (.067)
State dummy	.25*** (.030)	.37*** (.037)	.20*** (.058)	.27*** (.080)	.29*** (.040)	.41*** (.044)	.16*** (.038)	.16*** (.041)	.088 (.056)	.20*** (.058)	.25*** (.053)	.16*** (.056)
Private dummy	.029 (.027)	.16*** (.035)	.098 (.061)	.069 (.086)	.0095 (.029)	.20*** (.039)						
Married	.055** (.025)	.056** (.026)	.074 (.054)	.18*** (.047)	.061** (.027)	.017 (.030)	.049 (.041)	.10*** (.035)	.077 (.058)	.20*** (.046)	.049 (.061)	.011 (.051)
Minority	-.10*** (.039)	.032 (.041)	-.11 (.11)	.090 (.087)	-.11*** (.040)	.0008 (.047)	.00022 (.064)	.077 (.067)	-.034 (.086)	.072 (.086)	.0044 (.074)	-.0003 (.0002)
Education	.052*** (.0032)	.052*** (.0039)	.10*** (.055)	.10*** (.011)	.021*** (.0039)	.017*** (.0049)	.082*** (.0064)	.073*** (.0051)	.11*** (.010)	.098*** (.011)	.042*** (.009)	.029*** (.010)
Potential experience	.028*** (.0034)	.022*** (.0037)	.027*** (.0079)	.023*** (.0075)	.025*** (.0037)	.015*** (.00047)	.033*** (.0058)	.027*** (.0054)	.032*** (.0090)	.025*** (.0077)	.029*** (.0086)	.021*** (.0080)
Experience <sup>2</sup>	-.0005*** (.00007)	-.0004*** (.00008)	-.0004** (.00019)	-.0002 (.0002)	.026** (.0037)	-.0002** (.0001)	-.0006*** (.0001)	-.0003*** (.00014)	-.0005** (.0002)	-.0003 (.0002)	-.0005*** (.0002)	-.0003 (.0002)
Urban	.12*** (.021)	.025 (.025)	.13*** (.037)	.033 (.038)	.098*** (.024)	.054* (.031)	.18*** (.030)	.044 (.029)	.17*** (.041)	.030 (.039)	.19*** (.047)	.13*** (.047)
Industry dummies	X	X	X	X	X	X	X	X	X	X	X	X
Regional dummies	X	X	X	X	X	X	X	X	X	X	X	X
Number of obs.	4096	2527	1321	1023	2775	1504	1973	1541	1100	943	873	598
R <sup>2</sup>	.31	.45	.34	.41	.25	.32	.34	.39	.34	.40	.32	.30
Wald Test												
Chi-square	1.53		.15		4.42		.34		.00		.05	
P-value	.22		.70		.035		.56		.99		.83	

Notes:

<sup>\*1</sup>The informal wage sector is the omitted ownership category.

<sup>\*2</sup>The private domestic sector is the omitted ownership category.

The dependent variable is the log of hourly wage.

\*, \*\*, \*\*\* indicate that the coefficients are significant at the 10, 5, and 1 percent level, respectively.

The robust standard errors are between parentheses.

*Table 6*  
*Regression Results for Alternative Specifications*

	(1)	(2) <sup>*1</sup>	(3)	(4)
Foreign dummy	.38*** (.035)	.59*** (.045)	.38*** (.038)	-.029 (.097)
State dummy	.28*** (.023)	.45*** (.028)	.28*** (.022)	-.19*** (.053)
Private dummy	.071*** (.021)	.21*** (.026)	.069*** (.021)	-.093* (.049)
Foreign*education				.047*** (.0097)
State*education				.051*** (.0050)
Private*education				.023*** (.0055)
Female	-.11*** (.015)	-.17*** (.017)	-.19*** (.029)	-.12*** (.014)
Married	.052*** (.018)	.039* (.021)	.027 (.019)	.055*** (.017)
Minority	-.061** (.030)	-.079** (.034)	-.12*** (.034)	-.057* (.030)
Education	.053*** (.0024)	.056*** (.0028)	.062*** (.0043)	.030*** (.0032)
Potential experience	.027*** (.0025)	.059*** (.0032)	.025*** (.0026)	.026*** (.0024)
Experience <sup>2</sup>	-.0005*** (.00006)	-.0012*** (.000072)	-.00047*** (.000055)	-.00044** (.000054)
Urban	.090*** (.016)	.10*** (.019)	.18*** (.034)	.076*** (.016)
Selection correction term			.26*** (.098)	
Industry dummies	X	X	X	X
Regional dummies	X	X	X	X
Number of obs.	6623	6623	6623	6623
R <sup>2</sup>	.35	.41	.35	.36

Notes: The dependent variable is the log of hourly wage except in Model (2).

<sup>\*1</sup> The dependent variable is the log of weekly wage.

The informal wage sector is the omitted ownership category.

\*, \*\*, \*\*\* indicate that the coefficients are significant at the 10, 5, and 1 percent level, respectively.

The robust standard errors are between parentheses.

*Table 7*  
*Changes in Employment Status/Ownership for the Panel Individuals 2002-2004*

	2004							2002 Total
	Foreign	State	Private	Informal Wage	Self-employed	student	Unemployed	
Foreign	36	6	8	11	3	4	3	71
2 State	12	710	33	18	57	3	19	852
0 Private	17	12	81	24	20	1	1	156
0 Informal wage	8	26	80	672	306	15	44	1151
2 Self-employed	15	94	94	406	5071	129	194	6003
Student	17	59	38	87	391	1062	75	1729
Unemployed	4	20	16	67	213	25	219	564
2004 Total	109	927	350	1285	6061	1239	555	10526

Source: Author's calculation based on the VHLSS 2002 and VHLSS 2004.

Notes: The ownership is based on an individual's "most time-consuming job in the last 12 months".

*Table 8*  
*Log Differences in Hourly and Weekly Wages for the Panel Individuals 2002-2004*

		A. Log Differences in Hourly Wages					B. Log Differences in Weekly Wages				
		2004				2002 Total	2004				2002 Total
		Foreign	State	Private	Informal wage		Foreign	State	Private	Informal wage	
2	Foreign	.19	.06	.04	.07	.13	.24	.21	.17	-.03	.18
0	State	.13	.27	.07	-.10	.25	.25	.28	.22	-.03	.27
0	Private	.18	.01	.10	.17	.11	.35	.06	.15	.07	.16
2	Informal wage	.40	.14	.22	.20	.20	.67	.23	.27	.18	.20
	2004 Total	.20	.26	.14	.19	.21	.31	.27	.21	.17	.23

Source: Author's calculation based on the VHLSS 2002 and VHLSS 2004.

*Table 9*  
*Results of Worker-Specific Fixed Effects Model*

	(1)	(2)
ΔForeign dummy	.079 (.084)	.19** (.083)
ΔState dummy	.095 (.072)	.049 (.059)
ΔPrivate dummy	.023 (.047)	.032 (.053)
Δmarried	-.044 (.059)	-.11 (.068)
ΔIndustry dummies	X	X
Number of Obs.	1727	1712
R <sup>2</sup>	.034	.039

Notes: The dependent variables are the difference in logs of hourly wages in regression (1) and the difference in logs of weekly wages in regression (2). The informal wage sector is the omitted ownership category.

\*\* indicates that the coefficients are significant at the 5 percent level.

The robust standard errors are between parentheses.

*Appendix Table 1*  
*Impacts of Foreign Ownership on Wages by Educational Attainment and by Gender*

**A. Impacts on Male Workers**

	Full Sample <sup>*1</sup>					Subset of Workers in the Formal Sector <sup>*2</sup>				
	<u>College and above</u>	<u>Upper-secondary</u>	<u>Lower-secondary</u>	<u>Primary</u>	<u>No Degree</u>	<u>College and above</u>	<u>Upper-secondary</u>	<u>Lower-secondary</u>	<u>Primary</u>	<u>No Degree</u>
Foreign dummy	1.12*** (.33)	.42*** (.098)	.37*** (.097)	.23* (.13)	-.20 (.21)	.62*** (.20)	.32*** (.099)	.38*** (.11)	.20 (.15)	-.64* (.34)
Number of obs.	465	856	1182	1005	588	457	643	515	259	99
R <sup>2</sup>	.36	.22	.28	.22	.21	.36	.24	.35	.31	.58

**B. Impacts on Female Workers**

	Full Sample <sup>*1</sup>					Subset of Workers in the Formal Sector <sup>*2</sup>				
	<u>College and above<sup>*3</sup></u>	<u>Upper-secondary</u>	<u>Lower-secondary</u>	<u>Primary</u>	<u>No Degree</u>	<u>College and above</u>	<u>Upper-secondary</u>	<u>Lower-secondary</u>	<u>Primary</u>	<u>No Degree</u>
Foreign dummy	.26 (.22)	.40*** (.10)	.40*** (.090)	.49*** (.073)	.45*** (.17)	.37** (.18)	.32*** (.083)	.18** (.083)	.33*** (.082)	-.014 (.015)
Number of obs.	384	639	552	517	435	381	562	336	195	67
R <sup>2</sup>	.35	.36	.37	.34	.24	.35	.36	.35	.31	.62

**C. Wald Test Results to Test Whether the Coefficients for Foreign Ownership are Equal between Men and Women**

Chi-square	5.05	.07	.04	3.10	6.33	.89	.00	2.80	.71	4.52
P-value	.025	.79	.84	.078	.012	.35	.99	.094	.40	.033

Notes:

<sup>\*1</sup>The informal wage sector is the omitted ownership category.

<sup>\*2</sup>The private domestic sector is the omitted ownership category.

<sup>\*3</sup> A note of caution is appropriate: only three women with an educational attainment of college and above reported working in the informal wage sector, which is the base category.

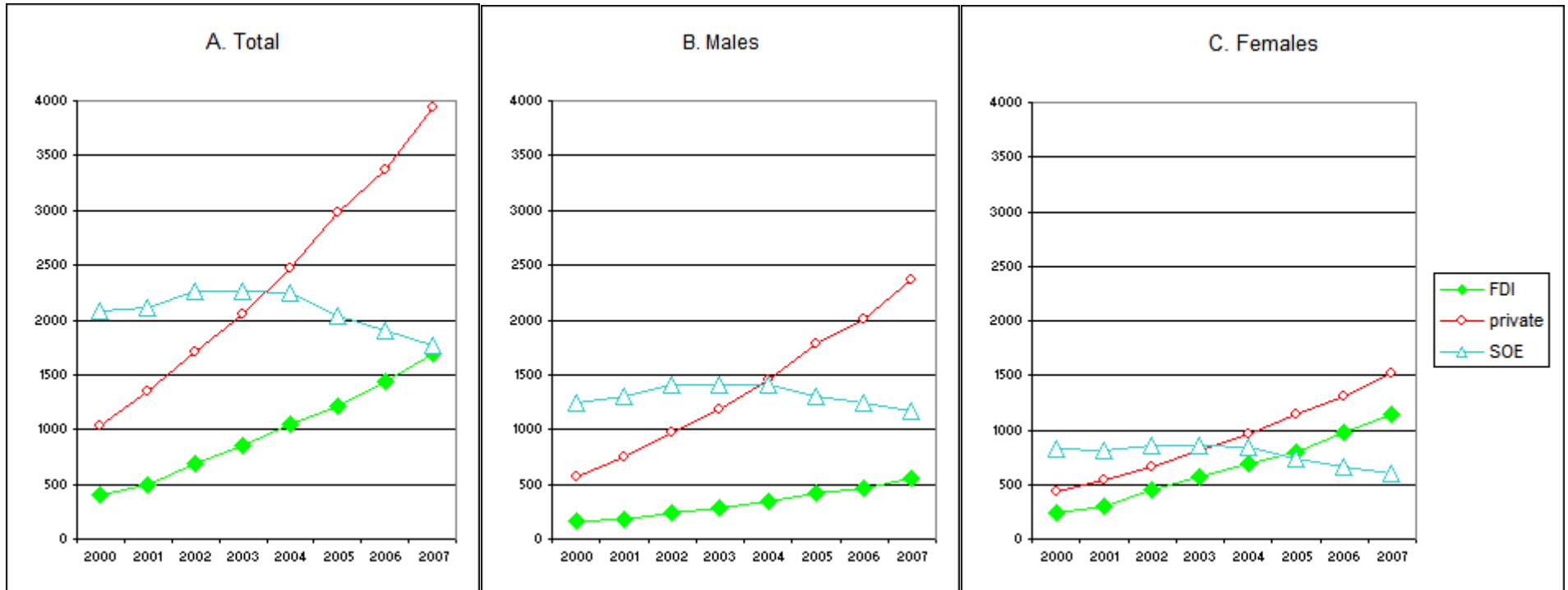
To conserve the space, only the coefficients for foreign ownership are reported. The control variables included are the same as those in Table 4.

The dependent variable is the log of hourly wage.

\*, \*\*, \*\*\* indicate that the coefficients are significant at the 10, 5, and 1 percent level, respectively.

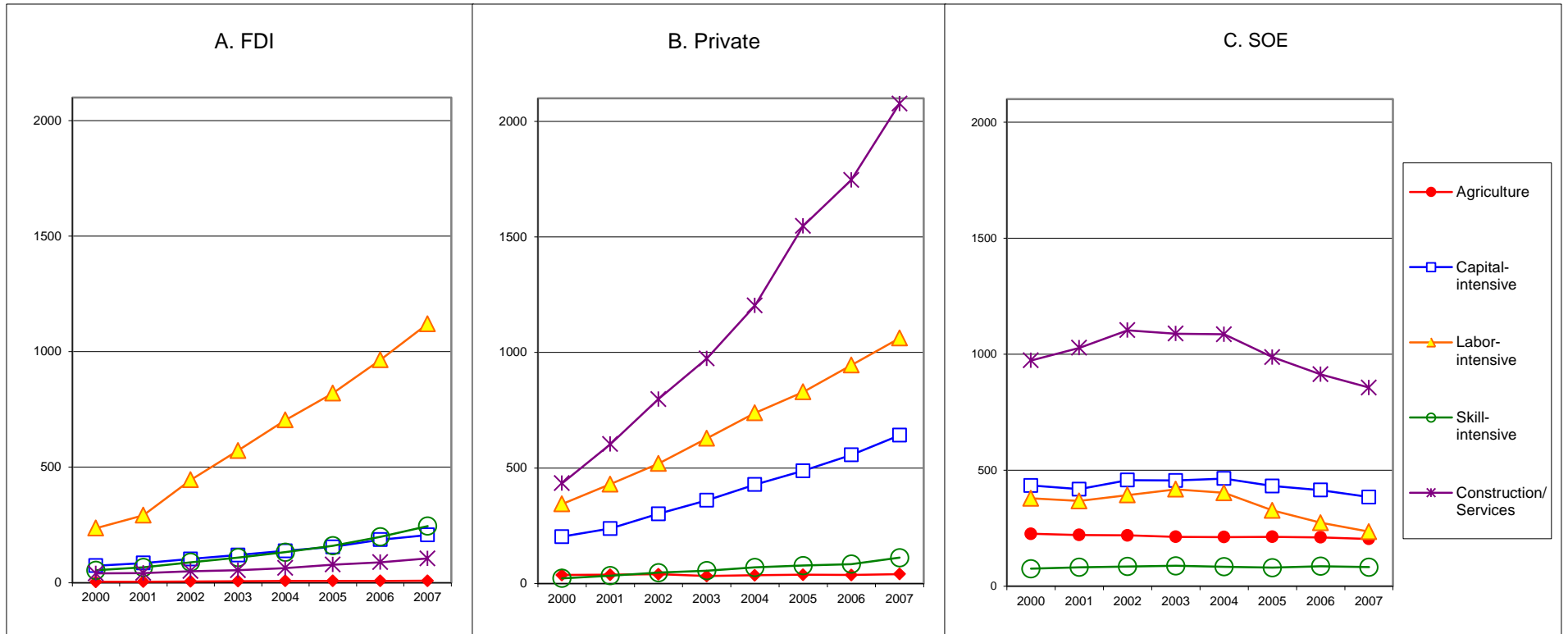
The robust standard errors are between parentheses.

*Figure 1*  
*Structure of Enterprise Employment by Ownership and by Gender for the Period 2000-2007*



Source: the *Enterprise Survey* data 2000-2007 (GSO).  
 Notes: The numbers of employment are by thousands.

*Figure 2*  
*Structure of Enterprise Employment by Ownership and by Economic Sector for the Period 2000-2007*



Source: the *Enterprise Survey* data 2000-2007 (GSO).

Notes: The numbers of employment are by thousands.

The manufacturing sector is disaggregated into labor-, capital-, and skill-intensive sectors. The labor-intensive sector includes textiles, apparel, footwear/leather products, wood products, furniture/miscellaneous manufacturing, metal products, and non-metallic mineral products. The capital-intensive sector is defined as mining, food products, basic manufacturing, and chemical, rubber, plastic products. The skill-intensive sector consists of electronics/machinery and transport equipment.