Sectoral Gender Wage Gap in Vietnam

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ABSTRACT  Vietnam is under pressure to reduce the size of the state sector. Using the Vietnam Living Standards Survey 1997–98, the paper examines the impact of this change on the gender earnings gap. Women have traditionally been over-represented in the state sector. After exiting the state sector, some seek jobs in the private sector. Estimation of separate earnings equations by sector suggests that the gender pay gaps in the state-owned enterprises and the private sector are comparable. One may then conclude that women’s relative economic position may not have worsened significantly. However, Appleton’s decomposition (1999) has demonstrated that the gender pay gap would be much wider if men and women were equally distributed between state and private sectors. Given that further downsizing is planned, it is important to increase women’s human capital to reduce their vulnerability. Equal pay legislation and paid maternity leave are some policies that can reduce within-sector earnings inequality.

1. Introduction

Since the introduction of “renovation” or Doi Moi in 1986, Vietnam has been undergoing a gradual transformation from a centrally planned to a market-oriented economy. With the government under pressure to reduce the size of the state sector, evidence suggests that more female public servants are moving into the formal and informal private sector or out of the labour force altogether. One implication is a worsening of women’s relative economic position.

Owing to the commitment to equal rights for women under the communist regime, it is reasonable to expect a smaller gender pay gap for wage earners and less discrimination in the state sector relative to the private sector. How has sectoral change in the labour force affected the gender earnings gap in Vietnam, given that females are over-represented in the state sector? One hypothesis is that this imbalance favours women’s average earnings relative to men’s: thus, the labour flow from the state sector to the private sector, prompted by downsizing, would make women worse off than otherwise.

The paper examines this hypothesis for wage earners by applying the decomposition technique of Appleton et al. (1999). This method incorporates the impact of sectoral


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location, not accounted for by conventional decomposition methods. In addition, it
overcomes the index number problem of Brown et al. (1980). A careful analysis of the
factors contributing to the sectoral gender wage gap is important, not only because it
affects earnings, but also because of its policy implications. An understanding of the
implications of within-sector and between-sector differences for gender differences in
earnings may help to minimize the undesirable impact of downsizing on women’s
economic position.

To date, most studies exploring the wage position of women in transitional econom-
ies have focused on Russia and other eastern European countries. This paper adds to
the literature and examines the impact of state sector downsizing on the sectoral gender
wage gap in Vietnam.

2. Background

Before the 1980s, Vietnam was a centrally planned economy. Under this system,
government and state-owned enterprises (SOEs), including co-operatives, were the
only two sectors. All economic activity was planned and controlled by the government.
The labour market was no exception. Based on the overall plan laid down by the
government, the number of workers for each organization was determined by their
respective administrative units. A salary budget was allocated to each organization and
workers were paid according to a predetermined scale.

The inefficiency of the centrally planned system resulted in the collapse of many
SOEs, forcing the government to embark on market reform. Doi Moi, unveiled in 1986,
represented a significant step towards a market economy. One important feature during
the transition was the gradual demise of SOEs and the emergence of private companies.

The level of employment in SOEs has decreased dramatically since the launch of
Doi Moi (O’Conner, 1996). State sector employment in 1986 accounted for about 15%
of total employment. Between 1986 and the mid-1990s, total state sector employment
dropped by over a quarter. Vo (2000) reports that the employment share of SOEs
dropped from 6.5% in 1991 to 4.8% in 1999. Employment in the (formal) private
sector more than doubled between 1996 and 2000 (World Bank, 2001) and jobs
created by the private sector were triple those created by SOEs. While there are other
implications of downsizing, this paper focuses on the welfare implications of the relative
economic position of female wage earners.

Downsizing could cause the gender wage gap to widen because state sector wages
are higher than those in the private sector. The evidence also suggests that women are
more likely than men to leave the state sector (Rama, 2001; O’Conner, 1996). The
impact of downsizing is, therefore, not gender neutral. One reason is that where both
spouses work in the state sector, the wife tends to join the private sector or opt for early
retirement while the husband stays to maintain family access to state-provided benefits.
Women also have the option of joining the informal sector where women predominate.
Younger female workers tend to move into the private sector in response to the
increased demand in traditionally female occupations created by an influx of foreign
investment in industries such as garment and footwear.

In addition, the over-representation of women in the state sector may further widen
the gender pay gap in the wake of state sector retrenchment. That women outnumber
men in the state sector has a sectoral gender dimension. On the one hand, the state
sector may be less discriminatory than the private sector. The results reported later
provide some support for this proposition. On the other hand, it may reflect women’s
preference for working in the state sector due, first, to the small gender earnings gap in
the state sector and, second, because state sector workers are entitled to maternity leave and enjoy better working conditions. Private sector employees did not enjoy such benefits until 1995 when the Labour Code was passed. Third, the lack of an effective monitoring system in the state sector means shorter hours and less effort, allowing female public servants to combine work with household responsibilities. Whether the over-representation of women in the state sector reflects discrimination or preference, the impact of gender differences in sectoral location on the gender pay gap has important policy implications in the context of ongoing downsizing.

The minimum wage also affects the gender pay gap. In theory, the minimum wage, if implemented fully, is likely to close the gender wage gap since it effectively raises the average wages of lower paid groups (females) relative to higher paid groups (males). Shannon (1996) found that the minimum wage closes the gender gap mainly by reducing the size of the discrimination component. However, if it is less effectively enforced or differs across sectors, then the gender pay gap and the importance of discrimination may be overstated in one sector relative to the other.

In 1997, the Vietnamese Government set the national minimum wage at 144 000 dongs per month (US$10.50) for employees working in Vietnamese enterprises, irrespective of whether they were SOEs or private firms. However, the minimum wage is higher in foreign-invested enterprises. Preliminary data analyses show that some employees of domestic firms received less than the minimum wage. Most breaches occur in the private sector, mainly in small household enterprises and foreign firms. A wider gender pay gap, therefore, may be simply a result of women who exit the state sector disproportionately receiving less than the minimum wage in the private sector rather than a result of discrimination.

The data also reveal that roughly equal numbers of male and female employees receive a monthly wage lower than the minimum wage. This holds for workers in domestic as well as joint-venture firms. For example, 26 men and 27 women in domestic firms report that they are working for less than the minimum wage, and 205 males and 192 females working for foreign-invested firms report breaches. This suggests that breaches of the minimum wage may not be gender-related, but are connected with the nature of the enterprise. However, among those reported breaches of the minimum wage, the males working for foreign-invested firms earn, on average, 18% more than their female counterparts. Not much gender difference is observed for those working for less than the minimum wage in domestic firms.

Ignoring the breaches of the minimum wage could potentially overstate the importance of the gender wage gap and discrimination in the private sector. Ideally, the observations with wages below the minimum wage should be excluded. However, with only a small sample size to work with when estimating earning equations by sector as well as by gender, these observations are included.

3. Data and Methodology

3.1 The Data

The data used in this study were drawn from the second round of the Vietnam Living Standards Survey (VLSS) conducted by the World Bank and the General Statistical Office of Vietnam. It was carried out between 1997 and 1998. The sample was primarily selected from households in the original 150 communes/wards of the first round of the VLSS conducted between 1992 and 1993. The sample was increased by 1200 households. The selection of the additional households was chosen so that the
total sample of 6000 households over-sampled specific domains. Therefore, the 1997–
98 data must be weighted in order to correct for the bias due to over-sampling.

3.2 The sample

The sample used in this paper is defined as follows. Wage earners who: (1) worked in
the 12 months prior to the survey;9 (2) are aged between 18 and 60 years, inclusive;10
and (3) supplied earnings data. There are 2380 wage earners in the sample (1380 males
and 1000 females). By restricting the sample to wage earners, the paper excludes
the majority of the working population. In Vietnam, the wage sector is still relatively
under-developed; most individuals are self-employed in the predominantly agrarian
economy. The VLSS 1997–98 survey shows that only about 27% of workers between
18 and 60 years old are wage earners. Given that we are examining a small fraction of
the Vietnamese labour force, cautious interpretation of the results and their implication
is necessary.

As discussed, females are over-represented in the state sector: 46% of females either
worked in the government sector or for SOEs, whereas only 36% of males were
employed in these sectors. Conversely, a higher proportion of males worked for private
firms.

Table 1 reports the summary statistics of the main variables used in the Mincerian
earning equations by ownership. The government sector exhibits the least gender
earnings disparity, and male employees in SOEs and the private sector are paid
relatively more than female employees. For instance, male workers in the private sector
are paid an hourly wage rate of about 26% more than their female counterparts. In
terms of earnings dispersion, the pooled sample indicates that males’ wages are almost
60% higher than female workers in log differential (Table 2). Note also in Table 2 that
the gender pay gaps in SOEs and private sector are 0.27 and 0.30 in log differentials,
respectively.

The overall gender wage gap in Vietnam (0.202 in log differentials, as shown in
Table 3) is similar to that in China. Liu et al. (2000) reports a gender wage gap of 0.210
in log differentials for married people, using the 1995 Chinese Income Distribution
Survey. Increasing gender wage differentials in absolute terms from the state sector to
the private sector in Vietnam is also in line with that in Shanghai and Jinan, China (Liu
et al., 2000). Compared with their Chinese counterparts, Vietnamese SOEs and the
private sector exhibit much smaller gender inequalities in earnings. For instance, in
Shanghai, the pay gaps are 0.28 and 0.38 in log differentials for state firms and
collectives and 0.39 for private firms.

Turning to other variables, male state employees tend to have a slightly longer
potential experience than the males employed by private firms. A high proportion of
married males and females work as state employees relative to respective gender groups
in other sectors. On average, public servants are more educated than employees in
private firms. Government and SOE employees have about 13 and 11 years of
schooling, while workers in the private sector have only 7 years on average.

In Vietnam, the government controls scholarships and determines how many
graduates from certain disciplines are needed to fill government positions. This explains
why employees in the state sector tend to be more highly educated, with more
employees falling into the categories of professionals and skilled workers. Over 60% of
government employees are professionals. In contrast, workers in the private sector on
average are less educated and most of them are labourers. In terms of their educational
<table>
<thead>
<tr>
<th></th>
<th>Government sector</th>
<th></th>
<th>SOEs</th>
<th></th>
<th>Private sector</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Log hourly wage</td>
<td>0.33</td>
<td>0.06</td>
<td>0.32</td>
<td>0.05</td>
<td>0.53</td>
<td>0.07</td>
</tr>
<tr>
<td>Potential experience</td>
<td>20.95</td>
<td>0.72</td>
<td>16.74</td>
<td>0.63</td>
<td>18.13</td>
<td>0.65</td>
</tr>
<tr>
<td>Potential exp^2/100</td>
<td>5.63</td>
<td>0.32</td>
<td>3.87</td>
<td>0.27</td>
<td>4.41</td>
<td>0.27</td>
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<tr>
<td>Married</td>
<td>0.80</td>
<td>0.03</td>
<td>0.68</td>
<td>0.04</td>
<td>0.71</td>
<td>0.03</td>
</tr>
<tr>
<td>Migrant</td>
<td>0.57</td>
<td>0.04</td>
<td>0.59</td>
<td>0.04</td>
<td>0.58</td>
<td>0.05</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>12.44</td>
<td>0.26</td>
<td>12.83</td>
<td>0.24</td>
<td>10.84</td>
<td>0.34</td>
</tr>
<tr>
<td>Urban</td>
<td>0.48</td>
<td>0.03</td>
<td>0.52</td>
<td>0.03</td>
<td>0.66</td>
<td>0.03</td>
</tr>
<tr>
<td>North</td>
<td>0.43</td>
<td>0.06</td>
<td>0.40</td>
<td>0.06</td>
<td>0.44</td>
<td>0.07</td>
</tr>
<tr>
<td>Majority</td>
<td>0.93</td>
<td>0.02</td>
<td>0.95</td>
<td>0.02</td>
<td>0.96</td>
<td>0.02</td>
</tr>
<tr>
<td>Professional</td>
<td>0.64</td>
<td>0.04</td>
<td>0.72</td>
<td>0.03</td>
<td>0.22</td>
<td>0.03</td>
</tr>
<tr>
<td>Office and trade workers</td>
<td>0.25</td>
<td>0.03</td>
<td>0.16</td>
<td>0.03</td>
<td>0.19</td>
<td>0.03</td>
</tr>
<tr>
<td>Labourers</td>
<td>0.10</td>
<td>0.02</td>
<td>0.12</td>
<td>0.02</td>
<td>0.52</td>
<td>0.04</td>
</tr>
</tbody>
</table>
Table 2. Conventional decomposition of gender wage gap

<table>
<thead>
<tr>
<th></th>
<th>SOEs</th>
<th>Private firms</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw</td>
<td>Predicted</td>
<td>Gap</td>
</tr>
<tr>
<td>SOEs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln $W_m$</td>
<td>0.533</td>
<td>0.531</td>
<td></td>
</tr>
<tr>
<td>ln $W_f$</td>
<td>0.261</td>
<td>0.265</td>
<td>0.266</td>
</tr>
<tr>
<td>Private sector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln $W_m$</td>
<td>0.285</td>
<td>0.287</td>
<td></td>
</tr>
<tr>
<td>ln $W_f$</td>
<td>-0.007</td>
<td>-0.008</td>
<td>0.295</td>
</tr>
<tr>
<td>Oaxaca</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male wage structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristics</td>
<td>0.107</td>
<td>40.34</td>
<td>-0.083</td>
</tr>
<tr>
<td>Returns</td>
<td>0.159</td>
<td>59.66</td>
<td>0.378</td>
</tr>
<tr>
<td>Female wage structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristics</td>
<td>0.010</td>
<td>3.67</td>
<td>-0.088</td>
</tr>
<tr>
<td>Returns</td>
<td>0.256</td>
<td>93.33</td>
<td>0.383</td>
</tr>
<tr>
<td>Neumark</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted wage structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill difference</td>
<td>0.057</td>
<td>21.35</td>
<td>-0.086</td>
</tr>
<tr>
<td>Male advantage</td>
<td>0.077</td>
<td>28.76</td>
<td>0.144</td>
</tr>
<tr>
<td>Female disadvantage</td>
<td>0.133</td>
<td>49.89</td>
<td>0.237</td>
</tr>
</tbody>
</table>

level and professional status, the position of women in the government sector and SOEs is at least comparable with men, if not better.

State employees are fairly evenly distributed in the north and the south. Yet, most private firm employees are in the south. The background of the two regions may explain these differences. Historically, Vietnam was divided into its northern and southern halves. The northern part has a longer history of operating under the socialist economic system. The south, especially the area around Ho Chi Minh City, is relatively better off than the north, not only in terms of per capita expenditure, but also in relation to human capital, physical and social infrastructure. The development of the private sector in the south was therefore faster, as it could more readily ride on the tide of market reforms. Southerners are used to the idea of working for private firms, whereas it is a relatively new concept to most northerners.

3.3 Mincerian Earnings Equation

I estimated conventional Mincerian log earnings functions for the pooled sample, then separately for the government sector, SOEs, the private sector, and also for males and females. Labour market experience is commonly proxied by potential experience. Other independent variables include dummies on marital status, migrant status, four occupation groups, urban area, region and ethnic groups. Dummies of the three sectors are included as independent variables for the estimation using the pooled sample.

Given the over-representation of women in the state sector, the decision to work in a particular sector may not be exogenously determined. Aside from the observed characteristics of women discussed earlier (such as marital status), it may correlate with unobserved characteristics of the individual worker. This paper uses the Hay (1980) two-stage approach to take into account the possible effect on earnings of endogenous
Table 3. Full decomposition of the overall gender wage gap

<table>
<thead>
<tr>
<th></th>
<th>Raw</th>
<th>Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997–98: ln $\bar{W}_m$</td>
<td>0.334</td>
<td>0.333</td>
</tr>
<tr>
<td>ln $\bar{W}_f$</td>
<td>0.132</td>
<td>0.131</td>
</tr>
</tbody>
</table>

Earnings differences due to within-sector differences

Characteristics (1) $-0.043$ $-20.74$
Deviation in male returns (2) $0.096$ $46.97$
Deviation in female returns (3) $0.173$ $87.59$

Earnings differences due to between-sector (sectoral location) differences

Characteristics (4) + (5) $-0.040$ $-19.39$
Deviation males’ predicted and actual sectoral location not accounted for by characteristic differences (6) $-0.007$ $-3.57$
Deviation females’ predicted and actual sectoral location not accounted for by characteristic differences (7) $0.026$ $12.51$

Selection into different sectors. This approach is a generalization of Heckman’s (1979) approach. In the first stage, a multinominal logit model is used to calculate correction terms, $\lambda_{ij}$. The appropriate correction term is then included in the respective earnings equation as an additional regressor in the second stage. The predicted probability $P_{ij}$ from the multinominal logit model is used to compute the correction term $\lambda_{ij}^{17}$:

$$\lambda_{ij} = \frac{6}{\pi} (-1)^{j+1} \left[ \frac{1}{J} \sum_{k=1}^{J} \left( \frac{1}{P_{ik}} \ln P_{ij} + \sum_{l=1}^{J} \frac{1}{J} \left( \frac{P_{ik}}{1 - P_{ik}} \ln P_{jk} \right) \right) \right]$$

for $j = 1, \ldots, J$

where $P$ is the probability that the individual $i$ is in sector $j$.

The presence of the additional constructed selectivity correction term renders the standard errors not correct. White’s (1980) standard errors are used to give asymptotically consistent values in the empirical work.

In the empirical application, a multinominal logit model with three categories is specified.18 They include the government sector, SOEs and the private sector. Identification is achieved by including variables, such as number of children, non-labour income, dependency ratio, whether or not an individual is a migrant, and the dummies that capture which sector the household head works for. These variables affect participation in a particular sector but not wages. In the second stage, for instance, I use the $\lambda_i$ for SOEs to augment the SOE earnings functions. The inclusion of the correction term ensures that the ordinary least squares (OLS) gives consistent estimates of the augmented earnings functions for the three sectors.

3.4 Decomposing the gender wage gap

3.4.1 Traditional decomposition: Oaxaca and Neumark. Oaxaca’s approach (1994) to estimating the gender wage gap is commonly used in the literature. Two separate standard Mincerian log wage equations are estimated for males and females. The Oaxaca decompositions are:

$$\ln \bar{W}_m - \ln \bar{W}_f = \beta_m (\bar{x}_m - \bar{x}_f) + (\beta_m - \beta_f) \bar{x}_f$$

(males as the reference group)

$$\ln \bar{W}_m - \ln \bar{W}_f = \beta_f (\bar{x}_m - \bar{x}_f) + (\beta_m - \beta_f) \bar{x}_m$$

(females as the reference group)

where $\bar{W}_m$ and $\bar{W}_f$ are the means of males’ and females’ wages, respectively; $\bar{x}_m$ and $\bar{x}_f$ are
vectors containing the respective means of the independent variables for males and females; and $\beta_m$ and $\beta_f$ are the estimated coefficients. The first term on the right-hand side captures the wage differential due to different characteristics of males and females. The second term is the wage gap attributable to different returns to those characteristics or coefficients.

Due to the index number problem, Neumark (1988) proposes a general decomposition of the gender wage differential.

$$\ln \bar{w}_m - \ln \bar{w}_f = \beta (\bar{x}_m - \bar{x}_f) + \left[ (\beta_m - \beta) \bar{x}_m + (\beta - \beta_f) \bar{x}_f \right]$$

where $\beta$ is the non-discriminatory wage structure. He argues that under discrimination, males are paid competitive wages but females are underpaid. If this is the case, the male coefficients should be taken as the non-discriminatory wage structure. Conversely, if employers pay females competitive wages but pay males more (nepotism), then the female coefficients should be used as the non-discriminatory wage structure.

This decomposition can be reduced to Oaxaca’s two special cases if it is assumed that there is no discrimination in the male wage structure, i.e. $\beta = \beta_m$, or if it is assumed that $\beta = \beta_f$ instead. Neumark shows that $\beta$ can be estimated using the weighted average of the wage structures of males and females. The first term is the gender wage gap attributable to differences in characteristics. The second and the third terms capture the difference between the actual and pooled returns for men and women, respectively. However, the Neumark decomposition, like other conventional decomposition methods, fails to account for differences in sectoral structures between gender groups.

### 3.4.2 Full decomposition: Appleton et al. (1999)

The decomposition technique developed by Appleton et al. (1999) takes into account sectoral structures. In order to avoid the index number problem, Appleton et al. (1999) adopted an approach analogous to that of Neumark and decomposed the gender wage gap into three components. Since this technique is based on Neumark’s decomposition, it does not suffer from an index number problem, as do Brown et al. (1980)

$$\bar{w}_m - \bar{w}_f = \sum_{j=1}^{J} \bar{p}_m^j (\bar{w}_m^j - \bar{w}_f) + \sum_{j=1}^{J} \bar{w}_m (\bar{p}_m^j - \bar{p}_f^j)$$

A multinomial logit model is used to specify the selection process of an individual into different sectors. A pooled multinomial logit model and then separate multinomial logit models are estimated for men and women

$$P_m = \frac{\exp(\gamma_m)}{\sum_{j=1}^{J} \exp(\gamma_m)}$$

$$P_f = \frac{\exp(\gamma_f)}{\sum_{j=1}^{J} \exp(\gamma_f)} \quad i = m, f.$$ 

By estimating a multinomial logit equation separately for men and women, one can derive the average probability for male and female employees in the different sectors. These average probabilities are denoted by $\bar{p}_m^j$ where $i = m, f$ and $j = 1, 2, \ldots, J$. The relationship between $\gamma$ and $\gamma_i$ is analogue to that of $\beta$ and $\beta_i$ in Neumark’s decomposition.

Embedding the self-selection process, the full decomposition can be written in the following form:
The first three terms are equivalent to the Neumark decomposition of within-sector wage differentials. The fourth and fifth terms measure the different earnings due to differences in distribution of male and female employees in different sectors. The last two terms account for differences in earnings due to differences between predicted and actual sectoral compositions of men and women not accounted for by differences in characteristics.

4. Empirical Results

4.1 Mincerian Earnings Equations

The estimation of the pooled sample (not shown here) suggests that the gender dummy is significant. Other things being constant, females earn 25% less than their male counterparts. Government sector employees are paid 24% less than those in the private sector. SOE employees receive slightly higher earnings than employees of private firms but the dummy variable is not significant. Chow-type tests suggest that it would be appropriate to estimate separate earnings equations for the three sectors.19

Separate earnings equations for different sectors are estimated. The results of the estimation (not shown here) show that all three sectors reward education. For instance, the reward for return to schooling is 7.5% for an additional year of education in the government sector, and 4% and 4.2% for SOEs and the private sector, respectively. Potential experience is found to be significant for both government and private sectors. The region where a person works is a profoundly important factor in determining how much he or she will earn.20 On average, workers in the south earn more than their northern counterparts, irrespective of sector. For example, a government employee in the north earns 24% less than one in the south. Notably, significant gender differences are evident only in the earnings equation for workers in SOEs and the private sector, not for government employees. This result confirms that gender inequality is lowest in the sector in which the egalitarian ideology of socialism is put into practice most. Earnings equations for males and females are then estimated separately only for SOEs and the private sector. Results are reported in Table A1. Estimating separate equations by gender as well as by sector reduces the number of observations available. In some cases, the sample size falls to fewer than 300. Given that some estimations are based on a small sample, the results have to be interpreted cautiously.

Two variants of the estimations are estimated: one with the selection correction; one without. Note that only the correction term for female private sector employees is positive and significant. This means that unobserved characteristics that increase the probability of holding a private job also have a positive effect on earnings. However, there is no difference in earnings between someone who self-selects into an SOE and someone with identical observable characteristics who is randomly drawn from the labour force and assigned an SOE job. If earnings in the SOEs are institutionally determined, then a significant difference in earnings is not likely. As such, the de-
composition results reported and analysed are based mainly on the earnings equations without correcting for selectivity.

In general, returns to endowment/productivity-related variables are not significant for SOEs, but they are significant for the private sector. While the insignificance of these variables in the wage determination for SOEs may be a result of the small sample size, it may reflect the non-human capital considerations in wage determination in the SOEs. Analysis of other variables presented later indicates that this proposition is plausible. In addition, poor performance of human capital factors in Mincerian earning functions is also reported for Russia (Newell & Reilly, 2000) and China (Liu et al., 2000).

The returns to schooling are 3.3% and 5.5% for male and female private employees. The results accord with those of the Czech Republic (Flanagan, 1998) but are lower than those for Shanghai, China (Liu et al., 2000). Interestingly, the female rates of return to education are higher than male rates of return. That females have higher returns to schooling than males even though females, on average, earn less than males is observed in the other former centrally planned as well as non-centrally planned economies (Phan, 2000).

Potential experience is also significant only for private sector employees. Potential experience and its squared term, as expected, have a positive sign and a negative sign in all estimations, indicating the usual inverted-U-shaped relationship between wage rates and labour market experience. However, returns on experience are comparatively low. For example, returns on 10 years’ experience in Vietnam are only around 22% and 27% for males and females, respectively. This is a fairly low rate of return compared with many market economies (Blau & Kahn, 1995).

In addition, it appears that there is no strong systematic relationship between the occupation held and earnings in SOEs, except for male professionals. None the less, occupation matters for private sector employees. For example, professionals and office/trade workers earn more than agricultural workers (base group). This holds for males and females.

It is interesting to note that variables that appear to be unrelated to labour productivity have an impact on the wage determination in SOEs as compared to the private sector. For instance, the marital and migrant dummies matter in the SOEs, but are not important in wage determination of the private sector.

4.2 Conventional Decompositions

Table 3 reports conventional decomposition results separately for SOEs and private enterprises. For SOEs, while characteristic differences have a role to play, discrimination is more important—it explains more than half of the gender pay gap in SOEs irrespective of the reference group. The results of Neumark’s decomposition method also suggest that female disadvantage accounts for 50% of the gender earning differentials. Male advantage accounts for another 29%. Recall that wages may be institutionally determined in SOEs. A lack of data to capture institutional factors such as party membership could overstate the importance of the unexplained component.

The analysis of the private firms clearly shows that discrimination is the most important factor in explaining the gender pay gap. From Neumark’s interpretation, both nepotism towards men and discrimination against women are important in explaining gender earnings differentials in both sectors, but the latter is more noticeable. It explains 80% of the differentials. Using Oaxaca’s decomposition, it explains around 129%, irrespective of which wage structure is used. Employers in the private
sector can freely choose whom to employ, creating conditions for increasing gender disparity. Further, discrimination contributes more to the gender pay gap in private firms than in the SOEs. This finding is the opposite of that in China. Liu et al. (2000) found that the share of discrimination in accounting for the overall wage gap declines, moving from collectives to private firms. Gender wage discrimination becomes less important in the private sector, they argue, because the market in China is becoming more liberal and it is too costly for employers to discriminate against female workers. As Vietnam is in the early stages of marketization, discrimination is more important in explaining the wage gap in the private sector relative to that in China.

At first glance, one could conclude that the gender pay gaps in SOEs and the private sector are comparable (0.266 and 0.295 in log, respectively). This implies that downsizing may not have a severe effect on women’s relative economic position except that women may face more discrimination in the private sector after leaving the state sector. Recall that the Oaxaca and Neumark results indicate a larger contribution of discrimination to the gender wage gap in the private sector than the SOEs. However, analyses based on separate sectoral wage equations, such as Oaxaca and Neumark, do not take into account the over-representation of women in the state sector. Given the gender differences in sectoral location, state sector downsizing, which has seen female public servants move into the private sector, is likely to worsen women’s relative economic position further.

4.3 Decomposition of Appleton et al.

To take gender differences in sectoral location into consideration, I apply the decomposition techniques of Appleton et al. to the full sample. Table 3 shows the full decomposition, taking into account the location of men and women in the three sectors.

The first three terms address the differences in returns due to within-sector differences. These three terms are equivalent to the within-sector wage gaps in the SOEs and the private firms of the Neumark decomposition. All the earnings differences are a consequence of within-sector differences. Further, in line with the traditional decomposition results, deviation in returns explains all the within-sector differences (134%). In particular, deviation in female returns is more profound (88%) than in male returns (47%).

The last three terms of the full decomposition show the share of the gender gap which may be attributed to sectoral differences. The negative sum implies that differences in sectoral locations are more favourable to women than men. The sum of the last three terms suggests that the gender earnings gaps would have been 11% wider if men and women were equally distributed across three sectors. The over-representation of women in the higher paying state sector appears to help keep the gender pay gap smaller than it otherwise would be. State sector downsizing thus worsens women’s economic position as more women move away from the state sector to the private sector. The separate decompositions by sector, such as Oaxaca and Neumark, ignore sectoral composition differences, masking the extent of impact of the state sector downsizing on women.

5. Conclusions

In this paper, I set out to analyse the role of sectoral location in gender earnings differences as Vietnam undergoes downsizing in the state sector. The sectoral aspect of
gender earnings differentials has significant policy implications as a further reduction in state employment is proposed.

The full decomposition results of Appleton et al. (1999) indicate that within-sector differences (discrimination in particular) contribute more than between-sector differences in explaining the gender earnings gap. Discrimination also accounts for most of the overall gender wage differential. The part of gender disparities that is due to female sectoral location is not accounted for by differences in characteristics, and accounts for 13% of the overall gender pay gap despite the fact that its effect is offset by the other two forces. Most importantly, the sum of gender differences in sectoral location is negative, implying that the differences in sectoral location are more favourable to women than men and highlighting the fact that the gender pay gap would have been 11% worse otherwise.

A number of policy implications can be drawn from these findings. First, it is important to formulate policies, such as equal pay legislation, paid maternity leave, etc. to reduce within-sector earnings inequality between men and women. The effectiveness of policies designed to impact economic outcomes within the sector is vital in narrowing the gender pay gap and reducing the extent of discrimination in the private sector. Second, as protective centralized wage structures are disappearing, women who encounter labour market discrimination are subjected to downward pressures on their relative wages. The answer then lies in formulating policies to increase their human capital as well as to reduce discrimination against them. Further market liberalization to increase competition as well as educating the public to weaken traditional cultural values are some channels to safeguard against further worsening of women’s economic position.

In interpreting the results, readers should keep in mind the sample size problem due to the disaggregation of the observations by gender and sector as well as the small wage sector in Vietnam. None the less, the findings of this paper increase our understanding of the factors that contribute to the gender wage gap during the post-reform period. Most importantly, they help us to understand shifts in the relative economic position of female wage earners compared with their male counterparts in the face of the state sector downsizing.

Notes
1. Throughout the paper the “state sector” refers to both the government sector and state-owned enterprises (SOEs).
2. Brown et al. (1980) proposed a decomposition method, which built on Oaxaca’s method, to account for sectoral attainment differences between males and females.
4. According to Rama (2001), about 70% of retrenched public servants in the early 1990s were females. In 1990–91 alone, over 550,000 female workers in SOEs left. This accounts for almost 20% of female wage employment in 1992–93.
5. A combination of two compensation schemes was used to encourage downsizing: a severance pay scheme, which involved a lump sum payment for younger workers and an early retirement scheme for those who were 5 years away from the legal retirement age. Both schemes were largely voluntary.
6. The gender earnings gap could also widen simply because more females move into the unregulated informal sector which pays less than the minimum wage. A lack of data has precluded us from examining females’ labour participation in the informal sector.
7. For example, the minimum wage is set at 626,000 dongs in Hanoi and Hochiminh City, 556,000 dongs in other large cities and 487,000 dongs everywhere else.
8. The Vietnam Living Standards Survey is part of a series of Living Standards surveys
conducted in an increasing number of developing countries by the World Bank and the Central Statistical Agencies. The World Bank plans to carry out follow-up surveys on an ongoing basis.

9. Missing values in the employment information 7 days before the survey have restricted this paper to the persons who worked 12 months before the survey.

10. Sixty years of age is chosen as the cut-off point for the sample. In Vietnam, the legal retirement age is 60 years for males and 55 years for females. Yet, less than 23% of all women, on average, older than 55 years of age in the two surveys reported non-participation. The legal retirement age may not be effectively implemented, especially in the private sector. About 224 observations were deleted as a result of restricting the age of the sample to 18 and above.

11. Hourly earnings rate of the main job over a 12-month period in logarithm. It includes cash and in-kind payment. It is measured in a thousand dongs.

12. Occupation dummies: (1) agriculture, fishery, hunting, forestry and animal husbandry: base group; (2) professional, technical and leaders of the Party, government, unions and SOEs; (3) clerical, sales and service work; (4) labourers: production and related fields, transport equipment operation, and other labouring jobs.

13. Urban area is coded as one and rural area is coded as zero.

14. The north is coded as one. It includes the northern mountainous regions, Red River Delta and the north central region. The south refers to the central coast region, central highlands, southeast and the Mekong Delta.

15. In Vietnam, Kinh is the major ethnic group and makes up 87% of the population. Minorities include Chinese, Thai, Khome, Mung, Dao, Tay, Huong and H’mong. A person belonging to the Kinh ethnic group is coded one, zero otherwise.

16. Liu et al. (2000) argue that there is no compelling reason why unobservable traits such as risk attitude, motivation and work effort should be gender-specific.

17. Refer to Hay (1980) for the full derivation of lambda.

18. Strictly speaking, there are two other sources of sample selection when the OLS focuses on wage-earners only by type of ownership. One arises from the fact that wage-earners are observed only when they work. The second comes from the selective decision to work in the wage sector. This analysis focuses on whether the returns to observable characteristics of a wage-earner differ from one sector to another. Therefore, these two sources of selection bias are ignored in the analysis for the sake of simplicity. Instead, Hay's procedure is used correct for endogenous selection into a particular sector, conditioned on one's decision to work in the wage sector.

19. Chow tests were conducted on three sectoral pairs (government sector versus SOEs, government versus private sector and SOEs versus private sector) based on a pooled sample (not shown here). The F-statistics for each pair were constructed. They are 3.6, 3.6 and 1.7, respectively. The hypothesis that there is no difference in the wage structures between government sector and SOEs is rejected at a 10% significant level. The same holds for the government and private sector. For SOEs and the private sector, the hypothesis is rejected at a 5% level. The results indicate that the earning structures differ from one sector to another.

20. It is interesting to investigate the regional dimension of the gender wage gap. However, further disaggregating the sample into regions as well as gender has made the sample size too small to work with.

21. The education variable is significant for females but it becomes insignificant once selection bias is corrected.

22. The small sample size may further aggravate the econometric issues of estimating the Mincerian wage equation using cross-section data. For example, occupation of employment of an individual could be an endogenous determinant of wages, and the explanatory variables may be correlated.

23. For instance, the share of discrimination accounts for 96 and 90% of the overall wage gap in state firms and collectives, but 86% in private sector in Shanghai.

References


Appendix
### Table A1. Results of earnings equation for SOE and private sector employees

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>SOEs Males</th>
<th>Females</th>
<th>Private sector Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>t-Ratio</td>
<td>Coefficient</td>
<td>t-Ratio</td>
</tr>
<tr>
<td>Potential experience</td>
<td>-0.018</td>
<td>-0.90</td>
<td>0.014</td>
<td>0.68</td>
</tr>
<tr>
<td>Potential exp²/100</td>
<td>0.014</td>
<td>0.38</td>
<td>0.017</td>
<td>0.38</td>
</tr>
<tr>
<td>Married</td>
<td>0.342</td>
<td>2.05</td>
<td>0.235</td>
<td>2.17</td>
</tr>
<tr>
<td>Migrant</td>
<td>-0.378</td>
<td>-3.74</td>
<td>-0.078</td>
<td>-0.63</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>0.019</td>
<td>0.90</td>
<td>0.056</td>
<td>2.93</td>
</tr>
<tr>
<td>Urban</td>
<td>0.261</td>
<td>2.11</td>
<td>0.125</td>
<td>1.12</td>
</tr>
<tr>
<td>North</td>
<td>-0.443</td>
<td>-3.70</td>
<td>-0.649</td>
<td>-6.58</td>
</tr>
<tr>
<td>Majority</td>
<td>-0.302</td>
<td>-1.32</td>
<td>0.060</td>
<td>0.19</td>
</tr>
<tr>
<td>Professionals</td>
<td>0.405</td>
<td>2.05</td>
<td>-0.016</td>
<td>-0.08</td>
</tr>
<tr>
<td>Office/trade workers</td>
<td>-0.012</td>
<td>-0.07</td>
<td>-0.126</td>
<td>-0.65</td>
</tr>
<tr>
<td>Labourer</td>
<td>0.090</td>
<td>0.54</td>
<td>-0.159</td>
<td>-1.11</td>
</tr>
<tr>
<td>Constant</td>
<td>0.740</td>
<td>2.16</td>
<td>-0.432</td>
<td>-1.09</td>
</tr>
</tbody>
</table>

No. of observations: 231 215 876 539
Adjusted $R^2$: 0.325 0.3855 0.1915 0.1864
F-statistics: 5.14 10.88 8.74 7.38

Note: the t-values in bold and in italics are significant at the 5 percent and 10 percent level respectively