

Impact of Economic Reform on Wage Structure in Vietnam

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Abstract

Using the two rounds of Viet Nam Living Standards Survey collected in 1992-93 and 1997-98, this paper examines various aspects of the changing wage structure in the post-reform era, namely, gender wage gap and overall wage inequality. The results reveal that, in 1998, discrimination rather than endowment account for most of the within-sectoral gender wage differentials. While the within-sector differences are more important than the between-sector differences, the latter indicates that public sector downsizing has worsened women's economic position as more women move away from the public sector to the private sector. Over time, the gender wage gap has narrowed. However, the decomposition results have highlighted that the narrowing gender pay gap has masked increase in discrimination. The analysis of the overall wage inequality indicates that in Viet Nam, unlike in other transition economies, wage inequality has decreased. Residual effect is identified as the key contributing factor to this outcome. The disequalising impact on inequality from the human capital and economic restructuring effect are evident but are completely offset by the equalising impact of the residuals.

Key words: Gender Wage Gap, Vietnam, Discrimination, Wage Inequality; *JEL classification:* J40, J71, P23, O15, J31

1. Introduction

Recently, there has been a growing interest in the issue of changes in the wage structure during transition. The disintegration of the centrally planned regime is expected to induce profound changes in the labour market. Economic restructuring is likely to undermine the centrally-determined wage structure and give rise to differential wage movements across industries, occupations, and skill groups. Much research in this regard has focused on the EEC (Eastern European countries). For instance, Krueger et al. (1995) studied East Germany; Rutkowski (1996), Newell and Socha (1998) researched on Poland; Flanagan (1998), Večerník (1994) examined Czech and Slovak Republics; and Orazem and Vodopivec (1995) studied Slovenia. The literature has found that most EEC (except Czech Republics (Flanagan 1998)) have experienced an increase in wage dispersion during the course of transition.

The initial conditions, such as the predominance of agriculture, the small size of its state enterprise sector, the limited development of heavy industries, etc., make Viet Nam similar to China. However, these features distinguish Viet Nam from the EEC and the former Soviet Union. Compared with China, Viet Nam has been more aggressive in macroeconomic reform. It reformed the state-owned enterprises sector early on due to

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the urgent need to control inflation in the late 1980s. Despite these differences, Viet Nam, like all other transitional economies, has undergone profound structural changes. How has the wage structure of Viet Nam changed during the course of the transition so far?

A common objective of centrally planned economies is to limit the extent of inequality. In these economies, assets are generally in the hands of the state, wages are centrally determined, and transfer policies are designed to limit income differentials. Given these starting points, transition is expected to be associated with increase in inequality. Institutional changes, such as downsizing of the public sector, introduction of wage reform and contract system, and introduction of the private sector, etc. are likely to result in wider earnings dispersion. In addition, larger regional variation and a more unequal gender wage distribution during transition can further increase the overall wage inequality.

This paper seeks to document and analyse the changes in the Vietnamese wage structure, focusing on changes in sectoral and gender wage gap. Some attempts will also be made to compare the experience of Vietnam with that of the EEC and China in order to see whether changes of the wage structure in Vietnam resembles their experience.

The paper is organized as follows. Section 2 presents the background information on Vietnam's transition and the data used. Section 3 discusses the relationship between gender wage gap and the distribution of employment across various sectors, namely government administration, state owned enterprises, and the private sector. Section 4 presents the analysis of the changes in gender wage gap over time and how they impact Vietnam's wage structure. Section 5 discusses the changes in the overall wage structure. Section 5 contains the concluding remarks.

2. Vietnam in transition

Before the 1980s, Vietnam was a centrally planned economy. Under this system, the government sector¹ 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 pre-determined salary 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-oriented economy. One important feature during the transition has been the gradual demise of SOEs and the continued emergence of private companies. Between 1986 and the mid-1990s, the total public sector² employment dropped by over a quarter. Employment in the (formal) private sector more than doubled between 1996 and 2000 (Steer and Taussig 2002), and the number of jobs created by the private sector was three times higher than that created by SOEs.

Downsizing alone could cause gender wage gap to widen because public sector wages are higher than those in the private sector and because, as the evidence suggests,

¹ Government sector refers to the Communist Party, government or army, and social organization.

² Public sector refers to government sector and state-owned enterprises collectively.

women are more likely to leave the public sector than men (Rama 2001, O’Conner 1996).³ The impact of downsizing is, therefore, not gender neutral. Downsized from the public sector, women are left with the option of joining the informal sector or moving into the private sector. Also, it is well-documented that women are over-represented in the public sector. This happens to be the result of less-discriminatory practice in the public sector and better entitlement to such benefits as maternity leave, and as well as of a lack of monitoring system in the public sector enabling females to combine work with household responsibilities. All combined, downsizing of the public sector can therefore widen the gender pay gap.

One may argue that the widening gender wage gap could be influenced by the minimum wage. For instance, breaches of the minimum wage, which often occur in the private sector in Viet Nam, if gender-related, could widen the gap even if there is no change in discrimination, now that more females have moved from the state to the private sector. Examination of the data however reveals that roughly equal proportion of male and female employees receives a monthly wage lower than the minimum wage. This suggests that breaches of the minimum wage may not be gender-related.

Aside from downsizing of the public sector, wage reform and the contract system are other key reforms in the labour market. These two important steps were taken in 1993. They specified the ‘basic wage’ to be paid to all employees as a multiple of the minimum wage rate. In practice, enterprises were allowed to calculate a different ‘basic wage’ for different skills. The ‘basic wage’ could be set on the basis of an enterprise-specific minimum wage rate - higher than the economy-wide one - as determined by productivity within the enterprise. In addition, as in China, performance-related bonuses from net profits of SOEs could be distributed to workers. As a result, skills-based wage differentials have widened. A closer link was established between wages and workers’ productivity within a firm.

Again, as has China, Viet Nam has also introduced a labour contract system. The 1994 Labour Code formalizes labour contracts as the basis for the employer–employee relationship. The introduction of the contract regime does provide more autonomy to firms in hiring and firing decisions.

Data

The data used in this study are drawn from the two rounds of the Vietnam Living Standards Survey (VLSS) conducted by the World Bank and the General Statistical Office of Vietnam. The first survey was carried out between 1992 and 1993 and the second one between 1997 and 1998. The samples used in this paper are defined as follows: Wage earners who (a) worked in the 12 months prior to the survey, (b) are aged between 18 and 60 years, inclusive;⁴ and (c) supplied earnings data. 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-

³ According to Rama (2001), about 70 percent 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 percent of female wage employment in 1992–93.

⁴ 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 percent 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.

employed due to the predominantly agrarian economy. For example, the VLSS97-98 survey shows that only about 27 percent of workers between 18 and 60 years old are wage earners. Given that we are examining a small fraction of the Vietnamese labor force, cautious interpretation of the results and their implication is necessary.

3. Gender wage gap across sectors

This section examines how gender wage gap differs across sectors, namely, the government sector (consisting mainly of public administration), SOEs, and the private sector. Preliminary data examination reveals that the government sector exhibits the least gender earnings disparity. By contrast, male employees in SOEs and the private sector are paid more than the female employees. For instance, male workers in the private sector are paid an hourly wage rate of about 26 percent more than their female counterparts. In this respect, the situation is similar to what was found in Shanghai and Jinan of China (Liu *et al.* 2000).

Male state employees tend to have a slightly longer work experience than the males employed by private firms. Married employees represent a higher proportion of the total number of employees in the government sector than in the other sectors. On average, employees of the government sector are more educated than employees in private firms. This is because the Vietnamese government controls scholarships and determines how many graduates from different disciplines are needed to fill government positions. As a consequence, over 60 percent of government employees are professionals. Private sector workers on average are less educated and most of them are laborers.

To investigate the factors that contribute to the gender wage gap, we first estimate a Mincerian earnings equation separately for the government sector, SOEs, and the private sector, and also for males and females for each survey period. The Mincerian earnings equation is specified as follows:

$$(1) \quad \ln w_i = \alpha + \beta x_i + \gamma z_i + \varepsilon_i, \quad i = 1, 2, 3,$$

where w denotes the hourly wage rate,⁵ and i indexes the sector in which an individual is employed. x is a vector of explanatory variables that includes human capital variables (years of schooling, potential experience, and its square term). z is a vector of dummy variables, namely, a dummy for migrant and marital status, seven regional dummies, an urban-rural dummy, a majority-minority dummy, and a set of occupational dummies (professionals, clerical and trade-related jobs, laborers and agricultural occupations).

We find that all three sectors reward education (results not shown here). For instance, the reward for return to schooling is 7.5 percent for an additional year of education in the government sector, and 4 percent and 4.2 percent for SOEs and the private sector, respectively. The returns to schooling are 3.3 percent and 5.5 percent 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).

⁵ Hourly earnings rate of the main job over a 12 months period in logarithm. It includes cash and in-kind payment. It is measured in a thousand *dongs*.

Table 1: Decomposition of the sectoral gender wage gap in 1997-98

	<i>Percent</i>
$\ln \bar{W}_m - \ln \bar{W}_f = 0.202$	
Earnings differences due to within sector differences	
Characteristics	-20.74
Discrimination	134.56
Earnings differences due to between sector (sectoral location) differences	
Characteristics	-19.39
Deviation males' predicted and actual sectoral location	-3.57
Not accounted for by characteristic differences	
Deviation females' predicted and actual sectoral location	12.51
Not accounted for by characteristic differences	

Notably, significant gender differences are only evident in the earnings equation for workers in SOEs and the private sector, but not for government employees. In general, returns to human capital-related variables are not significant for SOEs,⁶ but they are significant for the private sector. These results may reflect the non-human capital considerations in wage determination in the SOEs.

Work experience is found to be significant for private sector employees only. Work experience and its squared term indicate the usual inverted-U shaped relationship between wage rates and labour market experience. However, returns to experience are comparatively low in Viet Nam compared with many market economies (Blau and Kahn 1999).

To explore further the gender pay gap in various sectors, we apply the full decomposition method of Appleton *et al.* (1999) to the VLSS97-98. This method incorporates the average predicted probabilities for males and females from a multinomial logit model specifying the selection process of an individual into different sectors. It could identify to what extent within- and between-sector differences contribute to the gender wage gap at each point in time. The within-sector differences consist of the differences due to endowment and discrimination. The between-sector differences consist of three components. One measures the different earnings due to differences in distribution of male and female employees in different sectors; another two components account for the earnings differentials due to differences between predicted and actual sectoral compositions of men and women not accounted for by differences in characteristics.

The decomposition results (Table 1) indicate that within-sector differences (discrimination in particular) contribute more than between-sector differences in explaining the gender earnings gap. Nonetheless, Vietnam cannot be complacent about the between-sector gender earning disparities. This is because the part of between-sector

⁶ The education variable is significant for females but it becomes insignificant once selection bias is corrected.

difference that is due to female sectoral location alone accounts for 13 percent of the overall gender pay gap. Note that the between-sector differences are negative 11 percent in total. The negative sum implies that differences in sectoral locations are more favorable to women than men, highlighting the fact that the gender pay gap would have been 11 percent worse if men and women were equally distributed across three sectors. The over-representation of women in the higher paying public sector appears to help keep the gender pay gap smaller than it otherwise would be. Therefore, public sector downsizing worsens women's economic position as more women move away from the public sector to the private sector.

These results highlight the importance of policies, such as equal pay legislation, paid maternity leave etc., to reduce within-sector earnings inequality between men and women. Further, policies to increase human capital of females as well as educating the public to weaken traditional cultural values are some other channels to safeguard against further worsening of women's economic position.

4. Gender wage gap over time

This section takes a step further to examine how the overall gender wage gap has changed over time. As discussed earlier, the abolition of centrally determined wages, and the increased autonomy of employers as a result of labour market reforms could widen gender wage gap. Employers can use their freedom to set wages to penalise female workers in accordance with their taste (Oaxaca 1973).⁷ However, discriminating against workers on the basis of non-economic characteristics, such as gender, is costly in competitive markets. The gender wage gap has narrowed over time in Viet Nam, though the change has been small. Similar small changes (in absolute terms) are also reported for Hungary (0.054) and the Czech Republic (0.049) (Reilly 2002) and China's public sector (Kidd and Meng 2001). To investigate the factors that contributed to the narrowing of the gender wage gap, we first estimate a Mincerian earnings equation for males and females for each survey period using the same model specification as in the previous section, except we now pool individuals together irrespective of the sector.

In the following analyses of the estimated Mincerian earnings equations (results not shown here), we focus on human capital variables. We find that in 1993 males were rewarded 5 percentage points for each additional year of education, 2 percentage points higher than the returns to females. The situation was reversed in 1998.⁸ Vietnam's rates of returns in 1998 accorded well with what was reported by other empirical studies.⁹

⁷ Instead of employers' taste, some argue that discrimination could be generated by some forms of market failure and is an efficient strategy for profit-maximising employers. For instance, Chase (2000) finds evidence of labour market discrimination against Latvia's Russian minority due to the absence of an integrated and flexible labour market.

⁸ The decline is driven by the substantial fall in the rate of return to vocational education, where males are dominant. Flanagan (1998) attributes the decline, which was evident in the Czech Republic, to inappropriate skills acquired in vocational training under central planning.

⁹ Psacharopoulos and Patrinos (2002) and Flanagan (1998) report 3.7 per cent for males and 5.1 per cent for females in the Czech Republic in 1988; 4.5 per cent for males and 5.6 per cent for females in 1985 in China; 12.4 per cent for males and females in 1988 in the Philippines.

Table 2: Decomposition of changes in gender wage gap between 1993 and 1998

<i>Intertemporal decomposition</i>	$D_{98} - D_{93}$
Change in wage gap in log	-0.063
<i>Of which</i>	
Observed skill effect	-0.084
Observed prices effect	-0.027
Gap effect	0.295
Unobserved prices effect	-0.247

A usual inverted-U shaped relationship was observed between wage rates and labour market experience. The return to experience has declined for all wage earners (although the decline is larger for males), indicating that recent labour market experience is more valuable than that acquired under central planning. Chase (1998) and Flanagan (1998) report similar findings for the Czech Republic. However, a declining experience premium is not found in China (Liu 1998).

As already mentioned, the changes that have occurred in the gender pay gap in Viet Nam are small. These small changes in the gap could simply reflect the limited impact of the labour reform process, or it may be a result of different offsetting forces. We used the decomposition of Juhn et al. (1993) to investigate this question. Their method decomposes the gender wage gap into four components: the observed x effect, the observed price effect, the gap effect, and the unobserved price effect. The first term, the observed x effect, is the change in the gender wage gap due to changes in gender differences in observed labour market characteristics (education, experience). The second term is the observed price effect. It captures the effect of the changing prices of observed labour market characteristics of men. The third term, the gap effect is the result of gender discrimination. Readers need to exercise caution in attributing the gap effect entirely to discrimination. The relative position of women in the wage distribution could also represent demand or supply shocks. The last term, the unobserved price effect, measures the change in the gender wage gap due to the changes in male residual wage inequality, holding constant the mean ranking of women in the male residual distribution.

Table 2 summaries the decomposition results. The observed x effect is negative, aiding the gap to narrow. Most variables help in this narrowing process. Sectoral dummies are identified as the major contributor to the narrowing of the overall gap. The education variable, however, is found to hinder the contraction of the gap. The discrimination effect is fairly large and acts to increase the gap. In terms of absolute value, it is comparable to that found in Hungary (0.284) and the Czech Republic (0.256). This component reflects the importance of discrimination in wage determination for males and females.

A negative observed price effect indicates that changes in the prices of skills (in particular, changes in the returns to labour market experience) have narrowed the gender wage gap. A closer examination of the contribution of individual variables indicates that changes in the experience wage effect are the main contributing factor for

the observed price effect and the overall convergence. The decline in the returns to experience has hurt males more, as they tend to have longer experience than females.

The negative unobserved price effect suggests that the male residual wage inequality has fallen, contributing to narrowing of the gap. Decentralization in the labor market in China also resulted in a lower inequality, but the same does not hold for most of the EEC. For example, Reilly (2002) reports that the unobserved price effect widened the gender gap in Hungary between 1986 and 1992.

These results indicate that the narrowing of the Vietnamese gender gap during the 1990s has occurred despite the deterioration in gender discrimination. The discrimination effect offsets to a large extent the observed skill effect and observed and unobserved price effects.

As in China, discrimination hinders the narrowing of gender wage gap in Vietnam. Vietnam's underlying cultural beliefs and traditions emanate from Confucianism. Traditional culture tends to discriminate against women. As gender wage discrimination is heavily affected by employers' taste and the degree of market competitiveness, it is important to improve education about equity in the workplace in order to combat discriminatory attitudes, and also to deregulate markets further in order to encourage the development of the private sector. The latter strategy could encourage market competitiveness and could increase the cost of discriminatory practices.

5. Changing wage inequalities

This section of the paper focuses on analyzing the overall trend in wage inequalities during transition. Most work on earnings distribution on transition economies has found increase in inequality as one common characteristic of the transition. For instance, Poland, Czechoslovakia, Hungary and China all experienced large increases in earnings inequality (Atkinson and Micklewright 1992; Keane and Prasad 2002; Rutkowski 1996; Bishop and Chiou 2004; Knight and Song 2003).¹⁰

Unlike most transition economies, wage inequality in Vietnam has declined between 1992 and 1998. All inequality measures suggest that the wage inequality in Vietnam has declined between the two survey periods. For instance, the Gini coefficient falls to 0.395 in 1998, representing a decline of 7.5 percent from that in 1993. This is a remarkable achievement especially when Vietnam has also registered dramatic poverty reduction during the same period. Recall that gender wage gap for Vietnam during the same period has also narrowed, making Vietnam's experience a very impressive one.

Recall that transition involved significant sectoral restructuring (downsizing of the public sector and development of the private sector) which could prompt a widening of wage inequality. The industrial composition of employment experienced substantial shifts. Employment share of agricultural industry has dropped substantially in Vietnam; while that of trade and services have risen. Also, there is a shift towards occupations other than agricultural- and fishery-related ones. Further, industry wage premium and returns to occupations could also change during periods of economic reforms. The overall changes in wage differentials depend on the combined effect of various forces stemming from the changes in sectors, industries and occupations during the transition.

¹⁰ By 1993, the Gini and decile ratio for Poland had risen further to 0.257 and 3.03 from 0.242 and 2.86, respectively, in 1991. In the same year, the Gini and decile ratio for Hungary had risen to 0.315 and 3.67. Both Czechoslovakia and Hungary experience large increases in earnings inequality from 1986 to 1993.

Table 3: Decomposition of the contributing variables to the changes of inequality measures (Fields' decomposition)

% Change 93-98	Gini ₉₂₋₉₈ = 0.0321
<i>Restructuring</i>	-33.126
Ownership	9.654
Occupation	-35.512
Industry	-7.269
<i>Human capital</i>	-58.339
Gender	-7.370
Potential experience	7.245
Job-specific tenure	-33.850
Education	-24.364
<i>Geographical effect</i>	-1.256
Region	11.551
Urban-rural	-12.808
<i>Others</i>	-3.824
<i>Residual</i>	145.899
<i>Total</i>	100

Based on the estimated Mincerian wage equation,¹¹ we use the method proposed by Fields (2003) to identify factors contributing to the declining wage inequalities. We categorise these factors into three groups: human capital effect (including the impact due to gender, education, work experience, and job-specific tenure), impact of economic restructuring (capturing the impact of changing occupation, sectoral and industrial structures), regional effect (impact stemming from the regional dummies and urban-rural dummy), residual effect (capturing the impact due to the unobservable quantity/price effect on wage inequality), and others (impact on wage inequality due to controlled variables such as migrant and marital status, majority-minority dummy).

Table 3 presents the decomposition results. The residual effect is identified as the key factor in contributing to the convergence of wage inequality. Virtually all of the leveling of wage inequality is explained by the changes in wage structure due to the unobservables.¹² Kang and Sun (2003) also report similar findings for Korean during 1980s. To unravel the impact of unobservables on inequality would be an important agenda for future research. While Vietnamese wage inequality has narrowed, rising inequality stemming from human capital (58 percent) and economic restructuring (33 percent) are observed.

¹¹ The Mincerian earnings equation has the same specification as in the section 'changes in gender wage gap'. Now we pool individuals together irrespective of their gender. The results are not shown here but could be requested from the author.

¹² The residual effect is usually interpreted as the effect of differences in unobserved characteristics and returns. However the residuals also pick up the effect due to omitted variables and measurement errors as in all regression-based models.

Education and job-specific tenure are important human capital factors that have impacted inequality adversely over time. Among variables that capture the impact of economic restructuring, changes in occupation distribution almost accounts for all of the increase in inequalities associated with economic restructuring. The shift in occupation distribution could be a result of higher returns to professional jobs and an increase in industry-specific wage premium in 1998.

Policies to improve the quality of education, encourage regional labour market integration, and ensure more equal distribution of education are important to make a more equally distributed wage outcome sustainable. Overall, Vietnam's experience is remarkably different from most transition economies in which widening overall inequality as well as gender wage inequality are common.

6. Conclusions

This paper investigates the changes in the wage structure in Vietnam, with a focus on its sectoral and gender aspects as well as the changes in the overall wage inequality. Among different sectors of the economy, the government sector has the smallest gender pay gap during 1997-98, followed by SOEs, and then the private sector. The decomposition results using Appleton et al. (1999)'s method indicate that within-sector differences, discrimination in particular, contribute more than between-sector differences in explaining the gender wage gap in that period. The results also suggest that had women not been disproportionately located in the public sector, the gender wage gap would have been even wider. This difference in sectoral location accounts for 13 percent of the between-sector difference. Nonetheless, readers should be cautious in drawing welfare implication of SOE downsizing, as evaluation of SOE downsizing on efficiency ground is out of the scope of this paper.

Overall gender wage gap has slightly narrowed between the two survey periods. Using the decomposition method of Juhn et al. (1991), this paper has revealed that the narrowing of the pay gap has been hindered by rise in discrimination against female workers. The results of this paper suggest that education about equity in the workplace to combat discriminatory attitudes is important. Further, policies such as equal pay and paid maternity leave etc. are some keys to safeguard women's economic position.

Finally this paper examines the factors contributing to the mild decline of wage inequality in Vietnam. In contrast, the transition of most formerly centrally-planned economies has involved a widening of overall as well as gender inequality. Nonetheless, the decomposition method developed by Fields (2003) reveals that human capital factor contributes to a rise in inequality despite the apparent drop in overall inequality. This highlights the fact that Vietnam cannot afford to be complacent. Policies to encourage equal access to education are very important to sustain equitable distribution of wages and income.

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