Glass Ceiling or Sticky Floor? Examining the Gender Pay Gap across the Wage Distribution in Urban China, 1987-2004

Wei Chi
School of Economics and Management
Tsinghua University, China
& Department of Economics, Kansas State University
chiw@sem.tsinghua.edu.cn
wchi@ksu.edu

Bo Li
School of Economics and Management
Tsinghua University, China
libo@sem.tsinghua.edu.cn

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Abstract:

Using 1987, 1996, and 2004 data, we show that the gender pay gap in the Chinese urban labor market has increased across the wage distribution, and the increase was greater at the lower quantiles. We interpret this as evidence of the “sticky floor” effect. We use the reweighting and recentered influence function projection method proposed by Firpo, Fortin, Lemieux (2005) to decompose gender pay differentials across the wage distribution. We find that the gender differences in the return to labor market characteristics, also known as the “discrimination effect” or “unexplained gender pay gap”, contribute most to the increase in the overall gender pay gap. The Firpo, Fortin, and Lemieux method allows us to further decompose the gender pay gap into the contribution of each individual variable. We find that the “sticky floor” effect may be associated with a particularly low paid group of female production workers with relatively less education working in non-state owned enterprises.

JEL code: J3

Keywords: glass ceiling, sticky floor, gender pay gap, wage distribution

1. Introduction

Recent decades have witnessed a significant increase in the gender pay inequality in China.[1] According to the National Bureau of Statistics of China (NBSC), the ratio of female to male employees' average earnings had fallen by eight percentage points from 1987 to 2004. This is despite the fact that female employees' education attainment had risen faster than male employees. The percentage of female workers who received education at the college level or higher had increased by five folds from 1987 to 2004, while that for male workers had only nearly tripled.

Two reasons may contribute to the explanation of the rising gender pay gap in a transitional country such as China. Firstly, during the transition to a market economy, the return to workers' productivity characteristics such as education attainment and employment experiences tends to increase; if men and women have different characteristics, the gender pay gap may rise as the result of the increasing return to these characteristics. Secondly, the rising gender pay gap could also be the result of escalating discrimination against women in the labor market, as employers gain more autonomy in a deregulated environment to pay female employees in accordance with their discriminatory taste.[2] Like many other countries, gender discrimination is prohibited in China. The Chinese Labor Law specifies that no one can be discriminated based on gender, ethnicity or religious belief. However, the enforcement of this legislation has been weak so far. The law is still unclear on various important issues, such as the procedure to sue the company on the basis of discrimination, who

[1] Transition countries have generally experienced an increase in the gender pay gap. The increase has been greater in some countries (such as Russia and China) and smaller in others (such as Poland and Vietnam). Representative studies include but do not limit to: Adamchik and Bedi (2003); Reilly (1999); Pham and Reilly (2006); Liu (2004); Gustafsson and Li (2000).

[2] Discrimination unrelated to workers' productivity is costly in a competitive market. It cannot be sustained as the market becomes more competitive (Becker, 1971). Recent experiences of developed countries where the gender pay gap has generally declined seem to support this view (Blau and Kuhn, 2006).

bears the burden of proof or the types of punishment for offending companies.

Regarding the cause of the rising gender pay gap in China, Gustafsson and Li (2000) found that from the 1980s to the 1990s, the widening gap could not be attributed to men and women's different productivity characteristics, hence suggesting that discrimination may be the primary cause. Our study resembles Gustafsson and Li (2000) in that we also use multiple years of data to demonstrate the change in the gender pay gap (rather than just a cross-sectional picture) and investigate the cause of rising gender pay gap by decomposition.

However, our study bears some important differences from theirs, which constitute as our contribution to the existing literature: firstly, our data is nation-wide, whereas their data covers only ten provinces. Both studies focus on the urban labor market. Secondly, we have data from 2004 in addition to 1987 and 1996, while they only have data from 1988 and 1995. We are able to examine the changes in the gender pay gap from the 1980s to 1990s and from the 1990s to 2004. We investigate whether the change from the 1990s to 2004 is different from the 1980s-1990s change, and if so, in what ways. Thirdly, we examine the gender pay gap at different points of wage distribution such as median, the 25^{th} and 75^{th} percentiles, whereas Gustafsson and Li only investigated the mean gender pay gap.

The gender pay gap may be different in the upper and lower tails of wage distribution. A "glass ceiling" refers to a greater pay gap at the top end of wage distribution, suggesting that women in the upper-income brackets had a much lower pay than their male counterparts. In contrast, a "sticky floor" refers to the opposite scenario where women at the bottom of wage distribution are at a greater disadvantage and the gap was wider at the bottom (Booth, Francesconi, and Frank,

2003; Arulampalam, Booth, and Bryan, 2007). Because the gender pay gap may be different at various points of the wage distribution, recent research has emphasized examining the gender pay gap across the entire wage distribution rather than just at mean.

Arulampalam, Booth, and Bryan (2007) examined data from eleven European countries during the period of 1995-2001, and found that the glass ceiling effect existed for most of those countries. Only in a few countries did the sticky floor effect prevail. Using 1998 data for Sweden, Albrecht, Bjorklund, and Vroman (2003) found evidence of a glass ceiling in Sweden. Furthermore, De La Rica, Dolado, and LIorens (2005) and Del Río, Gradín, and Cantó (2006) used different empirical methods and both found that the glass ceiling existed in Spain for more educated workers but not for the less educated. Kee (2006) found that there was a strong glass ceiling in the Australian private sector but not the public sector. Pham and Reilly (2006) found little evidence of either the glass ceiling or sticky floor effect in Vietnam. Thus, the studies so far have generally found that the glass ceiling effect exists in developed countries, but not in developing countries.

As far as the gender pay gap research in China is concerned, besides Gustafsson and Li (2000), Maurer-Fazio, Rawski, and Zhang (1999) also found that the gender pay gap had increased in China from the 1980s to the 1990s. It has also been found that female employees received a much lower wage than males in the private sector compared to the state-owned or collective sector (Maurer-Fazio and Hughes, 2003; Dong and Bowles, 2002; Liu, Meng, and Zhang, 2000; Zhang and Dong, 2006). Some studies have also examined gender occupation segregation and the impact on male-female pay differentials in Chinese labor market (Meng and Miller, 1995; Meng,

1998a; Wang and Cai, 2005). Other than the urban labor market, the gender segmentation and discrimination in the rural market have also been investigated (Dong, MacPhail, Bowles, 2003; Rozelle, Dong, Zhang, and Mason, 2002; Meng, 1998b). Despite the somewhat extensive literature on this topic, there are few studies that have examined the evolution of gender pay gap in China since the 1990s using nation-wide data and across the entire wage distribution.

To examine the gender pay gap across wage distribution, one has to go beyond the traditional OLS regressions and Oaxaca decomposition. There are several methods available to estimate and decompose the gender pay gap at different quantiles. A popular one involves estimating quantile regressions and then using the procedure suggested by Machado and Mata (2005) to decompose the gender pay gap at a particular quantile.[3] We use a different method known as the Recentered Influence Function (RIF) projections that was developed by Firpo, Fortin, and Lemieux (2005, 2006). The RIF method generates *unconditional* quantile estimates while the commonly used Quantile Regression (QR) gives *conditional* quantile estimates. The advantages of the RIF are twofold: first, *unconditional* quantiles are usually of real interest in economic applications; second, this approach allows one to estimate the marginal effects of explanatory variables on the targeted *unconditional* quantiles. More detailed explanations of this method are provided in subsequent sections. Moreover, in analogy to the Oaxaca decomposition, we decompose the gender pay gap at different quantiles to the component attributable to the gender differences in labor market characteristics, often referred to as the "endowment effect", and the

[3] Albrecht, Bjorklund, and Vroman (2003), Kee (2006), Pham and Reilly (2006), De La Rica, Sara, and Liorens (2005), and Arulampalam, Booth, and Bryan (2007), all used the decomposition method based on the quantile regression suggested by Machado and Mata (2005).

unexplained component due to differences in the return to these characteristics (also known as the "discrimination effect"). This is done by constructing counterfactual wages that women would have earned had they received the same return to their labor market characteristics as men. Thus, the differences between men's actual wage distribution and the counterfactual distribution are attributable to men and women's different characteristics, and the differences between women's actual distribution and the counterfactual represent the unexplained gender pay gap. The counterfactual wage distribution is constructed using the reweighting technique developed by DiNardo, Fortin, Lemieux (1996), and further extended by Lemieux (2002) and Firpo, Fortin, and Lemieux (2005). Once the counterfactual wage distribution is obtained, the decomposition at different quantiles follows immediately. Finally, in conjunction with the RIF method, the explained and unexplained components of gender pay gap at each quantile can be further decomposed to the contribution of individual explanatory variables. This allows us to identify the specific characteristics that differentiated men from women that lead to the widening gender pay gap.

Our main finding is that the overall gender pay gap had increased considerably in China from 1987 to 1996 and 2004. Regarding the change from the 1980s to the 1990s, our findings are similar to Gustafsson and Li (2000). That is, the large increase in the gender pay gap could not be explained by male-female productivity differences and was potentially due to gender pay discrimination. In addition, we found that the increase in the gender pay gap was much larger at the lower tail of distribution, suggesting the "sticky floor" effect. From the 1990s to 2004, the gender pay gap continued to increase at a faster rate than the 1980s-1990s period. However, the proportion of unexplained gender pay gap remained roughly the same as before,

suggesting that the extent of gender pay discrimination had not increased further. Moreover, the sticky floor effect still existed in the 1990s-2004 period.

The remaining sections of the paper are organized as follow: Section II describes the relevant data and outlines men and women's labor market characteristics and earnings. Section III discusses the RIF method and decomposition technique. Section IV presents our main findings. Finally, section VI summarizes and concludes the paper.

2. Data and Descriptive Results

We use data from the Urban Household Survey (UHS) collected by the NBSC.[4] NBSC initiated the survey in 1986 and conducted it in each successive year. These data are used by the NBSC to generate statistics and reports to the Chinese government on income and consumption. Hence a lot of effort was spent to ensure the accuracy of the data. The survey employs the stratified method to sample households.[5] Each year half of the households are rotated out and replaced by new households, so that the sample was renewed every two years. The data was collected through individual diaries. Each individual in the surveyed households was asked to keep a record of daily cash or non-cash income and consumption. These records are reported to NBSC each quarter and compiled into yearly observations by the NBSC.

We use the yearly data from 1987, 1996, and 2004. For each year, the data set contains individual basic information such as age, the highest level of education attained, the ownership type of the employer, industry and occupation, and individual

[4] Gustafsson and Li (2000) and Démurger, Fournier, and Chen (2005) used Chinese urban household income (CUHI) data collected by Institute of Economics, Chinese Academy of Social Science, for the years of 1988 and 1995. The sample of CUHI survey was drawn from the larger sample of NBSC's Urban Household Survey. Their data cover only ten provinces.

[5] These households consist of either city/town local residents or farmer migrants who had liven in the city/town for at least half a year and are considered as the city or town's long-term residents by the government's standard.

annual labor income including both cash and non-cashed earnings.[6] Ideally, the hourly wage rates would be used to examine gender pay differentials rather than earnings because earnings are affected by hours of work which may differ between men and women as women may work fewer hours. However, NBSC UHS did not ask for information on hours of work until 2002. As a result, we could not calculate the hourly wage rate by dividing the total earnings by the number of hours of work. Hence, we use yearly earnings as a proxy of men and women's pay.[7] For the purpose of comparison over the years, earnings in 1996 and 2004 are converted into real values in RMB in the base year of 1987 using the consumer price index.

We imposed several selection criteria on the sample: first, we limit the sample to individuals aged between 16-65, i.e. the working population by the typical international standard. In China, the official retirement age is 60 for men and 55 for women. However, statistics show that many retired Chinese men and women in their late 50s and early 60s were still working.[8] We include these individuals in the sample. Second, we select those who are working and report positive earnings. Enrolled students, home stayers, the disabled or impaired who were out of the labor force permanently, and the unemployed are excluded from the sample. Finally, individuals with missing values of occupation, industry and employer's ownership type are excluded. The result is a sample of 13,217 women and 14,239 men in 1987; 14,637 women and 15,956 men in 1996; and 33,049 women and 39,975 men in 2004.

At first, we give a description of men and women's labor market characteristics

[6] Non-cash earnings such as benefits are converted to the cash value by NBSC.

[7] To justify our choice, we use 2004 data to conduct a little investigation. We found that men and women's monthly hours of work differed only by 3.4 hours. This may be because part-time jobs are limited in China and women do not have flexibility to work fewer hours. This finding suggests that in China the pay differences between genders are most likely caused by differences in wages rather than work hours and thus the analysis using annual earnings and wage rates should give similar results.

[8] Our calculation based on 2004 data shows that 18.2 percent of men aged between 60-65 and 8.6 percent of women between 55-65 were still working.

and earnings in the three years. Table 1 shows that men and women had several different characteristics. Men had more work experiences and college education. However, men and women's differences in college education reduced greatly from 1987 to 2004. Moreover, although women had less college education, they had more secondary education such as high school and vocational school. Women had always been less likely to work in construction, transportation, communication and government and more likely to work in commerce (including wholesale, retail, food and boarding), education, culture and other social, private and personal service industries. In 1987, there was actually slightly more women working in manufacturing than men; whereas in 2004 there was 16 percentage points less women than men working in manufacturing.[9] In relation to this phenomenon, the proportion of women who worked as production or other manual workers had declined while those working in sales and service occupations increased. Although the figure is catching up, women are still less likely than men to hold a managerial position. Finally, women are less likely to work in state-owned enterprises and more likely to work in collective, private, foreign, and joint venture companies.

Table 2 records men and women's average earnings in the three years of the sample. The ratio of women's average earnings to men's decreased from 84 percent in 1987 to 82 percent in 1996 and 76 percent in 2004, demonstrating the deteriorating status of the gender pay gap. Older women who had less education were paid particularly lower than their male counterparts. On the other hand, it is not evident that women are paid less in so-called "men's occupations" such as transportation and

[9] The industry classification code used in the urban household survey was the same in 1987 and 1996 and changed in 2004. The change was necessary because as Chinese economy evolves many new industries emerged. In our study, we code industry dummies to make them comparable across years.

communication or more in “women’s occupations” such as sales and service. Relative to men, women are paid much less in non-state enterprises than state-owned enterprises.

To show gender differences in pay across the wage distribution, we plot kernel density estimates of earnings distribution for men and women in 1987, 1996, and 2004 (Figure 1). The logarithm of earnings is taken. From the kernel density estimates, we recover gender differences in log earnings at different quantiles. These figures give estimates of the raw gender pay gap, as plotted in Figure 2. As it can be seen, in 1987 the gender pay differentials were similar across the distribution. In 1996, the gender pay gap at the upper half of the distribution remained roughly the same as 1987, while that at the lower half of distribution increased disproportionally, resulting in a much wider gender pay gap at the bottom. In 2004, the gender pay differentials increased across the distribution but the increase was still much larger at the lower quantiles. These findings are preliminary evidence supporting the emergence of the “sticky floor” in China.

3. Methods

The empirical methods used in this study come mainly from Firpo, Fortin, and Lemieux (2005, 2006). At the core of these methods is an unconditional quantile regression (RIF projection).

3.1 Unconditional quantile (UQ) regression/RIF projection

Regression models establish *conditional* relationships between a response variable Y and a set of explanatory variables X. However, many questions of economic and policy interest concern the influence of X on the *unconditional* statistics of Y. For instance, one would like to know what the impact of a one-year increase in education

is on earnings in a given population that contains individuals with different characteristics (unconditional effects), rather than the impact just for a subgroup with specific covariates (conditional effects). As far as the mean is concerned, the unconditional properties of *Y* can be easily obtained by averaging it over *X*. This is because linear regression models have a classical property, i.e. conditional mean model $E(Y \mid X) = X\beta$ leads to $E(Y \mid X) = E(X)\beta$ immediately. Nevertheless, this convenience hinges on the linearity of the expectation operator and hence cannot be generalized to cases with nonlinear operators such as quantiles, i.e., the conditional quantile regression models cannot answer questions about the unconditional statistical properties of the response variable *Y*. The quantile regression method developed by Koenker and Bassett (1978), which is commonly used in past research, is in fact a *conditional* quantile regression. In contrast, the RIF method proposed by Firpo, Fortin, and Lemieux (2006) is an *unconditional* quantile (UQ) regression.

Let ν be a distributional statistic of interest, in our case, a quantile. The influence function (IF) of ν at point y in robust statistics and econometrics is defined as:

$$IF(y;\nu,F) \equiv \lim_{t\downarrow 0} \frac{\nu(F_{t,\Delta_y}) - \nu(F)}{t} = \left. \frac{\partial \nu(F_{t,\Delta_y})}{\partial t} \right|_{t=0} \tag{1}$$

where $F_{t,\Delta_y} = (1-t)F + t\Delta_y$ is a slight perturbation of *F* by point mass at *y*.

The recentered influence function (RIF) is obtained by adding the original quantile back to its IF:

$$RIF(y;\nu,F) \equiv \nu(F) + IF(y;\nu,F). \tag{2}$$

For example, RIF for a quantile q_τ is given by:

$$RIF(Y;q_\tau) = q_\tau + \frac{\tau - I(Y \le q_\tau)}{f_Y(q_\tau)}, \tag{3}$$

where f_Y is the marginal density function of *Y*, and $I(\cdot)$ an indicator function.

Let G_Y be the counterfactual distribution of *Y*, obtained by replacing $F_X(x)$ with another distribution $G_X(x)$ while keeping the conditional distribution $F_{Y|X}(\cdot)$ unchanged,

$$G_Y(y) = \int F_{Y|X}(y \mid X = x) dG_X(x) . \tag{4}$$

Central to the UQ regression method is the following observation (Theorem 1 in Firpo et al, 2005):

$$\begin{aligned} \pi_G(\nu) &= \left. \frac{\partial \nu(F_{Y,t,G})}{\partial t} \right|_{t=0} = \lim_{t \downarrow 0} \frac{\nu(F_{Y,t,G}) - \nu(F)}{t} \\ &= \int RIF(y;\nu) d(G_Y - F_Y)(y) \\ &= \int E\left[RIF(Y;\nu) \mid X = x\right] d(G_X - F_X)(x) \end{aligned} \tag{5}$$

which manifests that the marginal effects of the covariates on the unconditional quantiles can be obtained by averaging the RIF-regression $E\left[RIF(Y;\nu) \mid X = x\right]$ with respect to the change in the distribution of the covariates, $d(G_X - F_X)$. One can further derive the unconditional partial effects of the covariates:

I. [Continuous covariate]: $\alpha(\nu) = \int \frac{dE\left[RIF(Y;\nu) \mid X = x\right]}{dx} dF(x)$ (6)

II. [Dummy covariate]:

$$\alpha_D(\nu) = E\left[RIF(Y;\nu;F) \mid X = 1\right] - E\left[RIF(Y;\nu;F) \mid X = 0\right] \tag{7}$$

For estimation purpose, we apply the RIF regression in Firpo et al (2006). We first estimate the RIF by replacing the unknown quantities by their estimators respectively:

$$\widehat{RIF}(Y;\hat{q}_\tau) = \hat{q}_\tau + \frac{\tau - I(Y \le \hat{q}_\tau)}{\hat{f}_Y(\hat{q}_\tau)}, \tag{8}$$

where $\hat{q}_\tau$ is the τth sample quantile, and $\hat{f}_Y$ the kernel density estimator. Then we use the familiar OLS method to fit the RIF-regression $E\left[RIF(Y;q_\tau) \mid X\right]$ with the response replaced by its estimators. Namely, we use the linear regression model

$$E\left[RIF(Y;q_\tau)\,|\,X\right]=X\beta\,. \qquad (9)$$

In this case, the partial effects of the covariates in (6) and (7) are given by the RIF regression coefficients, β. Since the true $RIF(Y;q_\tau)$ is unobservable, we use its sample analogy $\widehat{RIF}(Y;\hat{q}_\tau)$ in (9).

3.2 Counterfactual Distribution and Decomposition

A crucial question in the study of the gender wage gap is to separate the endowment effect, i.e. the pay differences due to men and women's different labor market characteristics, from the discrimination effect, i.e. the pay differences as a result of differences in the return to these characteristics. The well-known Oaxaca-Blinder technique applies to the decomposition of the *mean* wage differences between men and women, which follows immediately from the OLS estimates, but does not work for other distributional statistics such as quantiles. To solve this problem, many authors have developed decomposition methods for the entire wage distribution. Several popular ones include: a reweighting method, which essentially generates a counterfactual wage distribution (DiNardo, Fortin, and Lemieux, 1996; Lemieux, 2002); an alternative approach based on conditional quantile regressions and resampling (Machado and Mata, 2005; Autor, Katz, and Kearney, 2005; Melly, 2005, 2006); and another approach using semiparametric hazard functions to obtain the conditional densities of wage (Donald, Green, and Paarsch, 2000).

The decomposition method that we use follows from Firpo, Fortin and Lemieux (2005). This method consists of two steps. The first step resembles DiNardo et al (1996) that decomposes the overall changes or differences between the two wage distributions to those changes due to differences in characteristics and in the return to these characteristics. Specifically, let $\nu(Y)$ be a quantile of wage distribution Y. To

decompose the differences between male and female wage at a quantile, $\nu(Y_m)-\nu(Y_f)$, into the two components mentioned before, we produce a counterfactual wage Y_c, which represents the (log) wage that women could have earned had they received the same return to their labor market characteristics as men. Having done that, the overall difference $\nu(Y_m)-\nu(Y_f)$ can be decomposed into:

$$\nu(Y_m)-\nu(Y_f)=[\nu(Y_m)-\nu(Y_c)]+[\nu(Y_c)-\nu(Y_f)], \tag{10}$$

where $\nu(Y_m)-\nu(Y_c)$ represents the endowment effect and $\nu(Y_c)-\nu(Y_f)$ represents the discrimination effect. The counterfactual wage Y_c can be obtained by reweighting. We define the reweighting factor as

$$\psi_i=\left[(1-p(X_i))/p(X_i)\right]\times\left[p/(1-p)\right], \tag{11}$$

where $p(X)$ is "the probability of a worker being a male given individual attributes *X*" and *p* denotes the proportion of males in the population. Then the reweighted data ψY_m can be regarded as realizations from the counterfactual wage distribution Y_c. In practice, $p(X)$, which may be regarded as the "propensity score", can be estimated by the usual logit/probit model.

In the second step, the endowment effect and the discrimination effect are further decomposed to the contribution of each individual covariate, as it is usually done with the Oaxaca-Blinder composition. We note that the Machado-Marta approach can also be used for the same purpose. Nevertheless their method entails multiple resamplings and hence is computationally intensive. For each year, using the RIF-projection method (9), we estimate the contribution of each explanatory variable to the unconditional quantiles of male, female and counterfactual wages, which permits the further decomposition of the contribution of each *X* variable to the two effects. Specifically, we take the expectation on both sides of (9) yields

$$q_\tau(Y_k) = E(X_k)\beta_k, k = m, f, c \quad (12)$$

where the subscripts *m, f, c* represent male, female and counterfactual respectively. (12) is estimated by

$$\hat{q}_\tau(Y_k) = \overline{X}_k\hat{\beta}_k, k = m, f, c, \quad (13)$$

from which it follows the decomposition of the gender pay differences at a quantile attributable to a specific *X* variable as following:

$$\hat{q}_\tau(Y_m) - \hat{q}_\tau(Y_f) = \overline{X}_m(\hat{\beta}_m - \hat{\beta}_c) + (\overline{X}_m\hat{\beta}_c - \overline{X}_f\hat{\beta}_f). \quad (14)$$

4. Results

4.1 RIF Pooled Regression with Gender Dummy

As shown in the descriptive results (Table 1), men and women had different labor market characteristics. We begin by investigating into the extent which gender pay differentials at different points of distribution may be explained by men and women's different characteristics. The pooled regressions with gender dummies are estimated for 10th, 20th… up to 90th quantiles using the RIF method. The pooled regressions impose the restriction that men and women receive the same return to a labor market characteristic. Consequently, the coefficient estimate of gender dummy indicates the gender gap that remains unexplained after controlling the individuals' characteristics. To see how much of the observed raw gender pay gap can be explained by various characteristics, we conduct stepwise regressions. The list of control variables used in each step can be seen in Table 3. For the purpose of brevity, only the estimates of gender dummies are reported. The complete estimates of the model with the full set of control variables (the last row under each year in Table 3) are reported in Appendix Table 1a, Table 1b, and Table 1c for 1987, 1996, and 2004 respectively.

Since the RIF estimates can be explained as the marginal effect of explanatory

variables, the results suggest that the unexplained gender pay gap varies between 8-10 percent across the distribution in 1987. The gender pay gap increased rapidly in the later years. The unexplained gap ranged between 11-34 percent in 1996 and 17-32 percent in 2004. It also appears that the gender pay gap became much wider at lower quantiles in 1996 and 2004, suggesting that a "sticky floor" has emerged in China. The evident inter-quantile differences also justify the use of RIF (unconditional quantile regressions) rather than OLS. To test whether the pooled estimation is appropriate, we interact all explanatory variables with the gender dummy and conduct a Wald test. The result is significant at the one percent level, suggesting that the return to labor market characteristics such as education attainment is significantly different between men and women. This also implies that the estimations should be done for each gender separately.

4.2 Separate RIF Regressions for Men and Women

Table 4a, Table 4b, and Table 4c show the RIF estimates for men and women at the 10^{th}, 50^{th}, and 90^{th} quantiles for 1987, 1996, and 2004 respectively. Except for the 10th quantile in 1986 and 2004, the return to a one-year increase in work experiences was greater for women than men. Compared to the return to the education at a junior high level or below, return to college and high school education was also greater for women than men. On the other hand, a lower return is found for women working in private, foreign or joint-venture enterprises than state-owned or collective enterprises and for female production and manual workers than white-collar professional and managerial employees. Over time, these patterns did not diminish but rather strengthened.

4.3 Counterfactual Distribution and Decomposition

Since men and women had different labor market characteristics and also differences in the return to these characteristics, we decompose gender pay differentials to those explained by male-female different characteristics (also referred to as the "endowment effect") and those due to differences in the return to their similar characteristics (also known as the "unexplained gap" or the "discrimination effect"). As we explained in section 3, there are several approaches to decompose differences between two distributions. We adopt the semi-parametric method developed by Dinardo, Fortin, and Lemieux (1996), and extended by Lemieux (2002) and Firpo, Fortin, and Lemieux (2005). At the center of this method, we construct a counterfactual distribution using the "reweighting" technique. For each year, we construct the counterfactual distribution of earnings that women could have earned had they received the same return to a labor market characteristic as men. Men and women's actual distribution and the counterfactual distribution (denoted as "1987c," "1996c," and "2004c") are shown in Figure 3.

The differences between men's actual wage distribution and the women's counterfactual represent the gender pay gap due to the endowment differences; the differences between women's actual distribution and the counterfactual indicate the unexplained gap resulting from gender differences in the return to labor market characteristics or the discrimination effect. As it can be seen, the discrimination effect increased considerably from 1987 to 1996 and 2004. In fact, it accounted for more than half of the raw gap in 1996 and 2004. To show the decomposition results more clearly, Table 5 shows the explained and unexplained gender pay gap at mean and the 10^{th}, 20^{th}, …to 90^{th} quantiles. Over time, the mean gender pay gap increased significantly from 1987 to 1996, featuring a large increase in the unexplained gender

pay gap potentially due to discrimination. From 1996 to 2004, the gender pay gap continued to increase but the proportion of unexplained component did not significantly increase further. Across the distribution, the overall gender pay gap and the subcomponents were similar at different quantiles in 1987, while they became quite different in 1996 and 2004. Specifically, they were greater at the lower quantiles than the upper quantiles, lending strong support to the “sticky floor” hypothesis.

4.4 Decomposition with RIF

Using RIF, we further decompose the endowment effect and the discrimination effect to the contribution of each explanatory variable. The results are documented in Table 6a, Table 6b, and Table 6c for 1987, 1996, and 2004 respectively. If an explanatory variable is a dummy variable, the estimate should be interpreted as the relative contribution of this specific variable to the base group. In all the three years, gender differences in work experiences, college education attainment, ownership type of employers, and the likelihood of working in the manufacturing industry and managerial occupation constitute a large portion of the endowment effect.

On the other hand, since the return to employment experiences and the return to college and high school education attainment (relative to that of junior high level or below) were higher for women than men, these variables actually equalize the pay between men and women rather than widen the gap. As shown in the earlier results (Table 4a, Table 4b, and Table 4c), women were paid a lower wage especially in private, foreign or joint venture companies (the base group) than in state-owned or collective companies. This leads to the results in Table 6a, Table 6b, and Table 6c, which show that the estimates for the state and collective enterprises are negative, suggesting that different returns to men and women in the state-owned or collective

sectors contribute less to the overall discrimination effect than the base group, i.e. different returns in the private, foreign or joint venture companies.

Similarly, earlier results (Table 4a, Table 4b, and Table 4c) show that relative to men, women who worked as production and manual laborers (the base group) received a lower pay than those in professional and clerical jobs. Accordingly, the results in Table 6a, Table 6b, and Table 6c, show that the male-female differences in the return to professional and clerical occupations contribute less to the discrimination effect than the different returns to male and female manual laborers. Overall, the results suggest that the gender pay discrimination comes mostly from discrimination against women who were less educated, blue-collar production workers working in private, foreign, or joint venture companies.

5. Summary and Conclusion

Using a representative sample of national data for 1987, 1996, and 2004, we examine the evolution of gender pay gap across the wage distribution in China. We found that the overall gender pay gap and the component due to gender differences in the return to labor market characteristics (the discrimination effect) had increased substantially from 1987 to 1996 and 2004. The increase was greater for lower quantiles than upper quantiles, hence the raw gender pay gap and the gap due to discrimination became much wider at the bottom of wage distribution. We interpret this as evidence of the “sticky floor” effect.

Using the RIF projection, we further decompose the gender pay gap and the explained and unexplained components into the contribution of each individual variable. The gender differences in years of work experiences, college education attainment, and the likelihood of working in manufacturing and holding managerial

positions contributed most to the explained gap. By contrast, the lower return to women who only had junior high or lower levels of education and worked as production and manual laborers in private, foreign or joint venture enterprises accounts for most of the unexplained gap. Our study thus posits that women, especially those low-wage earners who have had relatively less education, working as production workers in non-state sectors, may face aggravated pay discrimination.

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Table 1: labor Market Characteristics by Gender, 1987-2004

	1987		1996		2004	
	Male	Female	Male	Female	Male	Female
Age	38.82	35.68	40.06	37.66	42.31	39.43
Education						
College	14.56	6.08	26.51	15.3	36.88	31.29
High School	34.52	35.83	40.76	47.65	37.88	45.41
Junior High & Below	50.92	58.09	32.73	37.04	25.24	23.3
	100%	*100%*	*100%*	*100%*	*100%*	*100%*
Industry						
Manufacturing	39.93	43.63	38.7	37.75	25.06	20.98
Construction	4.32	2.84	3.7	2.51	3.90	1.88
Transportation & communication	7.82	4.13	7.19	4.26	11.42	5.82
Wholesale, retail, food & boarding	11.01	17.34	12.18	17.93	10.34	17.28
Education, cultural, health care, sports, and social service	10.06	13.78	10.28	14.50	10.13	15.08
Science, research, technical service	2.69	1.58	2.96	2.15	2.88	2.72
Other personal and private service	1.96	2.85	3.75	5.01	8.57	12.71
Finance, insurance & real estate	1.85	2.02	2.41	2.35	4.68	5.87
Government	14.78	7.13	16.1	10.9	15.05	12.69
Other	5.60	4.70	2.74	2.64	7.97	4.97
	100%	*100%*	*100%*	*100%*	*100%*	*100%*
Occupation						
Professional & Technical	15.77	16.37	21.85	24.42	19.49	20.77
Managerial	13.84	2.96	11.49	3.07	7.03	2.25
Clerical	21.97	19.76	21.94	21.89	30.46	30.31
Sales	4.43	9.67	4.74	9.5	3.87	8.71
Service	2.84	8.59	2.51	6.4	8.14	17.22
Production and other manual workers	41.14	42.64	37.46	34.71	31.01	20.75
	100%	*100%*	*100%*	*100%*	*100%*	*100%*
Ownership						
State-owned	84.29	69.53	84.6	74.11	71.13	60.56
Collective	14.17	28.04	9.16	18.1	5.29	8.57
Private or self-employed	0.84	1.21	2.65	2.77	8.91	9.96
Foreign or Joint venture	0.7	1.22	3.59	5.01	14.67	20.91
	100%	*100%*	*100%*	*100%*	*100%*	*100%*
Region						
East	40.65	40.92	42.64	42.9	49.14	48.75
Central	34.43	34.16	35.72	35.33	31.53	31.57
West	24.92	24.92	21.64	21.77	19.33	19.69
	100%	*100%*	*100%*	*100%*	*100%*	*100%*

Source: NBSC Urban Household Survey, 1987, 1996, and 2004

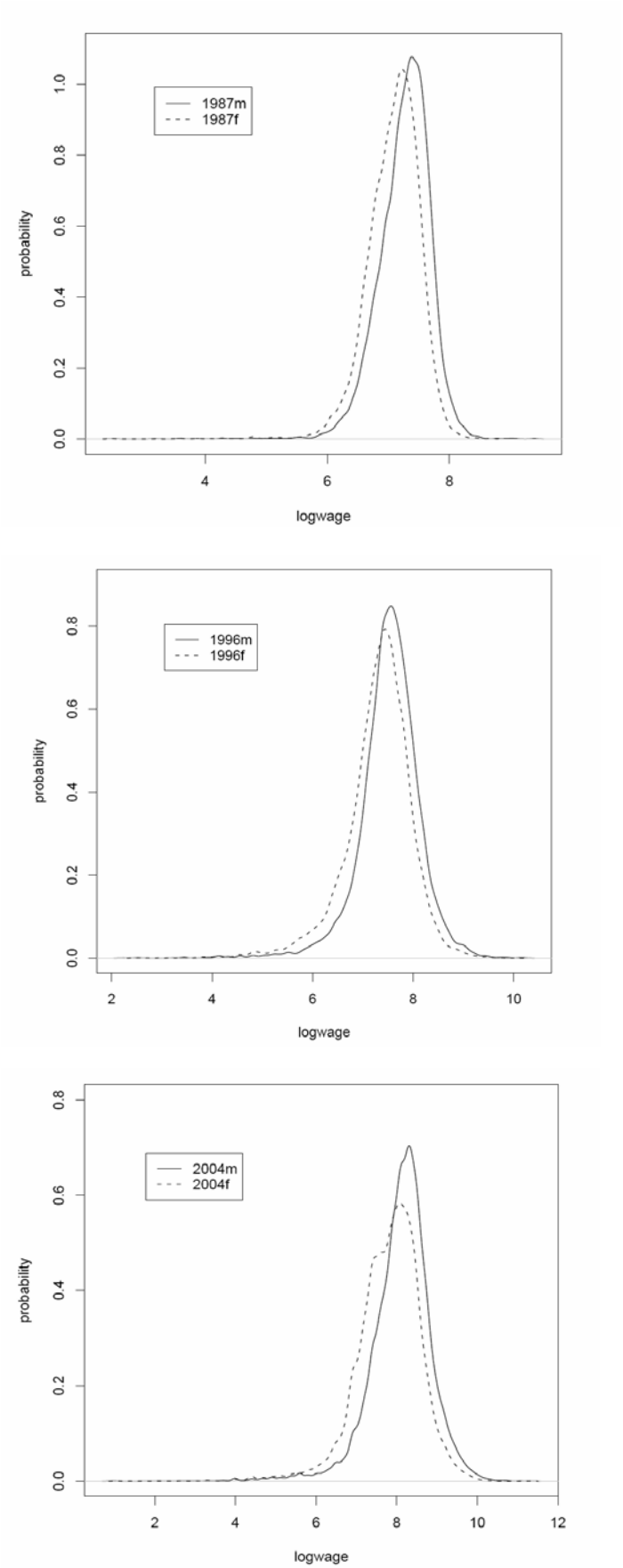
Table 2: Descriptive Gender Pay Gap, 1987-2004

	1987			1996			2004		
	Male	Female	*F/M*	Female	Male	*F/M*	Male	Female	*F/M*
Mean Earnings	1546.52	1294.05	*84%*	2189.26	1793.85	*82%*	4215.07	3203.51	*76%*
Mean Earnings by Age Group									
Age 16-25	966.24	926.50	*96%*	1374.02	1335.55	*97%*	2682.18	2498.88	*93%*
Age 26-35	1387.04	1257.62	*91%*	1979.39	1703.11	*86%*	3955.35	3219.52	*81%*
Age 36-45	1636.97	1410.91	*86%*	2306.51	1931.79	*84%*	4414.27	3309.49	*75%*
Age 46-55	1866.93	1538.59	*82%*	2461.39	2002.97	*81%*	4291.34	3246.32	*76%*
Age 56-65	1917.08	1446.32	*75%*	2482.00	1099.14	*44%*	4563.85	2583.26	*57%*
Mean Earnings by Education									
College	1770.59	1591.47	*90%*	2500.13	2190.15	*88%*	5315.99	4352.00	*82%*
High School	1479.96	1306.76	*88%*	2098.73	1825.61	*87%*	3811.18	2942.00	*77%*
Junior High & Below	1527.59	1255.10	*82%*	2050.20	1589.28	*78%*	3212.95	2170.53	*68%*
Mean Earnings by Industry									
Manufacturing	1488.50	1280.75	*86%*	2096.24	1703.32	*81%*	3701.59	2754.42	*74%*
Construction	1618.07	1354.88	*84%*	2225.55	1682.39	*76%*	3689.35	2974.13	*81%*
Transportation & communication	1606.54	1327.47	*83%*	2568.81	2104.35	*82%*	4334.76	3598.77	*83%*
Wholesale, retail, food & boarding	1414.73	1220.29	*86%*	1981.43	1675.75	*85%*	3336.80	2464.24	*74%*
Education, cultural, health care, sports, and social service	1661.26	1413.56	*85%*	2329.87	2043.27	*88%*	4951.63	4211.95	*85%*
Science, research, technical service	1781.86	1461.99	*82%*	2360.31	1948.83	*83%*	5697.20	4500.68	*79%*
Other personal & private service	1503.57	1172.59	*78%*	2473.32	1712.79	*69%*	3634.17	2470.69	*68%*
Finance, insurance & real estate	1530.25	1332.76	*87%*	2624.95	2221.98	*85%*	4770.25	3578.59	*75%*
Government	1617.43	1370.55	*85%*	2165.99	1873.72	*87%*	4889.30	3759.53	*77%*
Other	1594.66	1157.64	*73%*	2034.64	1442.05	*71%*	4609.42	3534.31	*77%*
Mean Earnings by Occupation									
Professional & Technical	1750.16	1498.04	*86%*	2428.29	2096.57	*86%*	5193.23	4377.73	*84%*
Managerial	1857.42	1726.93	*93%*	2589.91	2492.16	*96%*	5604.47	4627.16	*83%*
Clerical	1533.71	1369.61	*89%*	2179.06	1912.85	*88%*	4708.97	3707.44	*79%*
Sales	1252.07	1190.36	*95%*	1756.67	1548.89	*88%*	2665.16	2092.98	*79%*
Service	1367.64	1152.28	*84%*	2062.19	1599.18	*78%*	2752.80	2193.53	*80%*
Production and other manual workers	1414.74	1202.76	*85%*	1996.15	1546.90	*77%*	3437.32	2505.98	*73%*
Mean Earnings by Ownership									
State-owned	1583.00	1364.69	*86%*	2205.98	1907.68	*86%*	4547.38	3734.50	*82%*
Collective	1301.72	1134.37	*87%*	1698.52	1366.11	*80%*	3048.64	2414.90	*79%*
Private or self-employed	1778.82	1190.33	*67%*	2606.07	1683.07	*65%*	2474.18	1730.16	*70%*
Foreign or Joint venture	1832.04	1040.20	*57%*	2738.84	1717.07	*63%*	4082.12	2690.92	*66%*
Mean Earnings by Region									
East	1616.95	1389.13	*86%*	2683.08	2169.10	*81%*	4919.98	3596.90	*73%*
Central	1458.46	1198.53	*82%*	1797.52	1477.77	*82 %*	3518.30	2780.39	*79%*
West	1553.31	1268.88	*82%*	1863.00	1567.22	*84%*	3559.93	2785.33	*78%*

Source: NBSC Urban Household Survey, 1987, 1996, and 2004

Note: Earnings are converted to real values in 1987 RMB. “F/M” indicates the ratio of female’s average earnings over males’.

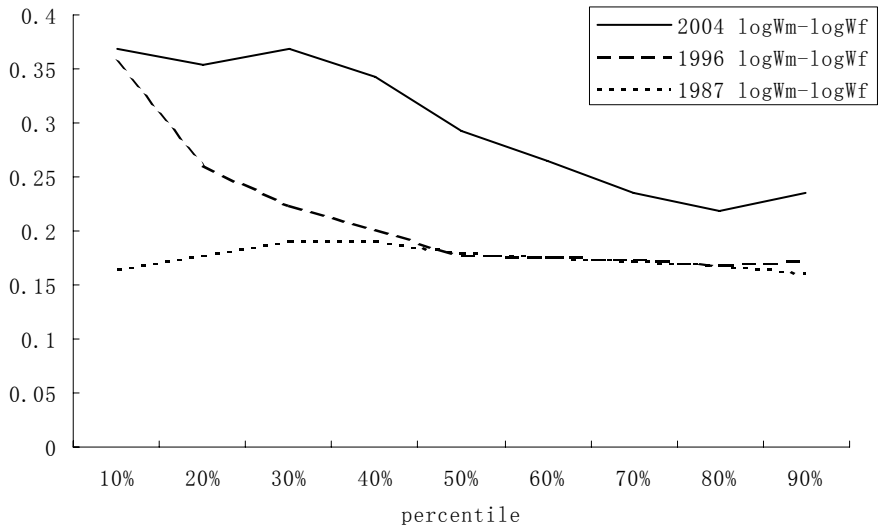
Figure 1: Kernel Density Estimates of Log Earnings Distribution by Gender in 1987-2004



Source: NBSC Urban Household Survey, 1987, 1996, and 2004

Note: Logarithm of earnings is taken for men and women in each year. “1987m,” “1996m,” and “2004m,” are for males; “1987f,” “1996f,” and “2004f,” are for females.

Figure 2: Raw Gender Pay Gap by Quantile, 1987-2004



Source: NBSC Urban Household Survey, 1987, 1996, and 2004

Note: Logarithm of earnings is taken for men and women in each year. “logWm-logWf” indicates the difference in log earnings between men and women.

Table 3: Pooled Unconditional Quantile Regression/RIF Projection Estimates with Gender Dummy, 1987-2004

1987	10th	20th	30th	40th	50th	60th	70th	80th	90th	OLS-mean
Observed Raw Gender Gap	0.164	0.178	0.191	0.190	0.180	0.176	0.172	0.169	0.162	0.179
Gender gap with control for age and education	0.128	0.136	0.130	0.131	0.122	0.121	0.115	0.109	0.100	0.124
Gender gap with control for age, education, and ownership type	0.099	0.110	0.106	0.110	0.105	0.107	0.103	0.100	0.095	0.106
Gender gap with control for age, education, ownership type, industry and occupation	0.093	0.098	0.094	0.097	0.093	0.092	0.089	0.086	0.078	0.093
Gender gap with control for age, education, ownership type, industry and occupation, and region	0.093	0.098	0.093	0.097	0.093	0.092	0.090	0.086	0.078	0.093
1996										
Observed Raw Gender Gap	0.355	0.262	0.225	0.201	0.177	0.176	0.175	0.168	0.173	0.223
Gender gap with control for age and education	0.339	0.228	0.185	0.154	0.138	0.132	0.123	0.125	0.132	0.182
Gender gap with control for age, education, and ownership type	0.286	0.193	0.157	0.131	0.119	0.116	0.111	0.118	0.131	0.161
Gender gap with control for age, education, ownership type, industry and occupation	0.294	0.197	0.158	0.129	0.116	0.109	0.103	0.111	0.120	0.160
Gender gap with control for age, education, ownership type, industry and occupation, and region	0.296	0.198	0.159	0.130	0.118	0.111	0.104	0.113	0.122	0.160
2004										
Observed Raw Gender Gap	0.368	0.354	0.369	0.342	0.293	0.264	0.236	0.219	0.235	0.296
Gender gap with control for age and education	0.366	0.334	0.357	0.294	0.247	0.214	0.186	0.184	0.180	0.255
Gender gap with control for age, education, and ownership type	0.319	0.291	0.310	0.254	0.215	0.188	0.166	0.170	0.172	0.223
Gender gap with control for age, education, ownership type, industry and occupation	0.277	0.259	0.281	0.238	0.204	0.179	0.159	0.163	0.163	0.201
Gender gap with control for age, education, ownership type, industry and occupation, and region	0.276	0.258	0.280	0.236	0.202	0.177	0.158	0.160	0.160	0.200

Source: NBSC Urban Household Survey, 1987, 1996, and 2004

Note: The complete estimates for the model with the full control (the last row under each year) are reported in Appendix Table 1a, 1b, and 1c.

Table 4a: Unconditional Quantile Regression/RIF Projection Estimates for Male and Female Separately, 1987

1987	RIF Estimates-Male						RIF Estimates-Female					
	10th		50th		90th		10th		50th		90th	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Constant	2.920	*0.081*	6.113	*0.048*	7.686	*0.057*	3.308	*0.080*	5.503	*0.053*	7.208	*0.058*
Age	0.171	*0.004*	0.045	*0.002*	-0.005	*0.002*	0.142	*0.004*	0.059	*0.003*	-0.003	*0.003*
Age*Age/100	-0.184	*0.004*	-0.034	*0.003*	0.019	*0.003*	-0.170	*0.005*	-0.059	*0.004*	0.019	*0.004*
College	0.045	*0.022*	0.030	*0.013*	0.102	*0.015*	0.083	*0.029*	0.076	*0.019*	0.225	*0.021*
High School	0.015	*0.014*	0.001	*0.008*	0.031	*0.010*	0.076	*0.014*	0.027	*0.010*	0.046	*0.010*
Junior High & Below	-	-	-	-	-	-	-	-	-	-	-	-
State-owned	0.128	*0.049*	-0.064	*0.029*	-0.246	*0.035*	0.474	*0.041*	0.195	*0.027*	-0.011	*0.029*
Collective	-0.011	*0.051*	-0.156	*0.030*	-0.295	*0.036*	0.283	*0.041*	0.014	*0.027*	-0.102	*0.030*
Private, foreign, joint venture	-	-	-	-	-	-	-	-	-	-	-	-
Manufacturing	-0.002	*0.020*	0.023	*0.012*	0.082	*0.014*	0.025	*0.027*	0.093	*0.018*	0.134	*0.019*
Construction	-0.010	*0.034*	0.038	*0.020*	0.170	*0.024*	0.001	*0.043*	0.044	*0.028*	0.225	*0.031*
Transportation& communication	0.008	*0.027*	0.076	*0.016*	0.149	*0.019*	0.023	*0.037*	0.067	*0.025*	0.166	*0.027*
Wholesale,retail,food&boarding	-0.076	*0.027*	-0.018	*0.016*	0.057	*0.019*	-0.029	*0.031*	-0.008	*0.020*	0.092	*0.022*
Education, cultural,health care, sports, & social service	-0.004	*0.046*	0.011	*0.027*	0.078	*0.033*	0.018	*0.044*	-0.045	*0.029*	0.077	*0.032*
Science, research, technical service	-0.022	*0.026*	-0.008	*0.015*	0.041	*0.018*	-0.012	*0.029*	0.022	*0.019*	0.044	*0.021*
Other personal & private service	-0.014	*0.040*	0.091	*0.023*	0.177	*0.028*	0.054	*0.052*	0.115	*0.035*	0.218	*0.038*
Finance, insurance& real estate	0.028	*0.046*	-0.043	*0.027*	0.091	*0.032*	0.096	*0.047*	0.028	*0.031*	0.134	*0.034*
Other industries	-0.007	*0.030*	0.042	*0.018*	0.150	*0.022*	-0.194	*0.037*	-0.004	*0.025*	0.102	*0.027*
Government	-	-	-	-	-	-	-	-	-	-	-	-
Professional & Technical	0.051	*0.023*	0.074	*0.014*	0.052	*0.016*	0.075	*0.023*	0.137	*0.015*	0.087	*0.017*
Managerial	0.053	*0.022*	0.106	*0.013*	0.109	*0.015*	0.079	*0.038*	0.241	*0.025*	0.245	*0.028*
Clerical	0.060	*0.018*	-0.026	*0.011*	-0.008	*0.013*	0.094	*0.019*	0.098	*0.013*	0.043	*0.014*
Sales	-0.085	*0.035*	-0.060	*0.021*	-0.030	*0.025*	0.023	*0.029*	0.054	*0.019*	0.019	*0.021*
Service	-0.026	*0.038*	-0.053	*0.023*	-0.040	*0.027*	-0.111	*0.025*	0.010	*0.017*	0.011	*0.018*
Production & manual workers	-	-	-	-	-	-	-	-	-	-	-	-
East	0.092	*0.014*	0.087	*0.008*	0.096	*0.010*	0.132	*0.014*	0.115	*0.009*	0.126	*0.010*
Central	-	-	-	-	-	-	-	-	-	-	-	-
West	0.032	*0.016*	0.017	*0.009*	0.036	*0.011*	-0.004	*0.016*	-0.013	*0.010*	0.061	*0.011*

Source: NBSC Urban Household Survey, 1987

Table 4b: Unconditional Quantile Regression/RIF Projection Estimates for Male and Female Separately, 1996

1996	RIF Estimates-Male						RIF Estimates-Female					
	10th		50th		90th		10th		50th		90th	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Constant	1.304	*0.129*	5.980	*0.059*	7.321	*0.097*	0.741	*0.171*	5.211	*0.069*	6.765	*0.103*
Age	0.248	*0.006*	0.056	*0.003*	0.037	*0.005*	0.271	*0.009*	0.086	*0.004*	0.044	*0.006*
Age*Age/100	-0.279	*0.008*	-0.053	*0.004*	-0.037	*0.006*	-0.346	*0.012*	-0.099	*0.005*	-0.049	*0.007*
College	0.196	*0.030*	0.143	*0.014*	0.151	*0.023*	0.217	*0.044*	0.175	*0.018*	0.195	*0.026*
High School	0.145	*0.023*	0.060	*0.011*	0.058	*0.017*	0.128	*0.029*	0.086	*0.012*	0.078	*0.018*
Junior High & Below	-	-	-	-	-	-	-	-	-	-	-	-
State-owned	0.170	*0.042*	-0.011	*0.019*	-0.396	*0.031*	0.421	*0.050*	0.132	*0.020*	-0.110	*0.030*
Collective	-0.161	*0.050*	-0.227	*0.023*	-0.527	*0.038*	-0.021	*0.055*	-0.135	*0.022*	-0.283	*0.033*
Private, foreign, joint venture	-	-	-	-	-	-	-	-	-	-	-	-
Manufacturing	-0.077	*0.031*	0.052	*0.014*	0.083	*0.024*	0.067	*0.048*	0.023	*0.019*	0.101	*0.029*
Construction	-0.151	*0.055*	0.127	*0.025*	0.183	*0.041*	0.007	*0.085*	0.032	*0.034*	0.163	*0.052*
Transportation& communication	0.044	*0.043*	0.194	*0.020*	0.305	*0.033*	0.181	*0.070*	0.126	*0.028*	0.340	*0.042*
Wholesale, retail, food& boarding	-0.172	*0.041*	0.008	*0.019*	0.104	*0.031*	0.010	*0.055*	-0.018	*0.022*	0.150	*0.033*
Education, cultural, health care, sports, and social service	-0.018	*0.054*	0.109	*0.025*	0.231	*0.041*	-0.176	*0.067*	0.031	*0.027*	0.158	*0.041*
Science, research, technical service	-0.033	*0.039*	0.075	*0.018*	0.086	*0.029*	0.086	*0.051*	0.083	*0.021*	0.119	*0.031*
Other personal & private service	-0.025	*0.059*	0.072	*0.027*	0.152	*0.044*	0.076	*0.090*	0.003	*0.036*	0.064	*0.054*
Finance, insurance & real estate	0.106	*0.064*	0.275	*0.030*	0.309	*0.048*	0.229	*0.086*	0.230	*0.035*	0.350	*0.052*
Other industries	-0.153	*0.061*	-0.078	*0.028*	-0.007	*0.046*	-0.420	*0.084*	-0.118	*0.034*	-0.022	*0.051*
Government	-	-	-	-	-	-	-	-	-	-	-	-
Professional & Technical	0.217	*0.032*	0.063	*0.015*	0.046	*0.024*	0.379	*0.041*	0.196	*0.016*	0.128	*0.025*
Managerial	0.237	*0.037*	0.152	*0.017*	0.142	*0.028*	0.442	*0.078*	0.332	*0.031*	0.339	*0.047*
Clerical	0.149	*0.029*	0.003	*0.013*	0.021	*0.022*	0.262	*0.039*	0.128	*0.016*	0.132	*0.024*
Sales	-0.138	*0.054*	-0.071	*0.025*	-0.123	*0.040*	0.135	*0.058*	0.016	*0.023*	-0.020	*0.035*
Service	-0.023	*0.063*	0.027	*0.029*	-0.042	*0.047*	0.019	*0.056*	0.055	*0.023*	0.048	*0.034*
Production &other manual workers	-	-	-	-	-	-	-	-	-	-	-	-
East	0.254	*0.021*	0.295	*0.010*	0.464	*0.016*	0.302	*0.027*	0.316	*0.011*	0.453	*0.016*
Central	-	-	-	-	-	-	-	-	-	-	-	-
West	0.030	*0.025*	0.021	*0.012*	0.005	*0.019*	0.101	*0.033*	0.060	*0.013*	-0.012	*0.020*

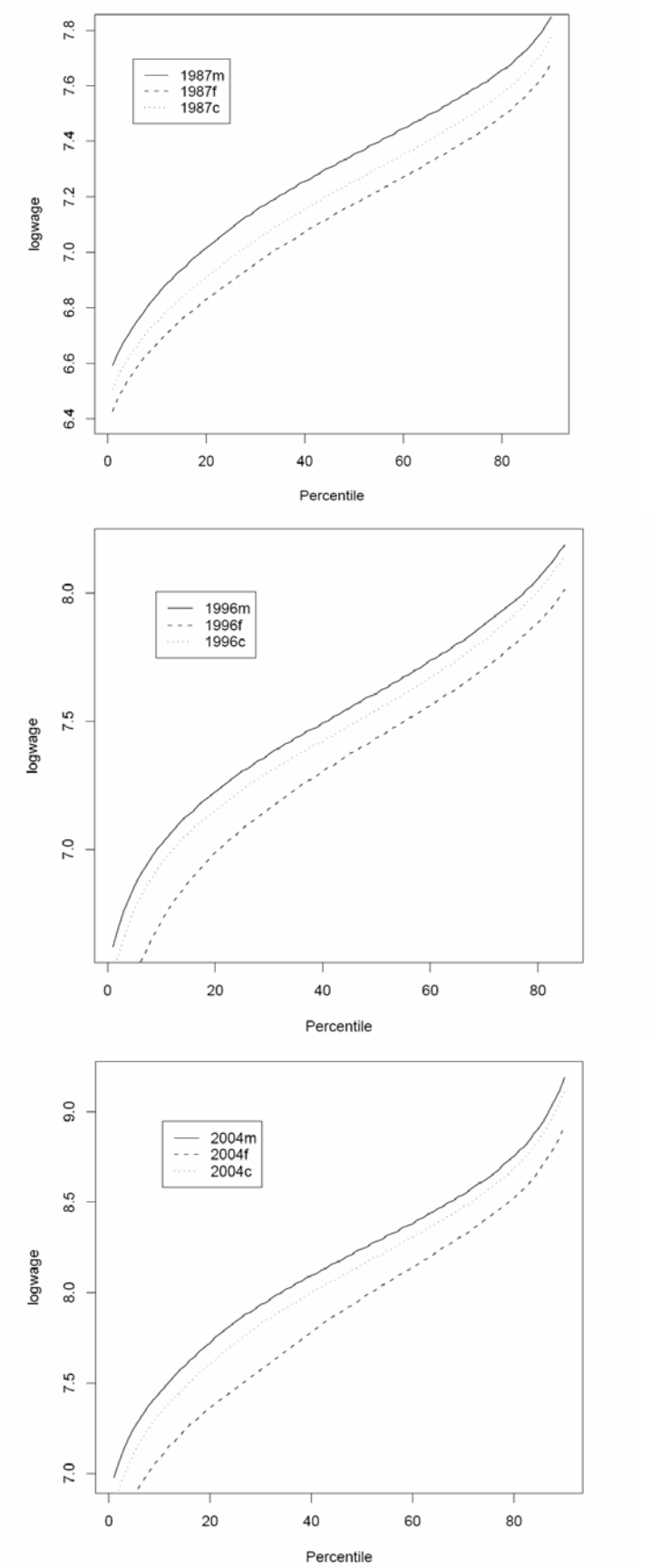
Source: NBSC Urban Household Survey, 1996

Table 4c: Unconditional Quantile Regression/RIF Projection Estimates for Male and Female Separately, 2004

2004	RIF Estimates-Male						RIF Estimates-Female					
	10th		50th		90th		10th		50th		90th	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Constant	3.193	*0.127*	6.294	*0.060*	7.370	*0.104*	4.328	*0.131*	5.540	*0.080*	7.010	*0.104*
Age	0.155	*0.006*	0.064	*0.003*	0.040	*0.005*	0.094	*0.007*	0.083	*0.004*	0.048	*0.005*
Age*Age/100	-0.175	*0.007*	-0.065	*0.003*	-0.038	*0.006*	-0.110	*0.008*	-0.097	*0.005*	-0.050	*0.007*
College	0.320	*0.023*	0.303	*0.011*	0.398	*0.019*	0.367	*0.024*	0.466	*0.014*	0.405	*0.019*
High School	0.201	*0.019*	0.110	*0.009*	0.098	*0.016*	0.233	*0.019*	0.186	*0.012*	0.087	*0.015*
Junior high & below	-	-	-	-	-	-	-	-	-	-	-	-
State-owned	0.495	*0.019*	0.170	*0.009*	-0.018	*0.015*	0.316	*0.018*	0.304	*0.011*	0.125	*0.015*
Collective	0.133	*0.035*	-0.102	*0.016*	-0.159	*0.028*	0.182	*0.028*	-0.011	*0.017*	-0.056	*0.022*
Private, foreign, joint venture	-	-	-	-	-	-	-	-	-	-	-	-
Manufacturing	-0.008	*0.027*	-0.173	*0.013*	-0.020	*0.022*	0.053	*0.029*	-0.150	*0.018*	-0.053	*0.023*
Construction	-0.077	*0.042*	-0.147	*0.020*	-0.029	*0.035*	-0.100	*0.057*	-0.171	*0.035*	0.015	*0.045*
Transportation& communication	0.086	*0.030*	0.027	*0.014*	0.139	*0.025*	0.082	*0.037*	0.091	*0.022*	0.136	*0.029*
Wholesale, retail, food &boarding	-0.189	*0.034*	-0.141	*0.016*	-0.033	*0.028*	-0.118	*0.032*	-0.104	*0.019*	0.072	*0.025*
Education, cultural, health care, sports, and social service	-0.238	*0.032*	-0.129	*0.015*	-0.049	*0.026*	-0.231	*0.030*	-0.226	*0.018*	-0.033	*0.024*
Science, research, technical service	-0.016	*0.031*	0.035	*0.015*	0.051	*0.025*	0.017	*0.030*	0.071	*0.018*	0.142	*0.024*
Other personal & private service	0.062	*0.047*	0.114	*0.022*	0.272	*0.038*	0.016	*0.049*	0.131	*0.030*	0.269	*0.039*
Finance, insurance & real estate	0.042	*0.039*	-0.016	*0.018*	0.139	*0.032*	0.022	*0.036*	0.011	*0.022*	0.229	*0.029*
Other industries	0.086	*0.033*	0.065	*0.015*	0.227	*0.027*	0.097	*0.039*	0.061	*0.024*	0.172	*0.031*
Government	-	-	-	-	-	-	-	-	-	-	-	-
Professional & Technical	0.295	*0.024*	0.209	*0.011*	0.238	*0.020*	0.286	*0.027*	0.377	*0.017*	0.257	*0.022*
Managerial	0.296	*0.034*	0.251	*0.016*	0.294	*0.028*	0.328	*0.053*	0.413	*0.033*	0.324	*0.043*
Clerical	0.277	*0.022*	0.136	*0.010*	0.144	*0.018*	0.288	*0.025*	0.273	*0.015*	0.128	*0.020*
Sales	-0.422	*0.045*	-0.147	*0.021*	-0.035	*0.037*	0.008	*0.037*	-0.075	*0.023*	-0.094	*0.029*
Service	-0.318	*0.031*	-0.142	*0.014*	-0.084	*0.025*	-0.018	*0.028*	-0.109	*0.017*	-0.072	*0.022*
Production& other manual workers	-	-	-	-	-	-	-	-	-	-	-	-
East	0.268	*0.016*	0.244	*0.008*	0.546	*0.013*	0.219	*0.017*	0.231	*0.010*	0.439	*0.013*
Central	-	-	-	-	-	-	-	-	-	-	-	-
West	0.010	*0.021*	0.034	*0.010*	0.017	*0.017*	0.016	*0.021*	0.100	*0.013*	0.047	*0.016*

Source: NBSC Urban Household Survey, 2004

Figure 3: Counterfactual Distribution and the Gender Pay Gap Decomposition, 1987-2004



Source: NBSC Urban Household Survey, 1987, 1996, and 2004

Note: "1987c," "1996c," and "2004c" represent counterfactual log earnings that women could have earned had they received the same return to their labor market characteristics as men. "1987m," "1996m," and "2004m" represent male's log earnings. "1987f," "1996f," and "2004f" represent female's log earnings.

Table 5: Decomposition of the Gender Pay Gap at Selected Quantiles, 1987-2004

1987	Mean	10th	20th	30th	40th	50th	60th	70th	80th	90th
Observed Raw Gap	0.179	0.164	0.178	0.191	0.190	0.180	0.176	0.172	0.169	0.162
Explained gap	0.082	0.085	0.099	0.106	0.106	0.099	0.092	0.092	0.085	0.078
Unexplained gap	0.097	0.080	0.079	0.086	0.084	0.081	0.084	0.080	0.084	0.084
1996										
Observed Raw Gap	0.223	0.355	0.262	0.225	0.201	0.177	0.176	0.175	0.168	0.173
Explained gap	0.068	0.090	0.074	0.074	0.074	0.065	0.065	0.065	0.057	0.041
Unexplained gap	0.155	0.265	0.189	0.152	0.128	0.111	0.110	0.110	0.111	0.132
2004										
Observed Raw Gap	0.296	0.368	0.354	0.369	0.342	0.293	0.264	0.236	0.219	0.235
Explained gap	0.106	0.119	0.117	0.117	0.106	0.096	0.085	0.085	0.074	0.074
Unexplained gap	0.190	0.249	0.237	0.252	0.235	0.197	0.179	0.151	0.144	0.160

Source: NBSC Urban Household Survey, 1987, 1996, and 2004

Table 6a: Decomposition of the Gender Pay Gap to Specific Variables at Selected Quantiles, 1987

1987	The Endowment Effect due to different characteristics				The Discrimination Effect due to different returns			
	Mean	10%	50%	90%	Mean	10%	50%	90%
Constant	0.078	0.545	-0.177	-0.113	0.261	-0.932	0.787	0.592
Age	0.101	-0.751	0.392	-0.008	-0.373	2.334	-0.770	-0.069
Age*Age/100	-0.193	0.176	-0.209	0.058	0.462	-0.864	0.455	-0.010
College	0.004	0.002	0.001	0.009	-0.002	-0.001	-0.001	-0.008
High School	-0.003	-0.011	0.001	0.002	-0.010	-0.011	-0.010	-0.007
Junior High & below	-	-	-	-	-	-	-	-
State-owned	0.020	0.084	0.025	-0.015	-0.254	-0.306	-0.214	-0.185
Collective	0.040	0.026	0.033	0.042	-0.085	-0.107	-0.059	-0.055
Private, foreign, joint venture	-	-	-	-	-	-	-	-
Manufacturing	0.010	0.009	0.006	0.023	-0.035	-0.020	-0.038	-0.049
Construction	0.002	0.0003	0.0004	0.005	-0.001	-0.001	0.0004	-0.004
Transportation & communication	0.003	0.0004	0.003	0.008	-0.001	0.0003	0.0003	-0.003
Wholesale, retail, food & boarding	0.004	0.014	0.002	0.001	-0.007	-0.017	-0.003	-0.011
Education, cultural, health care, sports, and social service	0.0004	0.002	0.0004	0.001	0.0004	-0.002	0.001	-0.001
Science, research, technical service	0.003	0.001	0.004	0.003	-0.005	-0.002	-0.008	-0.005
Other personal & private service	0.001	0.001	0.001	0.003	-0.001	-0.002	0.0004	-0.002
Finance, insurance & real estate	0.0003	0.0004	0.0003	0.001	-0.001	-0.001	-0.001	-0.002
Other industries	0.001	0.0004	0.001	0.005	0.003	0.009	0.002	-0.001
Government	-	-	-	-	-	-	-	-
Professional & Technical	0.003	0.002	0.003	0.008	-0.013	-0.006	-0.014	-0.014
Managerial	0.010	0.006	0.011	0.013	-0.003	-0.001	-0.004	-0.005
Clerical	0.001	0.007	-0.001	0.001	-0.017	-0.012	-0.024	-0.012
Sales	0.002	0.002	0.001	0.003	-0.009	-0.008	-0.009	-0.006
Service	0.002	0.002	0.002	0.002	-0.002	0.007	-0.004	-0.004
Production &other manual workers	-	-	-	-	-	-	-	-
East	-0.006	-0.018	-0.009	0.008	-0.009	0.002	-0.003	-0.020
Central	-	-	-	-	-	-	-	-
West	-0.002	-0.010	-0.002	0.002	0.004	0.019	0.009	-0.008

Source: NBSC Urban Household Survey, 1987

Table 6b: Decomposition of the Gender Pay Gap to Specific Variables at Selected Quantiles, 1996

1996	The Endowment Effect due to different characteristics				The Discrimination Effect due to different returns			
	Mean	10%	50%	90%	Mean	10%	50%	90%
Constant	-0.141	0.123	-0.242	-0.224	0.708	0.441	1.012	0.780
Age	0.131	-0.162	0.300	0.134	-0.509	-0.102	-1.309	-0.296
Age*Age/100	-0.150	-0.161	-0.179	-0.073	0.459	0.585	0.757	0.168
College	0.017	0.018	0.012	0.019	0.001	0.001	-0.001	-0.009
High School	-0.009	-0.023	-0.004	-0.002	-0.006	0.021	-0.012	-0.011
Junior High & below	-	-	-	-	-	-	-	-
State-owned	0.124	0.209	0.114	0.058	-0.297	-0.377	-0.221	-0.311
Collective	0.051	0.051	0.043	0.063	-0.052	-0.062	-0.040	-0.060
Private, foreign, joint venture	-	-	-	-	-	-	-	-
Manufacturing	0.009	0.019	0.0004	0.005	-0.019	-0.074	0.011	-0.011
Construction	0.001	-0.001	0.001	0.002	0.0004	-0.005	0.003	0.0004
Transportation & communication	0.007	0.004	0.006	0.010	-0.001	-0.008	0.003	-0.003
Wholesale, retail, food & boarding	0.004	0.012	-0.006	0.003	-0.011	-0.034	0.010	-0.017
Education, cultural, health care, sports, and social service	0.003	0.005	0.0004	0.002	0.001	0.003	0.002	-0.002
Science, research, technical service	0.004	0.011	0.002	0.001	-0.013	-0.027	-0.006	-0.009
Other personal & private service	0.001	0.0004	0.001	0.002	0.0004	-0.002	0.001	0.001
Finance, insurance & real estate	0.0004	-0.001	-0.001	0.0003	0.001	-0.002	0.002	-0.001
Other industries	0.0003	0.002	0.0002	-0.001	0.003	0.005	0.001	0.001
Government	-	-	-	-	-	-	-	-
Professional & Technical	0.0002	-0.011	0.0004	0.002	-0.036	-0.035	-0.034	-0.023
Managerial	0.013	0.020	0.013	0.013	-0.007	-0.007	-0.006	-0.007
Clerical	0.001	-0.001	0.002	-0.003	-0.031	-0.024	-0.029	-0.021
Sales	0.008	0.012	0.007	0.006	-0.017	-0.032	-0.012	-0.010
Service	-0.001	-0.003	-0.002	-0.001	-0.003	0.001	-0.001	-0.003
Production &other manual workers	-	-	-	-	-	-	-	-
East	-0.004	-0.032	-0.002	0.026	-0.007	0.011	-0.008	-0.023
Central	-	-	-	-	-	-	-	-
West	0.0003	-0.007	0.002	0.001	-0.010	-0.008	-0.011	0.002

Source: NBSC Urban Household Survey, 1996

Table 6c: Decomposition of the Gender Pay Gap to Specific Variables at Selected Quantiles, 2004

2004	The Endowment Effect due to different characteristics				The Discrimination Effect due to different returns			
	Mean	10%	50%	90%	Mean	10%	50%	90%
Constant	-0.039	0.424	-0.040	-0.034	0.278	-1.559	0.794	0.395
Age	0.371	-0.184	0.319	0.045	-0.056	3.068	-0.913	-0.248
Age*Age/100	-0.247	-0.068	-0.218	-0.034	0.087	-1.424	0.565	0.139
College	0.008	-0.015	0.013	0.026	-0.019	0.019	-0.047	-0.006
High School	-0.017	-0.046	-0.005	0.002	-0.014	0.016	-0.038	-0.004
Junior High & below	-	-	-	-	-	-	-	-
State-owned	0.014	0.024	0.027	0.012	-0.019	0.137	-0.090	-0.100
Collective	-0.006	-0.018	0.002	0.003	-0.001	0.009	-0.007	-0.006
Private, foreign, joint venture	-	-	-	-	-	-	-	-
Manufacturing	-0.014	-0.010	-0.020	-0.010	0.004	-0.003	0.008	0.016
Construction	-0.003	-0.003	-0.004	-0.001	0.001	0.002	0.002	0.0004
Transportation & communication	0.003	0.004	0.0002	0.007	-0.002	0.001	-0.002	0.001
Wholesale, retail, food & boarding	0.005	0.013	0.001	-0.002	-0.005	-0.012	0.002	-0.014
Education, cultural, health care, sports, and social service	0.007	0.016	0.003	0.001	0.001	-0.007	0.014	-0.001
Science, research, technical service	0.0004	-0.003	-0.002	0.002	-0.008	-0.001	-0.005	-0.018
Other personal & private service	0.0003	0.0002	0.0003	0.001	0.0003	0.002	0.0004	-0.001
Finance, insurance & real estate	-0.001	-0.003	-0.001	-0.003	-0.001	0.004	0.0003	-0.004
Other industries	0.003	0.001	0.001	0.007	0.001	0.001	0.002	0.002
Government	-	-	-	-	-	-	-	-
Professional & Technical	-0.003	0.0003	-0.006	-0.003	-0.020	-0.001	-0.032	-0.004
Managerial	0.013	0.014	0.012	0.014	-0.003	-0.001	-0.004	-0.001
Clerical	0.001	0.004	-0.003	-0.002	-0.023	-0.006	-0.038	0.007
Sales	0.011	0.016	0.006	0.001	-0.017	-0.033	-0.005	0.005
Service	0.011	0.019	0.010	0.006	-0.014	-0.042	-0.003	0.0003
Production &other manual workers	-	-	-	-	-	-	-	-
East	-0.010	-0.034	-0.008	0.033	0.026	0.059	0.016	0.021
Central	-	-	-	-	-	-	-	-
West	-0.001	-0.006	-0.001	0.001	-0.007	0.004	-0.012	-0.007

Source: NBSC Urban Household Survey, 2004

Appendix Table 1a: Pooled Unconditional Quantile Regression/RIF Projection and OLS Estimates, 1987

1987	RIF Estimates						OLS	
	10th		50th		90th			
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Constant	3.172	*0.058*	5.771	*0.035*	7.454	*0.042*	5.516	*0.028*
Age	0.146	*0.003*	0.049	*0.002*	-0.009	*0.002*	0.060	*0.001*
Age*Age/100	-0.165	*0.003*	-0.041	*0.002*	0.026	*0.002*	-0.057	*0.002*
Male	0.093	*0.009*	0.093	*0.006*	0.078	*0.007*	0.093	*0.004*
College	0.043	*0.017*	0.049	*0.011*	0.149	*0.012*	0.067	*0.008*
High School	0.049	*0.010*	0.012	*0.006*	0.043	*0.007*	0.031	*0.005*
Junior high & below	-	-	-	-	-	-	-	-
State-owned	0.375	*0.032*	0.100	*0.020*	-0.096	*0.023*	0.111	*0.016*
Collective	0.167	*0.033*	-0.044	*0.020*	-0.158	*0.024*	-0.030	*0.016*
Private, foreign, joint venture	-	-	-	-	-	-	-	-
Manufacturing	0.027	*0.017*	0.052	*0.010*	0.107	*0.012*	0.055	*0.008*
Construction	0.033	*0.027*	0.059	*0.016*	0.199	*0.019*	0.097	*0.013*
Transportation & communication	0.010	*0.023*	0.065	*0.014*	0.174	*0.016*	0.088	*0.011*
Wholesale, retail, food & boarding	-0.021	*0.020*	-0.014	*0.012*	0.078	*0.015*	0.007	*0.010*
Education, cultural, health care, sports, and social service	-0.019	*0.032*	-0.008	*0.020*	0.061	*0.023*	0.005	*0.016*
Science, research, technical service	0.000	*0.019*	0.003	*0.012*	0.045	*0.014*	0.005	*0.009*
Other personal & private service	0.014	*0.032*	0.082	*0.020*	0.199	*0.023*	0.089	*0.016*
Finance, insurance & real estate	0.079	*0.034*	-0.005	*0.020*	0.130	*0.024*	0.056	*0.016*
Other industries	-0.106	*0.024*	0.024	*0.015*	0.151	*0.017*	0.011	*0.012*
Government	-	-	-	-	-	-	-	-
Professional & Technical	0.085	*0.017*	0.113	*0.010*	0.048	*0.012*	0.092	*0.008*
Managerial	0.064	*0.019*	0.164	*0.011*	0.167	*0.013*	0.135	*0.009*
Clerical	0.097	*0.013*	0.047	*0.008*	0.000	*0.010*	0.042	*0.007*
Sales	-0.004	*0.023*	0.003	*0.014*	-0.005	*0.016*	-0.012	*0.011*
Service	-0.106	*0.021*	-0.018	*0.013*	-0.014	*0.015*	-0.043	*0.010*
Production & other manual workers	-	-	-	-	-	-	-	-
East	0.115	*0.010*	0.104	*0.006*	0.107	*0.007*	0.109	*0.005*
Central	-	-	-	-	-	-	-	-
West	0.020	*0.011*	0.003	*0.007*	0.050	*0.008*	0.024	*0.006*

Source: NBSC Urban Household Survey, 1987

Appendix Table 1b: Pooled Unconditional Quantile Regression/RIF Projection and OLS Estimates, 1996

1996	RIF Estimates						OLS	
	10th		50th		90th			
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Constant	0.511	*0.117*	5.673	*0.045*	7.034	0.072	4.700	0.045
Age	0.263	*0.006*	0.063	*0.002*	0.036	0.004	0.108	0.002
Age*Age/100	-0.313	*0.007*	-0.064	*0.003*	-0.036	*0.005*	-0.121	*0.003*
Male	0.296	*0.017*	0.118	*0.007*	0.122	*0.011*	0.160	*0.007*
College	0.211	*0.029*	0.147	*0.011*	0.180	*0.018*	0.178	*0.011*
High School	0.186	*0.021*	0.071	*0.008*	0.076	*0.013*	0.101	*0.008*
Junior high & below	-	-	-	-	-	-	-	-
State-owned	0.485	*0.036*	0.070	*0.014*	-0.249	*0.022*	0.065	*0.014*
Collective	-0.006	*0.041*	-0.165	*0.016*	-0.394	*0.025*	0.200	*0.016*
Private, foreign, joint venture	-	-	-	-	-	-	-	-
Manufacturing	0.001	*0.030*	0.036	*0.012*	0.108	*0.019*	0.043	*0.012*
Construction	-0.054	*0.054*	0.088	*0.020*	0.207	*0.033*	0.064	*0.021*
Transportation & communication	0.119	*0.043*	0.168	*0.016*	0.362	*0.026*	0.209	*0.016*
Wholesale, retail, food & boarding	-0.066	*0.037*	0.013	*0.014*	0.132	*0.023*	0.022	*0.014*
Education, cultural, health care, sports, and social service	-0.155	*0.048*	0.064	*0.018*	0.231	*0.029*	0.046	*0.018*
Science, research, technical service	0.047	*0.035*	0.087	*0.013*	0.115	*0.022*	0.088	*0.013*
Other personal & private service	-0.019	*0.057*	0.041	*0.022*	0.144	*0.035*	0.057	*0.022*
Finance, insurance & real estate	0.193	*0.059*	0.246	*0.022*	0.349	*0.036*	0.258	*0.023*
Other industries	-0.336	*0.057*	-0.091	*0.022*	-0.004	*0.035*	0.130	*0.022*
Government	-	-	-	-	-	-	-	-
Professional & Technical	0.338	*0.028*	0.115	*0.011*	0.076	*0.018*	0.154	*0.011*
Managerial	0.328	*0.039*	0.206	*0.015*	0.195	*0.024*	0.231	*0.015*
Clerical	0.230	*0.026*	0.049	*0.010*	0.062	*0.016*	0.094	*0.010*
Sales	0.003	*0.043*	-0.035	*0.016*	-0.048	*0.027*	0.029	*0.017*
Service	-0.043	*0.045*	0.023	*0.017*	-0.011	*0.028*	0.010	*0.017*
Production & other manual workers	-	-	-	-	-	-	-	-
East	0.303	*0.019*	0.304	*0.007*	0.473	*0.012*	0.352	*0.007*
Central	-	-	-	-	-	-	-	-
West	0.078	*0.023*	0.039	*0.009*	-0.005	*0.014*	0.046	*0.009*

Source: NBSC Urban Household Survey, 1996

Appendix Table 1c: Pooled Unconditional Quantile Regression/RIF Projection and OLS Estimates, 2004

2004	RIF Estimates						OLS	
	10th		50th		90th			
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Constant	3.615	*0.102*	6.028	*0.046*	7.235	*0.069*	5.655	*0.044*
Age	0.118	*0.005*	0.066	*0.002*	0.039	*0.003*	0.072	*0.002*
Age*Age/100	-0.136	*0.006*	-0.070	*0.003*	-0.038	*0.004*	-0.078	*0.003*
Male	0.276	*0.012*	0.202	*0.006*	0.159	*0.008*	0.199	*0.005*
College	0.402	*0.019*	0.357	*0.008*	0.370	*0.013*	0.379	*0.008*
High School	0.260	*0.016*	0.129	*0.007*	0.083	*0.011*	0.153	*0.007*
Junior high & below	-	-	-	-	-	-	-	-
State-owned	0.465	*0.015*	0.217	*0.007*	0.050	*0.010*	0.275	*0.006*
Collective	0.206	*0.025*	-0.079	*0.011*	-0.083	*0.017*	0.033	*0.011*
Private, foreign, joint venture	-	-	-	-	-	-	-	-
Manufacturing	0.057	*0.022*	-0.184	*0.010*	-0.022	*0.015*	-0.060	*0.010*
Construction	-0.041	*0.038*	-0.146	*0.017*	-0.013	*0.026*	-0.075	*0.016*
Transportation & communication	0.133	*0.026*	0.041	*0.012*	0.152	*0.018*	0.089	*0.011*
Wholesale, retail, food & boarding	-0.101	*0.026*	-0.127	*0.012*	0.029	*0.018*	-0.095	*0.011*
Education, cultural, health care, sports, and social service	-0.225	*0.025*	-0.184	*0.011*	-0.034	*0.017*	-0.152	*0.011*
Science, research, technical service	0.026	*0.024*	0.045	*0.011*	0.103	*0.017*	0.053	*0.010*
Other personal & private service	0.070	*0.039*	0.112	*0.018*	0.222	*0.026*	0.134	*0.017*
Finance, insurance & real estate	0.080	*0.030*	-0.020	*0.014*	0.191	*0.020*	0.071	*0.013*
Other industries	0.127	*0.029*	0.047	*0.013*	0.214	*0.019*	0.115	*0.012*
Government	-	-	-	-	-	-	-	-
Professional & Technical	0.307	*0.021*	0.266	*0.009*	0.238	*0.014*	0.275	*0.009*
Managerial	0.278	*0.032*	0.299	*0.014*	0.313	*0.022*	0.307	*0.014*
Clerical	0.286	*0.018*	0.174	*0.008*	0.132	*0.012*	0.198	*0.008*
Sales	-0.232	*0.032*	-0.123	*0.015*	-0.047	*0.022*	-0.159	*0.014*
Service	-0.224	*0.023*	-0.140	*0.010*	-0.059	*0.015*	-0.140	*0.010*
Production & other manual workers	-	-	-	-	-	-	-	-
East	0.262	*0.013*	0.225	*0.006*	0.485	*0.009*	0.317	*0.006*
Central	-	-	-	-	-	-	-	-
West	0.011	*0.017*	0.053	*0.008*	0.026	*0.011*	0.044	*0.007*

Source: NBSC Urban Household Survey, 2004