

GENDER WAGE GAPS IN POST-REFORM RURAL CHINA

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Abstract. The present paper examines the impact of market reforms on gender earnings gaps in China's rural economy using two cross-sections of data for 1988 and 1995. The results show that the raw gender wage gap was sizeable and predominated by the unexplained part. However, no evidence was found to suggest that the reform policies and market competition led to any measurable increase or decrease in wage discrimination during the period of investigation.

1. INTRODUCTION

In the Mao era, the employment status of women in China rose from one of the lowest in the world to one in which equality between men and women reached a level matched by few developing countries (Croll, 1995). Before the 1950s, women in China suffered from a tradition of Confucian ideology. Subordinate to men and destined to serve others, women had access to few formal employment opportunities and those who did suffered from wage and work standard discrimination. Under Socialism, leaders instituted policies designed to provide equal pay for equal work. Female work participation in urban areas reached more than 90 percent prior to the reforms (Croll, 1995) and their sense of entitlement to their work and equal pay was high (Loscoco and Bose, 1998). Although wage discrepancies still existed in rural areas and the opportunities to work off the farm were limited by policy (Chan et al. 1992), the wage gaps in agricultural jobs were small relative to other countries in the world.

Given the high profile of women's rights in China, it is unsurprising that since the onset of the reforms in the late 1970s, social scientists have followed the evolution of women's work and wages – although the interest has not translated into consensus. Researchers disagree about how the reforms should affect the status of women (Maurer-Fazio and Hughes, 1999). As the state

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retreats from its position of dominance, the leadership should be expected to become less influential and less able and willing to enforce its ideological stance on gender equality. Becker (1971), however, suggests that rising competition in factor and product markets (that have arisen with the reforms – Naughton, 1995) should lessen the scope for employers to discriminate against disadvantaged workers, such as women.

Tests of the 'ideology' versus 'market force' hypothesis have been used to analyse how the reforms have affected gender wage inequality but the results have been controversial. Some authors find that the wage discrimination is less prevalent in more market-orientated enterprises and suggest that market liberalisation will improve women's economic position (Meng, 1998; Liu *et al.*, 2000).¹ In contrast, other researchers present evidence indicating that the reform process has worked to women's disadvantage. Maurer-Fazio and Hughes (1999) find that gender wage gaps were lower in the state sector than non-state sectors. Maurer-Fazio *et al.* (1999) report that the ratio of women's to men's wages in the urban sector declined during 1988–1994. Gustafsson and Li (2000) find that the degree of wage discrimination increased from 1988 to 1995.

In the present paper we examine the impact of market reforms on gender earnings gaps in the Chinese rural economy using two cross-sections of data taken from 230 villages located in eight provinces for 1988 and 1995. We focus on two particular points. First, in the spirit of the work of others, we seek to measure – in this case in the rural sector – the gender wage gap and the extent to which the gap is attributable to wage discrimination against women. Second, and perhaps more importantly, we are interested in whether the wage gap has grown or not during the reform. To examine the change in wage gap we use not only traditional discrimination analysis, we also econometrically test for the statistical significance of the gender wage gap, its rise over time, and seek to measure the impact of competition on the gap.

To meet our objectives the rest of the paper is organised as follows. We first describe our data and variables used in the gender wage gap analysis. Next, we examine the record of wages. The following section then uses several methods to measure the wage gap and assess how the market reforms have affected it. Our main findings are that the raw gender wage gap was sizeable and predominated by the unexplained part (that is the part attributed to discrimination). We also show that the raw wage gap has widened over time but the rise of gender wage inequality was largely attributable to rising wage differentials between industries rather than growing wage discrimination. We do not find evidence that the reform policies and market competition led to any measurable increase or decrease in wage discrimination during the period of investigation.

¹ Dong and Bowles (2000) find a similar result when comparing the gender wage gap between public enterprises and foreign-invested firms (FIF), but they attribute the lower degree of wage discrimination against women in FIF to their discriminatory recruitment practice against older, married women with children rather than to the operation of market forces.

2. DATA AND VARIABLES

Our study primarily relies on a dataset collected in 1996 from a sample of 230 villages in eight provinces.² The fieldwork team included Zhang and Rozelle and fifteen graduate students and research fellows from Chinese and North American educational institutions. The data were collected using a survey instrument in which we asked respondents about village activities in eight key markets in 1988 and in 1995. The two periods were chosen for their comparability; both years had high grain prices and followed several years of rapid economic growth in the rural sector. Enumerators completed the questionnaires during sit-down interviews with village leaders, accountants, and enterprise managers. These respondents also drew on a number of sources of secondary, recorded information.³

The data used in our analysis are mostly from the section of the survey that was designed to study the issues of labour migration (to both local and distant target areas) and are focused on those workers who worked off-farm outside their own villages.⁴ Enumerators recorded information on both those workers who left the

² The sample villages were selected randomly on the basis of a stratified random sampling procedure. The eight provinces (Zhejiang, Shandong, Hubei, Sichuan, Yunnan, Shaanxi, Liaoning, and Hebei) were randomly selected from each of China's traditional geographical regions. Eight counties were selected from each province, two from each quartile of a list of counties arranged in descending order of gross value of industrial output (GVIO). GVIO was used on the basis of the conclusions of Rozelle (1996) that GVIO is one of the best predictors of standard of living and development potential and is often more reliable than net rural per capita income. Two townships, one above the median GVIO and one below were randomly selected from each county. Two villages in each township were selected in the same manner. Data problems in two counties in Yunnan precluded their inclusion in the analyses. Because some villages did not have any off-farm employment, the number of villages used in the wage analysis was around 200.

³ In the case of the employment and wage data, for example, the village leader and the accountant used a worksheet supplied to them by the enumerator and cross-referenced a comprehensive list of households and family members in the village. The village leadership team then went one by one through the list and made notes on the family's off-farm employment activities at the current time (that is 1995). Drawing on a similar list from 1988, leaders conducted a similar exercise for 1988. In the case of employment in the village's own firms of local and non-local workers, the data were cross-checked with the information kept by the enterprise's accountant. The information on the worksheets were then aggregated to the village totals that were the figures entered on the final survey instrument. While rather untraditional, we believe that our data are fairly reliable and reflect the underlying trends in the economy across time and space. It is perhaps unsurprising that estimates based on these data actually come fairly close to figures generated by larger sampling and census efforts. For example, in Rozelle *et al.* (1999) our data predict that the off-farm labour market participation was 21 percent in 1988 and 33 percent in 1995. State statistical bureau figures are 20 and 31 percent, respectively. In a land section of our survey we estimate the proportion of land in private plots to be 6 percent and the proportion in responsibility land to be 80 percent. A State Land Administrative study puts the figures at 5.5 and 79 percent. At the very least in these two cases, our data are reflecting underlying trends across time. We have no reason to suspect wage and employment data to behave any differently.

⁴ In other words, the data we used here do not include local non-agricultural labour, a category that is primarily made up of self-employed individuals. The self-employed are excluded because their earnings are not comparable – the earnings including returns to labour, land, capital, and entrepreneurship. For the 1995 sample, the data used in our analysis cover 27 288 workers in the 230 sample villages.

village for work and those workers who came into the village looking for work. This group of workers was the fastest growing component of the rural labour force, accounting for 50 percent of China's total off-farm labour force in 1988 and 66 percent in 1995 (Rozelle *et al.* 1999). The categories of incoming and outgoing workers are each divided into two sub-groups: migrants and commuters. A migrant (*changqi waichu*) is a person who leaves his/her village for at least 1 month per year for a wage earning job, but retains direct ties to the village by returning during spring festival or annual peak season farm operations at the very least.⁵ Our migrant category specifically excludes commuters who are also employed outside of their village but who live at home. Commuters, referred to in many areas as those who 'leave in the morning and return in the evening' (*zaochu wangui*), are not considered migrants by villagers and leaders so separating the two categories facilitated data collection.

Hence our data consist of four types of labour (henceforth, *labour types* or *labour categories*): in-migrants, out-migrants, in-commuters, and out-commuters. Each of these labour types is then broken down by year, by gender, and by industry. The unit of observation in our study (henceforth, *observation unit* or *labour unit*) is a group of workers in a village who share the common characteristics in terms of gender, labour type, employment sector, and location. For example, one of the observation units in our analysis will be female out-commuters in the textile industry for a given sample village in Zhejiang in 1988. The wage variable used for each observation unit is the average monthly wage in 1988 or 1995.⁶ The wage is deflated by the rural consumer price index for each province with 1988 as base year. The price indices are obtained from *China Statistical Yearbook* (State Statistical Bureau (SSB), 1989–1996). A summary of the wage statistics over gender, employment sectors, and job types is reported in table 1.

In the wage analysis the level of the observed wage is explained by a number of different observable factors. We use dummy variables to control for variations over time, gender, labour types, industries, and locations.⁷ The benchmark observation unit in the respective set of dummies is 1988, male, in-commuters in the service sector in Zhejiang province. Other characteristics of each observation unit – such as the unit's average level of education, age, and the type of enterprise in which workers are employed – are measured by var-

⁵ The survey recorded information only on individuals who moved for employment reasons and therefore ignores migration for marriage and other related reasons. Permanent household moves were tabulated but were not included (and, in fact, were fairly rare).

⁶ The wage information was reported to us in yuan per day or yuan per month, whichever unit was the most common. We switched all wages to yuan per month after asking questions about average working days per month.

⁷ The province dummy is defined based on the location of the village we surveyed. Regrettably, the wage effect of this location variable would be different for those out-migrants who were not employed in their native province than for the other labour categories. The dummy variables that distinguish the incoming from the outgoing workers are introduced as a partial remedy for the lack of information on the destination of out-migrants.

Table 1. A Summary of average wage statistics, 1988 and 1995 (in constant 1988 yuan)

	Total		1988				Total		1995			
			Male		Female				Male		Female	
	Wage (yuan)	%	Wage (yuan)	%	Wage (yuan)	%	Wage (yuan)	%	Wage (yuan)	%	Wage (yuan)	%
Total	230	100	249	100	193	100	220	100	255	100	175	100
Employment sector												
Light industry	229	31	267	16	202	78	212	32	246	15	191	74
Heavy industry	225	7	246	9	148	1	190	4	202	4	162	3
Mining industry	268	3	282	4	180	0.5	185	4	188	5	146	0.5
Construction	244	49	250	62	199	8	256	49	269	65	183	9
Commerce	246	4	233	6	280	0.5	232	5	254	7	144	0.5
Transportation	183	3	254	2	162	7	187	3	315	2	145	8
Services and others	152	3	156	1	144	5	171	3	220	2	131	5
Types of workers												
Out-commuter	218	59	240	54	182	74	209	42	246	41	156	46
Out-migrant	252	34	262	40	224	15	234	44	272	48	188	35
In-commuter	218	3	247	2	188	8	209	5	234	4	171	7
In-migrant	216	4	241	4	165	3	212	9	242	7	177	12

tables that reflect the respective composition of the labour unit. Specifically, the percentage of workers who graduated from high school (*gaozhong*) and the percentage from middle schools (*chuzhong*) in each observation unit are used to control for the group's education. The omitted category for education in our analysis is the percentage of workers whose educational attainment is lower than the level of middle-school graduates. The experience of each observation unit is measured by the proportion of workers under 26 years old and the proportion over 49. These variables are the crude measure of average work experience and physical strength of the labour unit. The omitted category is the group of workers who are 25 years and older and 50 years and younger. Our data also contain the information on the proportion within each observation unit of the workers employed by enterprises belonging to each of four different ownership categories; that is, state-owned enterprises, collective enterprises, private firms, and joint ventures. For ownership type, the omitted category is state-owned enterprises and joint ventures. The average composition of the sample's observation unit in education, age and ownership forms is reported in table 2.

3. RURAL WAGES AND GENDER WAGE GAPS

Our strategy for examining the impact of the reforms on the gender wage gap will be as follows. First, we examine the descriptive trends of rural wages, comparing those of men and women during the reforms by education level, age, sector, and employment type. These figures will give us the raw wage gap (in constant 1988 yuan) between men and women in both 1995 and 1988. Next, we seek to decompose the gap, proceeding by constructing an empirical model of wage determination and using a 'basic' model to carry out several tests. We first use the Oaxaca and Ransom (1994) and Neumark (1988) procedures to

Table 2. The distribution of the labor force over education, age and ownership type in the sample, 1988 and 1995

	<i>The full sample</i>			<i>1988</i>			<i>1995</i>		
	<i>All</i>	<i>Male</i>	<i>Female</i>	<i>All</i>	<i>Male</i>	<i>Female</i>	<i>All</i>	<i>Male</i>	<i>Female</i>
Education									
% High school graduates	8.9	9.7	7.7	8.3	8.2	8.6	9.2	10.6	7.3
% Middle school graduates	60.2	57.3	60.8	58.7	56.3	63.1	60.9	58.0	64.8
Age									
% 25 or younger	47.4	38.5	60.8	47.9	40.8	61.4	47.1	37.1	60.5
% 50 or older	3.7	5.2	1.6	4.1	5.3	1.7	3.5	5.0	1.5
Ownership type									
State-owned enterprise	10.0	10.5	9.1	11.8	11.6	12.3	9.0	9.9	7.8
Collective	32.2	31.5	33.4	35.5	34.3	37.8	30.6	29.9	31.6
Private firm	54.1	55.1	52.5	50.3	52.1	46.9	56.0	56.9	54.9
Other types	3.7	2.9	5.0	2.4	2.0	3.0	4.4	3.3	5.7

examine how much of the wage gap can be explained by human capital and sector-specific characteristics and how much is unexplained. The main assumption of the Oaxaca and Ransom and Neumark procedures is that the unexplained part of the wage gap is thought to be attributable to discrimination. To examine how the market reforms have affected the discrimination part of the wage gap we will examine how the explained and unexplained proportions change over time. Our second test examines if the unexplained wage gap increases over time by a statistically significant margin. If we do not find any statistically significant difference, this does not necessarily mean that there is no increase in discriminatory behaviour due to the breakdown in the gender equality precepts of the Socialist era. It could be that the increased discrimination allowed by the breakdown of ideology was offset by the increased discipline forced on employers by the increased competition that has arisen with the reforms. To test for this effect we include a measure of competition in our empirical specification, examining whether or not there is any measurable impact of competition on the gender wage gap.

3.1. *Trends in rural wages during the reforms*

Somewhat surprisingly, given the rapid growth in rural incomes during most of the reform era, our point estimate of the overall average rural wage fell from 230 yuan per month to 220 yuan between 1988 and 1995 (table 1, columns 1 and 7). The trend appears for most industrial sectors and employment types. The most notable exceptions occur in the wage levels for those engaged in construction, transportation, and services, categories that have experienced rising wages. Wages have fallen for all labour types between 1988 and 1995 (that is for migrants and commuters).

The fall in the real wage between 1988 and 1995, however, was most striking for women in most labour types and industrial sectors (columns 5 and 11), and less so for men (columns 3 and 9). For example, the wage for men in the aggregate rose by 2 percent from 249 yuan in 1988 to 255 in 1995 during the period, driven largely by the rise in wage in construction, commerce, transportation, and services, sectors that employed fully 71 percent of the male workers in the sample. The wage for women, however, fell from 193 to 175, by 9 percent. The wage for women fell sharply in the sectors in which women have high participation rates, including light industry, construction, and transportation.

The relative levels of wages for men and women in 1988 (that is 249 versus 193) and the diverging trends in wages for men and women during the period 1988–1995 mean that the raw gender wage gap that existed in 1988 became larger during the study period. In 1988 the wage for men was 29 percent higher than that for women (or 25 percent when measured as the difference in logs). By 1995 the wage gap had increased to 45.7 percent (or 38 percent in logs). And the wage gap widened or did not narrow for all of the major employment categories for women. For example, the wage gap for light industry, the category that accounts for most of the employment for women, stayed constant; the gaps for the second two most popular categories, construction and

transportation, widened significantly. One of the other key areas in which the wage gap widened was for two main labour types, out-migrants and out-commuters. The wage difference between men and women for long-term out-migrants rose from 31 to 45 percent and that for out-commuters rose from 32 to 57 percent.

The rest of this section concentrates on explaining the raw wage gap. How much can it be explained by differences in human capital traits or the selection of employment category or job type? How much is unexplained, in the methodology of Oaxaca and Ransom and Neumark a sign of wage discrimination? How much of the change is due to these factors? In short, what determines wages in China's reform era and how have the reforms affected the wage gender gap?

3.2. *The determinants of rural wages*

A. *The basic regressions*

Our basic analysis of the determinants of rural wages is carried out by regressing a series of wage observations for the observation or labour units defined in section 2 on a series of explanatory variables. The explanatory factors include the human capital characteristics of the workers (e.g. education and age), an indicator variable for each unit's employment sector (e.g. light industry or heavy industry), the labour category (e.g. migrant or commuter) and ownership type (e.g. private or collective), and a set of provincial and year dummies and geographical control variables.⁸ The industrial sector, ownership forms, labour types, and locational variables are introduced to the wage regressions to control for the productive characteristics that are not captured by the education and age variables, and the factors that may affect wages as a result of labour market imperfections other than wage discrimination. Wages also may vary over employment sectors, ownership types, or provinces if there is significant labour market segmentation. Migrants and commuters may be compensated differently because of the difference in the costs of employment (e.g. in transportation and accommodation) between the two types of workers. Basic wage regressions are run separately for the men, women, and the pooled sample for each of the two sample periods, and the results are used for the wage gap decomposition exercise. Our subsequent statistical analysis builds on the basic regressions to examine the determinants of the differences between the wage for men and women. All *t*-statistics reported in the paper are calculated using heteroskedastic consistent standard errors.

⁸ We also control for unobserved regional geographical and development effects by the indexes of core-periphery zone (CPZ) and city system (CS). Taken from Skinner (1994), the CPZ variable measures the distance of a village from the 'core' metropolis of the macro region and is measured from 1 to 7 with 7 being the most remote. The CS variable is an index of urbanisation for the county that the village belongs to with a value of ranging from 1 to 6 for the most and least urbanised country.

The results of the basic wage equations are reported in table 3. Judging by the sign of the estimates and adjusted R-square statistics, our model performs reasonably well. Comparing the estimates between 1988 and 1995, we notice some interesting changes in the wage structures for rural workers. For example, the education variables have coefficients that display a strengthening of the importance of schooling in wage determination. Other results, while important for explaining changes in the wage gap, are not as intuitive. For example, the wage differentials among age groups narrows between 1988 and 1995. Whatever its cause, however, the fall in the wage gap between the young and middle-age groups is expected to have a positive effect on wage equality between men and women because the composition of female off-farm workers is strongly biased towards the young age group, compared with that of male workers (table 2). Although for most of the employment sectors the wage differentials with respect to the omitted category (i.e. services) within regions were shrinking between 1988 and 1995, the gap between construction and light industry, the sectors that are dominated respectively by men and women, more than doubled. As we show shortly, the rise in wage gap between the two most gender-segregated sectors was an important contributing factor to the rising wage inequality between men and women. Our results also show that wage inequality among provinces was increasing between 1988 and 1995, especially for women; a result that suggests lagging labour market development. The result, however, may be a function of the timing of our survey and normal frictions in labour markets. China's economy was growing at its peak speed in 1995 and the demand for labour was high throughout the country. The wage premiums offered by those fastest growing areas may reflect temporary rises in wages that were eventually competed away, a conjecture that could be tested only with additional data collection and analysis.

B. *Wage decompositions*

In this section we first estimate the gender wage gap and examine the hypothesis that the gender gap for rural wage earners has risen during the reform using the decomposition procedures of wage differentials by Oaxaca and Ransom (1994) and Neumark (1988). The procedures divide the gross gender wage differential into explained and unexplained components. The explained wage gap is the part of the wage differential due to differences of various measurable productive characteristics and other attributes, such as the employment sectors, labour types, ownership form, and locations, between male and female.⁹ The unexplained gap is the part of the differential due to the differences between the coefficients of the male and female wage equations. Because in the absence of discrimination male and female workers would

⁹ In Oaxaca and Ransom (1994) and Neumark (1988), the authors attribute the explained gender wage gap exclusively to different productive characteristics between male and female workers. We explain this part of wage differential by the difference in productive characteristics between men and women as well as the difference in their accessibility to a certain industry, a certain type of firms, or a certain type of job.

Table 3. Wage equations for decomposition of gender wage gap over time (in constant 1988 yuan)

	<i>Dependent variable: log wage</i>					
	<i>All workers</i>	<i>1988 Male workers</i>	<i>Female workers</i>	<i>All workers</i>	<i>1995 Male workers</i>	<i>Female workers</i>
<i>Education, age and location</i>						
% High school graduates	0.18 (1.02)	0.14 (0.65)	0.35 (0.82)	0.44 (3.01)***	0.31 (1.95)**	0.43 (1.54)
% Mid-school graduates	0.11 (0.97)	0.22 (1.67)*	-0.07 (-0.28)	0.17 (2.70)**	0.24 (2.51)**	0.13 (1.56)
% Under age 25	-0.39 (-4.84)***	-0.27 (-2.84)***	-0.45 (-3.01)***	-0.18 (-3.11)***	-0.11 (-1.21)	-0.10 (-1.37)
% Over age 50	-0.004 (-0.01)	-0.018 (-0.06)	-0.40 (-1.13)	0.13 (0.74)	0.03 (0.14)	0.08 (0.36)
CPZ	-0.02 (-1.12)	-0.02 (-1.05)	-0.02 (-0.73)	-0.01 (-0.84)	-0.004 (-0.19)	-0.03 (-1.39)
CS	-0.01 (-0.29)	-0.03 (-0.86)	0.05 (0.59)	-0.05 (-2.04)**	-0.08 (-2.24)**	-0.02 (-0.49)
<i>Provincial dummies</i>						
Sichuan	-0.27 (-3.17)***	-0.27 (2.46)**	-0.27 (-1.95)**	-0.39 (-7.33)***	-0.35 (-4.46)***	-0.47 (-6.35)***
Hubei	-0.21 (-2.44)**	-0.15 (1.52)	-0.28 (-1.43)	-0.53 (-7.03)***	-0.49 (-4.50)***	-0.59 (-5.81)***
Shaanxi	-0.27 (-2.75)***	-0.53 (-4.45)***	-0.87 (-4.54)***	-0.80 (-10.63)***	-0.70 (-7.38)***	-0.91 (-7.82)***
Yunnan	-0.36 (-2.02)**	-0.38 (-2.37)**	-0.36 (-0.62)	-0.50 (-5.47)***	-0.49 (-3.94)***	-0.61 (-4.66)***
Shandong	-0.27 (-2.75)***	-0.35 (-2.97)***	0.04 (0.22)	-0.36 (-4.29)***	-0.34 (-2.70)***	-0.41 (-4.17)***
Hebei	-0.08 (-0.56)	-0.07 (-0.43)	-0.15 (-0.55)	-0.21 (-2.07)**	-0.01 (-0.04)	-0.49 (-3.47)***
Liaoning	-0.06 (-0.41)	-0.15 (-0.76)	0.004 (0.02)	-0.01 (-0.13)	0.11 (0.66)	-0.22 (-1.82)*
<i>Employment sector</i>						
Light industry	0.32 (1.80)*	0.40 (1.67)*	0.44 (2.20)**	-0.05 (-0.03)	0.03 (0.09)	-0.02 (-0.18)
Heavy industry	0.40 (1.77)*	0.45 (1.51)	0.23 (0.57)	0.07 (0.35)	-0.05 (-0.12)	0.19 (0.10)
Mining	0.72 (3.31)***	0.79 (2.89)***	0.42 (1.36)	0.20 (1.10)	0.16 (0.45)	0.004 (0.03)
Construction	0.49 (2.65)***	0.51 (2.09)**	0.43 (1.85)*	0.30 (1.67)*	0.27 (0.73)	0.21 (1.53)
Commerce	0.34 (1.54)	0.40 (1.42)	0.21 (0.59)	0.18 (0.89)	0.27 (0.74)	-0.41 (-1.56)
Transportation	0.16 (0.77)	0.29 (0.94)	0.44 (1.72)*	-0.09 (-0.52)	0.05 (0.13)	-0.08 (-0.63)

Ownership						
Collectives	-0.04 (-0.34)	-0.09 (-0.68)	0.03 (0.16)	-0.01 (-0.15)	-0.07 (-0.71)	0.10 (1.13)
Private firms	0.17 (1.65)*	0.11 (0.90)	0.26 (1.50)	0.07 (1.11)	0.03 (0.40)	0.13 (1.49)
Types of workers						
Out-commuter	-0.07 (-0.67)	-0.03 (-0.24)	-0.13 (0.83)	-0.03 (-0.29)	-0.06 (-0.52)	0.05 (0.63)
Out-migrant	0.10 (0.91)	0.06 (0.41)	0.08 (0.43)	0.24 (3.44)***	0.15 (1.42)	0.34 (3.84)***
In-migrant	-0.09 (-0.71)	-0.09 (-0.54)	-0.11 (-0.57)	0.02 (0.13)	-0.03 (-0.25)	0.07 (0.55)
Constant	5.27 (19.87)***	5.32 z(15.43)***	5.00 (11.92)***	5.51 (25.70)***	5.67 (16.37)***	5.28 (25.17)***
Adjusted R ²	0.27	0.20	0.26	0.26	0.18	0.32
n	369	242	127	714	409	305

T-statistics reported in parentheses are calculated using heteroskedasticity-consistent standard errors. In-commuters, service and other sectors, Zhejiang, and state-owned enterprises and other types of firms are left out from the regressions. , **, *** indicate significance at 10, 5 and 1 percent respectively.

receive identical returns for the same characteristics, the unexplained wage gap can be interpreted as the part of the wage differential due to discrimination (although it also contains other unmeasured factors such as the changes in the quality of those working in the women's labour force etc.). The Oaxaca and Ransom procedure uses either the estimates of the *male* wage equation or the estimates of the *female* wage equation as the reference in the decomposition (table 3, columns 2, 3, 5, and 6), whereas Neumark suggests that the coefficients of the *pooled* male and female wage equation be used as the reference, no-discriminatory wage structure (table 3, columns 1 and 4). To understand the sensitivity of the results of the decomposition exercise to the choice of the reference wage structure, we use all three estimates, the coefficients of the *male*, *female*, and *pooled male and female wage equations*, in the decomposition of the gender wage gap in 1988 and 1995.

Using the wage regressions reported in table 3, the decomposition results are presented in table 4. The results show that the raw gender wage gap in log form (from the predictions of log wages) was sizeable and widening over time, with a value of 0.315 in 1988 and 0.340 in 1995. The unexplained proportion (attributed to discrimination) appears to dominate the wage gap, accounting for more than two-thirds of the raw gap using the Oaxaca and Ransom method and about one-half using the Neumark method for both periods. In comparison, the weight of the unexplained part of the gender wage gap ranges from 28 to 47 percent in the urban sector (Maurer-Fazio and Hughes, 1999) and from 84 to 91 percent for workers in rural industry (Meng, 1998). Our estimates are more in line with the findings by Meng than by Maurer-Fazio and Hughes. One explanation of the greater discrimination that is observed in rural areas is that it is more prevalent because traditional patriarchal values are rooted more deeply in the countryside.

Table 4. Gender wage gap decomposition^a

	1988			1995		
	Total	Explained	Unexplained	Total	Explained	Unexplained
Oaxaca ^b						
Male weight	0.315	0.084	0.232	0.340	0.104	0.236
(%)	100.00	26.67	73.33	100.00	30.59	69.41
Female weight	0.315	0.045	0.270	0.340	0.081	0.259
(%)	100.00	14.28	85.72	100.00	23.82	76.18
Neumark ^c						
Value	0.315	0.157	0.158	0.340	0.174	0.166
(%)	100.00	49.84	50.16	100.00	51.18	48.82
For explained gap:						
Human capital			0.072			0.050
Industrial segregation		0.109			0.146	
The other sources		-0.024			-0.022	

^a The gender wage gap was decomposed using the estimates reported in table 2.

^b The Oaxaca and Ransom decompositions were performed using the estimates of both the male- and female-wage equations as the weight.

^c In the Neumark decompositions, the estimates of the pooled male-female wage equations were used as the weight.

However, the more competitive, less regulated nature of the rural economy makes these urban–rural comparisons puzzling.

While the unexplained portion continued to be the dominant component of the wage gap in 1995, a large part of the *change* in raw wage gap was attributable to the change in productive and other characteristics of workers. Using both the Oaxaca and Ransom and Neumark methods, the differences in the characteristics of male and female workers accounted for most of the rise in the raw gender gap. Using the estimates by the Neumark method we further decompose the explained wage gaps into the portions associated with human capital characteristics (education and age), with industrial sector selection, and with the other characteristics. We find that the wage gap due to education and age differences fell from 0.072 in 1988 to 0.050 in 1995, largely due to the narrowing wage differentials between the young and middle-age groups. In contrast, the gap associated with industrial allocation rose from 0.110 in 1988 to 0.146 in 1995. This result is not surprising given the rising wage differential between the two most gender-segregated sectors (i.e. construction and light industry) indicated by the wage regression results in table 3.

Because most of the *increase* in the wage gap can be explained by differences in productivity or other characteristics of male and female workers, according to the Oaxaca and Ransom and Neumark methods, little or none of the rise in the male–female wage gap is from increased discrimination. The unexplained wage gap increased only marginally, from 0.232 to 0.236 according the Oaxaca and Ransom method with the male wage structure used as the weights (only 20 percent of the increase in the gap) and from 0.158 to 0.166 based on the Neumark method with the pooled wage structure as the weight (or 32 percent; table 5, columns 3 and 6). The unexplained wage differential actually fell from 0.27 to 0.259 when we applied the Oaxaca and Ransom procedure with the female wage structure used as the weights. The unexplained part of the wage gap (or that part that may be explained by discrimination) unambiguously fell *relative* to that part due to productive characteristics with all three weighting schemes. Hence, according to the wage decomposition exercises, the market reforms may have made the wage structure of rural workers more responsive to the productive and other characteristics of individual workers relative to the gender preference of employers, and less subject to discrimination.

C. *Competition, discrimination, and wages in rural China*

In furthering our search for the determinants of the wage gap we modify the specifications of our wage regressions in several ways. First, in table 5 we pool the two cross-sections of observations (that is, we combine the data to include both 1988 and 1995 observations) and add a gender dummy to our pooled wage regressions (that is, we use observations for both male and female workers). Given our log-specification, the coefficient on the gender indicator variable measures the *conditional* wage gap (that is, conditional on the presence of the other explanatory variables in the model). We use year dummies and a competition index (and interactions with the gender dummy) to examine

Table 5. Wage regressions: competition and gender bias, 1988 and 1995.

	<i>Dependent variable: log wage</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.33 (-9.97)***	-0.34 (-5.94)***	-0.23 (-3.44)***	-0.34 (-5.60)***	-0.33 (-5.28)***	-0.21 (-3.31)***
Year and competition variables						
1995	-0.03 (-0.76)	-0.04 (-0.85)	0.27 (0.79)	-0.04 (-0.85)	-0.04 (-0.83)	-0.05 (-1.21)
Female*1995	—	0.03 (0.43)	-0.01 (-0.13)	0.03 (0.41)	0.03 (0.40)	0.003 (0.04)
Competition index	—	—	—	—	0.05 (0.87)	—
Female*compind	—	—	—	0.04 (-0.38)	-0.09 (-0.78)	-0.09 (-0.76)
Education, age and location						
% High school graduates	0.17 (1.43)	0.17 (1.44)	0.18 (1.01)	0.17 (1.46)	0.18 (1.53)	0.30 (2.65)***
% Middle-school graduates	0.10 (1.85)*	0.10 (1.86)*	0.11 (0.91)	0.10 (1.84)*	0.10 (1.89)*	0.15 (2.76)***
graduates						
% Under age 25	-0.15 (-3.39)***	-0.15 (-3.39)***	-0.35 (-4.49)***	-0.15 (-3.42)***	-0.15 (-3.28)***	-0.18 (-3.95)***
% Over age 50	-0.05 (-0.39)	-0.05 (-0.39)	-0.09 (-0.45)	-0.05 (-0.40)	-0.05 (-0.41)	0.01 (0.10)
CPZ	-0.003 (-0.25)	-0.003 (-0.26)	-0.02 (-1.12)	-0.002 (-0.25)	-0.004 (-0.34)	-0.02 (-1.65)*
CS	-0.05 (-2.52)**	-0.049 (-2.51)**	-0.01 (-0.27)	-0.05 (-2.51)**	-0.05 (-2.57)***	-0.03 (-1.77)*
Provincial dummies						
Sichuan	-0.30 (-6.61)***	-0.30 (-6.61)***	-0.27 (-3.20)***	-0.30 (-6.59)***	-0.30 (-6.58)***	-0.36 (-8.16)***
Hubei	-0.35 (-6.00)***	-0.35 (-6.01)***	-0.21 (-2.48)**	-0.35 (-5.99)***	-0.36 (-6.09)***	-0.42 (-7.26)***
Shaanxi	-0.65 (-12.19)***	-0.65 (-12.21)***	-0.61 (-6.25)***	-0.65 (-12.23)***	-0.65 (-12.24)***	-0.72 (-12.61)***
Shandong	-0.30 (-4.64)***	-0.30 (-4.63)***	-0.27 (-2.82)***	-0.30 (-4.55)***	-0.30 (-4.53)***	-0.32 (-5.08)***
Yunnan	-0.45 (-5.81)***	-0.45 (-5.80)***	-0.37 (-2.09)**	-0.44 (-5.75)***	-0.45 (-5.77)***	-0.46 (-5.81)***
Hebei	-0.10 (-1.22)	-0.10 (-1.22)	-0.08 (-0.59)	-0.10 (-1.21)	-0.10 (-1.27)	-0.15 (-1.92)*
Liaoning	0.05 (0.61)	0.05 (0.61)	-0.04 (-0.26)	0.05 (0.64)	0.05 (0.60)	-0.04 (-0.47)

Employment sector						
Light industry	—	—	0.38 (2.12)**	—	—	0.14 (1.08)
Heavy industry	—	—	0.38 (1.67)*	—	—	0.18 (1.08)
Mining	—	—	0.79 (3.13)***	—	—	0.34 (2.18)*
Construction	—	—	0.45 (2.39)**	—	—	0.31 (2.21)*
Commerce	—	—	0.34 (1.52)	—	—	0.21 (1.31)
Transportation	—	—	0.27 (1.27)	—	—	0.07 (0.48)
Ownership types						
Collectives	—	—	-0.04 (-0.37)	—	—	-0.02(-0.29)
Private firms	—	—	0.16 (1.57)	—	—	0.11 (2.03)**
Types of workers						
Out-commuter	—	—	-0.06 (-0.63)	—	—	-0.02 (-0.27)
Out-migrant	—	—	0.08 (0.69)	—	—	0.19 (3.44)***
In-migrant	—	—	-0.11 (-0.85)	—	—	-0.000 (-0.006)
F-statistic on all variables interacted with 1995 year dummy except female dummy		—	1.21	—	—	—
<i>P</i>		—	0.22			
Constant	5.85 (78.40)***	5.86 (77.28)***	5.34 (19.78)***	5.86(77.28)***	5.85(76.91)***	5.85(76.91)***
Adjusted R ²	0.24	0.24	0.29	0.24	0.24	0.29
N	1083	1083	1083	1083	1083	1083

Note: T-statistics reported in parentheses are calculated using heteroskedasticity-consistent standard errors. In-commuters, service and other sectors, Zhejiang, and state-owned enterprises and other types of firms are left out from the regressions. *, ** and *** indicate significance at 10, 5 and 1 percent respectively.

whether or not the wage gap has been affected by the market liberalisation during the reform era. Finally, we examine (in tables 6, 7) how much of the wage differences between men and women are explained by market segmentation (by job type, industrial sector, or ownership).

The estimates from our new specification presented in the first three columns of table 5 demonstrate that the gender wage gap is large but remains unchanged between 1988 and 1995. The coefficient on the female indicator variable (-0.33 ; row 1, column 1) means that holding the human capital, year, and geographical variables constant, the wages of women were 33 percent lower than those of men, and the difference is statistically significant. The low t -statistic on the year dummy variable (row 2, columns 1 and 2), however, implies that the observed fall in wages is due to other factors (e.g. the changing composition of the labour force). The t -statistic on the interaction term between the gender and year dummies also is low, consistent with the findings of the decomposition procedures that the level of wage discrimination remained constant over the time span from 1988 to 1995. Importantly, our results are robust to the inclusion or exclusion of sets of dummy variables measuring the observation unit's employment sector, the ownership of the hiring firm, and the labour category (with the exception of the size of the conditional wage gap, an issue that we return to below).

In the regressions reported in the last three columns of table 5, we add a competition index to our specification to test directly the gender wage effect of market competition.¹⁰ With the competition index constructed in a way such that a lower score means a more competitive sector, the estimates of the coefficients of the competition index and the competition index interacted with the female dummy variable (rows 4 and 5 in columns 4–6) indicate that the degree of competition is negatively correlated with both the wage level and the level of wage discrimination. Although the sign pattern seems consistent with Becker's view that market competition tends to improve labour market outcomes for disadvantaged groups, none of these estimates are statistically significant. Thus, with our crude measure of competition, we are unable to reject the null hypothesis that market competition has no effect on wage discrimination against women. As can be seen from table 5, the inclusion of the competition index does not alter the basic findings from the wage regressions reported in the first three columns so the competition variables were dropped from the remaining regressions.

D. *Market segmentation and wage differences*

The wage regressions reported in table 6 are intended to examine how job segmentation and selection by men and women into certain industries, types of firms, and labour types affect the *conditional* gender wage gap (which continues

¹⁰ The competition index, based on Guo (1998), is constructed by assigning 0 to services and other sectors, 0.1 to light industry, 0.15 to transportation, 0.2 to construction, 0.5 to commerce, 1 to heavy industry, and 1.44 to mining industry. An alternative index that we tried was 0 to services and other sectors, 0.2 to light industry, construction and transportation, 0.5 to commerce, 1 to heavy industry and 1.44 to mining industry. The results of using the alternative competition index are similar to those reported in table 3.

Table 6. Wage regressions: industry, ownership, and job type and gender bias, 1988 and 1995

	Dependent variable: log wage				
	(1)	(2)	(3)	(4)	(5)
Female	-0.28(-4.56)***	-0.34(-5.93)***	-0.31(-5.48)***	-0.27 (-4.49)***	-0.23(-3.98)***
1995	-0.04(-0.86)	-0.05(-1.12)	-0.04(-1.09)	-0.04 (-1.07)	-0.05 (-1.22)
Female*1995	0.04 (0.53)	0.03 (0.37)	0.001(0.02)	0.03 (0.47)	0.01 (0.09)
Education, age and location					
% High school graduates	0.24 (2.03)**	0.19 (1.67)*	0.22 (1.93)*	0.26 (2.22)**	0.29 (2.58)***
% Middle-school graduates	0.14 (2.55)**	0.09 (1.77)*	0.12 (2.31)**	0.14 (2.43)**	0.16 (2.78)***
% Under age 25	-0.13 (-2.87)***	-0.15 (-3.54)***	-0.21 (-4.67)***	-0.13 (-2.92)***	-0.18 (-3.97)***
% Over age 50	-0.01 (-0.06)	-0.04 (-0.41)	-0.03 (-0.22)	-0.01 (-0.06)	0.02 (0.13)
CPZ	-0.003 (-0.27)	-0.02 (-1.55)	-0.01 (-0.71)	-0.02 (-1.56)	-0.02 (-1.65)*
CS	-0.05 (-2.32)**	-0.04 (-1.91)*	-0.05 (-2.38)**	-0.04 (-1.81)*	-0.03 (-1.75)*
Provincial dummies					
Sichuan	-0.32 (-6.88)***	-0.32 (-7.27)***	-0.33 (-7.59)***	-0.35 (-7.56)***	-0.36 (-8.16)***
Hubei	-0.39 (-6.58)***	-0.34 (-5.93)***	-0.40 (-6.82)***	-0.39 (-6.58)***	-0.42 (-7.25)***
Shaanxi	-0.68 (-12.20)***	-0.67 (-12.50)***	-0.69 (-12.71)***	-0.70 (-12.50)***	-0.72 (-12.62)***
Shandong	-0.33 (-5.23)***	-0.28 (-4.17)***	-0.32 (-4.82)***	-0.31 (-4.82)***	-0.32 (-5.09)***
Yunnan	-0.46 (-5.61)***	-0.43 (-5.60)***	-0.48 (-6.47)***	-0.45 (-5.53)***	-0.46 (-5.82)***
Hebei	-0.11 (-1.41)	-0.12 (-1.52)	-0.12 (-1.54)	-0.14 (-1.75)*	-0.15 (-1.91)*
Liaoning	0.02 (0.25)	-0.05 (-0.53)	0.05 (0.55)	-0.07 (-0.84)	-0.04 (-0.50)
Employment sector					
Light industry	0.17 (1.36)	—	—	0.16 (1.22)	0.14 (1.07)
Heavy industry	0.13 (0.82)	—	—	0.14 (0.94)	0.15 (0.98)
Mining	0.35 (2.40)**	—	—	0.36 (2.42)**	0.32 (2.18)**
Construction	0.35 (2.66)***	—	—	0.33 (2.50)**	0.30 (2.19)**
Commerce	0.22 (1.45)	—	—	0.23 (1.51)	0.19 (1.26)
Transportation	0.16 (1.24)	—	—	0.14 (1.04)	0.06 (0.44)

Table 6. *Continued*

	<i>Dependent variable: log wage</i>				
	(1)	(2)	(3)	(4)	(5)
Ownership type					
Collectives	—	-0.07 (-1.16)	—	-0.07 (-1.22)	-0.02 (-0.35)
Private firms	—	0.11 (2.12)**	—	0.10 (1.90)*	0.11 (2.00)**
Types of workers					
Out-commuter	—	—	0.001 (0.02)	—	-0.02 (-0.31)
Out-migrant	—	—	0.23 (4.20)***	—	0.19 (3.37)***
In-migrant	—	—	0.01 (0.08)	—	-0.004 (-0.05)
Constant	5.56 (36.87)***	5.84(61.19)***	5.80 (68.75)***	5.57 (33.24)***	5.52 (33.02)***
Adjusted R ²	0.26	0.25	0.27	0.27	0.29
<i>n</i>	1083	1083	1083	1083	1083

T-statistics reported in parentheses are calculated using heteroskedasticity-consistent standard errors. In-commuters, service and other sectors, Zhejiang ,and state-owned enterprises and other types of firms are left out from the regressions. *, ** and *** indicate significance at 10,5 and 1 percent respectively.

Table 7. Wage regressions: gender bias between industries, ownership types, and job categories, 1988 and 1995

	Dependent variable: log wage				
	(1)	(2)	(3)	(4)	(5)
Female	-0.09 (-0.35)	-0.44 (-4.05)***	-0.27 (-2.65)***	-0.20 (-0.74)	-0.26 (-0.97)
1995	-0.04 (-0.85)	-0.05 (-1.14)	-0.04 (-1.01)	-0.05 (-1.08)	-0.05 (-1.24)
Female*1995	0.03 (0.37)	0.03 (0.41)	-0.01 (-0.11)	0.03 (0.37)	-0.01 (-0.13)
Education, age and location					
% High school graduates	0.27 (2.32)**	0.20 (1.67)*	0.22 (1.94)*	0.29 (2.51)**	0.32 (2.89)***
% Middle school graduates	0.15 (2.62)***	0.10 (1.77)*	0.12 (2.29)**	0.14 (2.51)**	0.17 (2.97)***
% Under age 25	-0.14 (-3.03)***	-0.16 (-3.49)***	-0.22 (-4.67)***	-0.14 (-3.05)***	-0.18 (-3.96)***
% Over age 50	-0.01 (-0.49)	-0.05 (-0.37)	-0.03 (-0.21)	-0.01 (-0.04)	0.02 (0.14)
CPZ	-0.003 (-0.27)	-0.02 (-1.57)	-0.01 (-0.22)	-0.02 (-1.52)	-0.02 (-1.62)
CS	-0.05 (-2.45)**	-0.04 (-1.98)**	-0.05 (-2.39)**	-0.04 (-1.99)**	-0.04 (-1.86)*
Provincial dummies					
Sichuan	-0.32 (-6.73)***	-0.32 (-7.16)***	-0.33 (-7.51)***	-0.34 (-7.32)***	-0.36 (-7.86)***
Hubei	-0.39 (-6.64)***	-0.34 (-5.81)***	-0.40 (-6.75)***	-0.38 (-6.51)***	-0.42 (-7.22)***
Shaanxi	-0.68 (-12.16)***	-0.67 (-12.55)***	-0.69 (-12.69)***	-0.70 (-12.47)***	-0.72 (-12.57)***
Shandong	-0.34 (-5.17)***	-0.28 (-4.14)***	-0.32 (-4.83)***	-0.31 (-4.67)***	-0.32 (-4.97)***
Yunnan	-0.46 (-5.70)***	-0.44 (-5.62)***	-0.48 (-6.40)***	-0.46 (-5.61)***	-0.46 (-5.82)***
Hebei	-0.12 (-1.49)	-0.12 (-1.52)	-0.12 (-1.54)	-0.15 (-1.81)*	-0.15 (-1.92)*
Liaoning	0.03 (0.36)	-0.04 (-0.51)	0.05 (0.55)	-0.06 (-0.68)	-0.03 (-0.37)
Employment sector					
Light industry	0.22 (0.99)	—	—	0.20 (0.37)	0.17 (0.76)
Heavy industry	0.21 (0.87)	—	—	0.21 (0.91)	0.19 (0.78)
Mining	0.45 (1.96)**	—	—	0.44 (1.90)*	0.39 (1.66)*
Construction	0.45 (2.04)**	—	—	0.42 (1.87)*	0.37 (1.58)
Commerce	0.39 (1.71)*	—	—	0.38 (1.63)	0.34 (1.38)
Transportation	0.25 (1.05)	—	—	0.22 (0.89)	0.15 (0.58)
Ownership type					
Collectives	—	-0.14 (-1.76)*	—	-0.12 (-1.59)	-0.08 (-0.97)
Private firms	—	0.07 (0.99)	—	0.06 (0.80)	0.08 (1.05)

Table 7. Continued

	<i>Dependent Variable: Log Wage</i>				
	(1)	(2)	(3)	(4)	(5)
Types of workers					
Out-commuter	—	—	0.03 (0.41)	—	-0.04 (-0.42)
Out-migrant	—	—	0.24 (3.35)***	—	0.14 (1.65)*
In-migrant	—	—	0.002 (0.02)	—	-0.01 (-0.13)
Gender bias by sector					
Female*light industry	-0.13 (-0.50)	—	—	-0.12 (-0.45)	-0.07 (-0.30)
Female*heavy industry	-0.17 (-0.58)	—	—	-0.14 (-0.47)	-0.04 (-0.14)
Female*mining industry	-0.23 (-0.84)	—	—	-0.22 (-0.82)	-0.14 (-0.55)
Female*construction	-0.26 (-1.01)	—	—	-0.22 (-0.85)	-0.13 (-0.49)
Female*commerce	-0.57 (-1.76)*	—	—	-0.54 (-1.68)*	-0.49 (-1.54)
Female*transportation	-0.20 (-0.79)	—	—	-0.17 (-0.60)	-0.16 (-0.55)
Gender bias by ownership					
Female*collective	—	0.16 (1.42)	—	0.15 (1.28)	0.15 (1.29)
Female*private firms	—	0.09 (0.88)	—	0.11 (1.00)	0.07 (0.67)
Gender bias by types of workers					
Female*out-commuter	—	—	-0.07 (-0.72)	—	0.03 (0.29)
Female*out-migrant	—	—	-0.03 (-0.34)	—	0.13 (1.18)
Female*In-migrant	—	—	0.01 (0.07)	—	0.03 (0.26)
Constant	5.48 (24.53)***	5.89 (55.37)***	5.78 (61.76)***	5.54 (22.61)***	5.52 (23.14)***
Adjusted R ²	0.26	0.25	0.27	0.27	0.29
<i>n</i>	1083	1083	1083	1083	1083

Note: T-statistics reported in parentheses are calculated using heteroskedasticity-consistent standard errors. In-commuters, service and other sectors, Zhejiang, and state-owned enterprises and other types of firms are left out from the regressions. *, ** and *** indicate significance at 10, 5 and 1 percent respectively.

to be measured by the coefficient on the gender dummy variable). We add industry, ownership, and labour type dummies first separately and then jointly to our basic pooled wage equation (that is, the one in table 5, column 2). Similar to the findings from the decomposition procedures, the results reported in table 6 show that job segmentation and selection by gender explains a significant part of the *conditional* gender wage gap, but that the level of wage discrimination against women remained constant between the two years studied. When compared with the basic model (table 5, column 2) that shows a conditional gender wage gap of 34 percent, adding a set of industrial sector dummies reduces the coefficient of the female indicator variable to 0.28, implying that 18 percent of the gap arises from the fact that men are disproportionately employed in industries that pay higher wages. As shown in table 1, 66–70 percent of male workers in our sample work in the construction and mining industries but only 8–9 percent of women work in construction and mining; sectors that, everything else held constant, offer significantly higher wages (table 6, columns 1, 4 and 5).

In contrast, when adding firm ownership type dummies (table 6, column 2) and job category dummies (column 3), the conditional gap decreases little or none. Market segmentation by ownership possibly could play a role in the wage gap because private firms do offer higher wages, *ceteris paribus*. However, because the distribution of male rural workers over collective, private, and state-owned firms (33, 55, and 13 percent) versus that of women (33, 52, and 14 percent) is nearly the same (table 2), accounting for ownership does not help explain the wage gap. The effect of controlling for migration matters; the overall wage rate reduces the conditional wage gap by 3 percent (from 34 to 31 percent; column 3). Controlling for both industrial structure and job category produces the lowest conditional wage gap (23 percent; table 7, column 5).

So far we have assumed that the gender wage gap is invariant over industrial sectors, ownership types, and job categories. In the wage regressions reported in table 7 we relax this assumption to see whether there is a systematic association between the level of wage discrimination against women and the degree of competitiveness in a certain industrial sector, a certain type of firm, or for a certain labour type. The estimates in table 7, however, fail to establish such an association; almost all of the interaction terms between the sets of indicator variables and the gender dummy are insignificant. Interestingly, even in economies that are dominated by competitive industries (such as light industry), by private firms, and that have well-developed labour markets (like those with large out- and in-migrant labour forces), the wage gaps between male and female workers are not any larger or smaller. More significantly, when these effects are accounted for, the *change* of the aggregate female wage gap over time is still not significantly different from zero.

4. CONCLUSIONS

In the present paper we estimated gender wage gaps in the rural economy between 1988 and 1995 and found that women received wages substantially

lower than those received by their male counterparts. One interpretation is that wage discrimination against women is pervasive in the rural sector where the traditional Confucian ideology has deep roots. We also examined the impact of market liberalisation on the wage discrimination using three methods. First, using several measures we estimated whether or not the wage gap attributed to discrimination had grown between 1988 and 1995. We found that the size of the unexplained part of the gender wage gap was stable over time, but its relative importance fell. Next, to see if there were possible offsetting effects from rising discrimination and competition from emerging markets, we tested the effect of competition by introducing a competition index and a gender–competition interaction variable to the wage regressions. With our admittedly crude measure of competition we could not detect if rising competition during the reform era affected the wage gap. Finally, we tried to determine if there was any difference in wage gaps between the more and the less market-orientated sectors, ownership forms, or labour categories. Once again, however, we failed to find a systematic association between the level of wage discrimination and the degree of market orientation by industry, ownership, or job type. In short, the results of our investigation failed to lend support for the prediction that market liberalisation will work to women's disadvantage as the socialist ideology of gender equality fades away in the reform process or Becker's view that market competition tends to improve labour market outcomes for disadvantaged groups.

Our finding that women have not suffered any measurable increase in wage discrimination, however, needs to be qualified. Our sample covers the timespan between 1988 and 1995. The first year of the period of investigation is already 10 years into the reforms. Because studies (Brainerd, 1998) suggest that the onset of discrimination can happen rather quickly (e.g. in less than 5 years in some East European transitional economies), our finding of no change in discrimination between 1988 and 1995 does not rule out the possibility that there had been rising discrimination between the onset of the reforms and 1988, the beginning period of our investigation.

However, our finding of no change in wage discrimination in the rural economy is at odds with the results of Maurer-Fazio and Hughes (1999) who find evidence of increased discrimination in the urban economy from a sample in the early 1990s. One explanation of why our results differ from those of studies done in the urban economy is that they are due to the institutional nature of the rural economy in the reform era and how it has evolved since the late 1970s. Whereas the urban economy had extremely high rates of female participation on the eve of the reforms and the state's influence was more comprehensive, the rural economy was more decentralised, less influenced by party policies, and had lower rates of female participation in the formal employment sector (that is outside of working in communal agriculture). From this point of view it may be unsurprising that the status of women in the urban sector fell further because they had received more protection from the government under the Socialist rubric of gender equality. Moreover, our cautionary remarks about the limited nature of the study period need to be

considered. By the late 1980s the rural reforms had already created relatively competitive markets. The marginal increase in competition between 1988 and 1995 may be such that the rise is insufficient to affect the size of the gender wage gap. But, even though there is no increase in discrimination, the large unexplained gender gap may mean that there is still a large amount of room for policy to combat the inequality between men and women in the post-reform rural economy.

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