The Effects of Market Liberalization on the Relative Earnings of Chinese Women

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Abstract

In this paper we first explore the effects of differences in labor market institutions and the degree of market liberalization on the size and composition of gender wages gaps in China's urban labor markets. We use enterprise-ownership type, enterprise age, and workers' methods of finding employment as proxies for the extent of market liberalization. We find both the size of the wage gaps and the proportion of the gap left unexplained by differences in productive characteristics largest in the most liberalized (joint venture) sector, and smallest in the least liberalized (state) sector. We next investigate the effects of differences in wage structure on the gender wage gaps. We find that differences in wage structure, in general, and the degree of wage dispersion, in particular, are extremely important in accounting for the larger wage gaps in the joint venture and collective sectors relative to the state-owned sector.

Introduction[1]

At the macro-economic level, the Chinese economic reform program produced rapid and sustained growth and improvements in material welfare. In the period from the late 1970s to the early 1990s, per capita GDP more than quadrupled (ZTN 2000). However, the benefits of reform were distributed unevenly. It is well known that income and welfare rose more quickly in the eastern seaboard provinces than in the western and interior ones (Chen and Fleisher 1996, Fleisher and Chen 1997, Gustafsson and Li 1998, Lee 2000). Less well known is the impact of the reforms on the differences between men's and women's earnings.

As Becker (1971) first pointed out, when workers can choose amongst employers, firms that discriminate and pay disfavored groups less than their marginal revenue product and favored groups more than their marginal revenue product will suffer a cost disadvantage. The cost disadvantage arises not only from overpaying favored groups but also from the displacement of higher skilled, discriminated against workers by less skilled but favored workers. All else equal, managers whose compensation is linked to the profitability of the firm are less likely to discriminate than those who are unaffected by the higher cost structure.

China's economic reforms increased managers' ability to discriminate by decentralizing wage setting to firms. At the same time, the reforms increased managers' stake in the cost effectiveness of the firm and bequeathed workers a new-found freedom

to change jobs and choose employers. If managers are generally more prone to discriminate than were the pre-reform centralized wage scales, then the reforms could set opposing forces in motion. The question thus arises as to whether the more liberalized sectors have larger or smaller gender pay gaps than less liberalized sectors. We investigate this question in the present study, using differences in institutional structure (enterprise ownership, age of the enterprise, and method of job-seeking) as proxies for the degree to which wage and employment decisions are influenced by market forces.

Khan, pondering the effects of a decade of reform on the condition of women in urban China, writes, "Women clearly shared in the benefits of reforms, although there is little solid evidence to determine if they benefited proportionately more or less than men did…" (Khan, 1996, Section VI). More recent works suggest increasing disparities between men's and women's incomes in China (Maurer-Fazio et al.1999, Li and Gustafsson 1999, Chen Gang et al. 1999, Rawski 2002).

Brainerd (1998) finds that wage inequality in Russia nearly doubled in the first two to three years of wage and price liberalization and that while women's mean earnings were 79.5 of men's in 1991 they fell to only 63.5 percent of men's by 1994. In a comparison of the gender wage gaps among the transition economies of central and eastern European, Brainerd (1997) finds the gender wage gaps to be larger, in both absolute and relative terms, in Russia and the Ukraine, and smaller in Poland, Hungary, Slovenia, Bulgaria and the Czech and Slovak Republics. She argues that the cross-country differences in the gender wage gaps are primarily due to differences in the degree of wage-setting decentralization and not due to differences in macroeconomic performance across countries.

The positive association of decentralization in wage setting with increased gender wage gaps does not necessarily imply an increase in discrimination. Other authors have examined the importance of differences in wage structures across industries, firms, and nations in explaining gross wage gaps between skill, racial, or gender groups structure.[2] For example, Blau and Kahn (1996) show that the persistently high (by international standards) gender wage gap in the United States is due in large part to a substantial and increasing level of overall wage inequality in the U.S. Bronars and Famulari (1997) find that 35 to 40 percent of between-firm wage differentials are due to differences in the wage structures of the firms with the remainder due to between-firm differences in employee characteristics. They also report that within-firm gender wage differentials are smaller than across-firm ones and that much of the male-female gap for less educated and less experienced workers is due to the crowding of women into low-paying firms. These results suggest that differences in wage structure can be an important source of gender wage differentials and should not be ignored when analyzing differences in gender wage gaps.

Although the cross-section nature of our data[3] prohibits us from directly examining the changes in women's earnings relative to men's over the course of the reforms, we are able to use sectoral variation in the degree of market liberalization to

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[2]   See, for example, Juhn, et al. (1991), Bronars and Famulari, (1997), and Abowd et al. (1999).

[3]   The data we employ in our empirical analysis was collected in 1992--a period well into the reform process.

infer the affects of the reforms.[4] We also exploit sectoral variation in wage dispersion to explore how much of the differences in the wage gaps is due to differences in wage structures. We focus on how institutional differences affect the relative incomes of working women and men in China's urban labor markets. We first measure the extent of gender wage differentials in a large, micro-level data set. Next, employing techniques developed by Blinder (1973),Oaxaca (1973), and Neumark (1988), we decompose the gross wage differentials into components attributable to differences in productive characteristics (education and work experience) and differences in labor-market treatment. We then explore how differences in the degree of market liberalization affect these components by employing measures of enterprise ownership, enterprise age, and workers' methods of finding employment as proxies for market liberalization. Finally, we use the techniques developed by Juhn et al. (1991) to ascertain the extent to which sectoral differences in wage dispersion contribute to the differences in gender wage gaps.

Urban China's Changing Labor Market Institutions

China's pre-reform labor system was the antithesis of a free market system. The state claimed ownership of labor services and bureaucratically assigned workers to enterprises for life. Workers' preferences concerning occupation or location mattered little. For the enterprises' part, managers had to accept any and all workers allocated to them. Enterprises could not recruit particularly well-qualified workers, nor could they

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[4]   Liu et al (2000) employ a similar strategy and compute and decompose gender wage gaps for private sector and public sector firms in Shanghai and Jinan. They find the size of gap in wages left unexplained after taking into account differences in productive characteristics larger in the private sector than in the state sector. However, they find the share of this unexplained gap as a fraction of the total wage gap smaller in the private sector than in the state sector

fire unproductive workers. The wage system was not designed to promote productivity and motivate workers but rather to provide egalitarian incomes. In this goal, the Chinese wage system enjoyed a modicum of success. Chinese workers, men and women, received nearly equal pay regardless of their efforts, productivity, or performance.

When reforms were initiated in the late-1970's, concerns about open unemployment and social instability caused the Chinese leadership to embark on a slow, evolutionary transition to a market economy. The demands for more flexible and efficient labor markets brought by a new generation of profit-motivated managers were initially resisted, experimented with, and introduced only gradually. Yet even these initial, tentative steps toward market rationalization rapidly yielded profound changes in China's labor system. Workers gained the freedom to choose where and for whom they would work. A vibrant private sector emerged in which managers had the right to determine the size and composition of their work force. Most importantly for the issues being investigated in this paper; there was a strong movement towards decentralized, productivity-determined remuneration. Wage variation across workers and sectors increased relative to the pre-reform period (Maurer-Fazio et al. 1999). Chinese workers experienced considerable change in their work environment.

Women's Relative Status and Pay

Chinese women's work experience, status, and pay are affected by a complex interplay of newly-introduced market forces, a legacy of centralized work place institutions, traditional beliefs that women are subordinate to men, and a socialist

ideology of gender equality. Confucian thought and beliefs continue to exert influence on

Chinese society[5] and may contribute to gender discrimination in the work place.

Under socialism, the traditional low status of women in Chinese society was to

become an artifact of the past. The Chinese constitution guaranteed women equal rights

with men in all spheres of life and assured equal pay for equal work.[6] In the first decades

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[5]   Confucian doctrine takes a very hierarchical view of society. Key human relationships link superiors to subordinates with sons subordinate to fathers, subjects subordinate to rulers, and wives subordinate to husbands. In the first century C.E., the famous female historian and scholar, Ban Zhao, consolidated existing attitudes towards women into a set of prescriptive norms for women's lives, *Nujie,* (Precepts for Women). Ban Zhao unequivocally stated the position of women as lowly and weak and destined to serve others. The effects of her writing on attitudes about women's roles in society intensified in the Neo-Confucianism period. (Lee, 1994 pp. 4-24). Women's place and status were determined by these Confucian cosmological beliefs (Croll, 1995 p.12-13).

[6] Women were paid substantially less than men in China's pre-socialist society. Rawski (1989), in his argument about economic growth in prewar China, claims that China's largest prewar industry was cotton textiles and that Jiangsu Province was home to the largest concentration of textile mills. Many of the mills' employees were young women recruited from the surrounding rural areas. Rawski establishes the close relationship of rural wages to textile mills' wages. The occupational segregation by gender in the mills makes it difficult to sort out the effects of skill, experience and gender in explaining the differences in pay. However, Rawski presents data on annual wages paid to male and female farm workers in forty-four of Jiangsu's counties for the period between 1923 and 1932 in which women's earnings vary from 61 to 65 percent of men's. (Calculated from Table 6.7 (Rawski 1989, p.306)).

Arnold's 1926 Commercial and Industrial Handbook devotes 372 pages to reports on economic activities in China's consular districts. Most of these reports contain a section on labor conditions that yields information on wages. In the cases where it is possible to compare male and female wages, for similar but broadly defined occupations, the male wage premium varies from 0 to 400 percent.

There are also a number of historical accounts and case studies of particular industries and mills that give us anecdotal information on women's pay in pre-socialist China. For example, Honig (1986, pp.41-56) paints a very detailed picture of women's work lives in the Shanghai cotton mills in the first half of the 20th Century. Women and men tended to do different jobs although the jobs considered women's work or men's work varied from mill to mill. Honig reports that the cotton mills responded to the depression in the 1930s by doing what they could to reduce expenses. There was a corresponding change in the division of labor as women were hired to do some of the tasks formerly done by men. Honig gives an example of the Shen Xin Number Nine Mill

of the revolution, women's work was promoted with the slogan that women hold up half of heaven, a traditionally male realm (Croll, 1995. p.99). Work was symbolically important in both liberating and providing equality for women (Croll, 1995 p. 117).

Chinese women appear to have internalized the ideology and rhetoric that participation in paid labor would dramatically improved their status. Women exhibited a strong sense of entitlement to a good job (Loscocco and Bose, 1998 p.106). Female labor force participation on the eve of reform has been estimated at 90 percent. Women's labor force attachment was extremely strong (Croll, 1997. p.6).[7]

Despite the rhetoric of equality, in rural areas gender wage differentials persisted. Accounts of urban young people sent to rural areas make clear that women on the communes were paid less than men even when carrying out the same tasks (Chan et al. pp.92-93, Zhai pp.170-171). However, the centrally-administered wage grade system in effect in urban areas made such overt discrimination less likely. On the eve of the reforms, China's urban gender wage gap was small in international perspective.[8]

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where women spinners' wages fell from 0.432 yuan per day in 1931 to 0.327 per day in 1935 while at the same time, the wages of male packers rose from 0.557 to 0.689 yuan per day.

[7]   Contrast the labor force participation of Chinese women with that of their U.S. counterparts. As recently as 1970, women's labor force participation in the U.S. stood at 48 percent for white women, and 59 percent for black women. Even by 1995, the labor force participation rate had risen to 72 percent for white women and 70 percent for black women. Only American women with at least some postgraduate education had participation rates approaching or exceeding the 90 percent witnessed in China (Blau, Ferber, and Winkler, page 117, Table 4.5.).

[8]   Meng and Kidd (p.9) report, based on a large sample of workers in state-owned enterprises, that in 1981 (the eve of reforms in industry) women earned 14 percent less than men on average.

With the advent of economic reform, wage plans were decentralized to local authorities, allowing employers to diverge from national wage scales. Coverage of the wage grade system narrowed, as private sector as well as township and village enterprises were exempted from it. Bonuses, paid out of retained earnings, became an important component of workers' total monetary compensation. Workers' earnings became linked to their own productivity and managers' compensation to the profitability of their enterprises. The decentralization of remuneration decisions allowed managers much more leeway in rewarding productivity.

The reduction in government involvement in the labor market meant that managers had more freedom to engage in discriminatory practices. Thus, the subordination of and discrimination against women in Chinese society could reemerge, reducing women's share of the gains to economic reform. Meng (2000) argues that this did not occur. She contends that the programs promoting gender equality in China during the socialist period were effective in changing social attitudes towards women, as evidenced by wage gaps up to 1995 that remained small in both international perspective and in comparison to wage gaps in Taiwan, an area sharing a common cultural heritage.

In contrast to Meng, Maurer-Fazio et al.(1999) and Li and Gustafsson (1999) report wage gaps for urban workers in China that increase over the periods of their respective studies. Both of these papers suggest that wage gaps are largest in the sectors having the most market influence. There is no doubt that over the course of the reforms managers gained a much greater stake in the profitability of their enterprises. This implies, ceteris paribus, less likelihood of engaging in costly discrimination. Does the increase in size of the wage gap thus imply that managers are increasingly engaging their

tastes for discrimination? Obviously there are other factors in play in the complex and changing milieu of the urban work place in China.

There is little doubt that the Chinese labor market has become more varied, with some firms clinging to the employment practices of the socialist period, while others hire, fire and compensate workers in response to market forces and the desire to maximize profit. With such diversity in the labor market, it is possible that systematic differences in wage structure may have emerged that could affect the size of the wage gap. Differences in the wage structure across different types of Chinese firms could influence the relative size of the wage gap in the two sets of firms. Suppose, for example, women have less education on average compared to men, and that the difference is the same between state-owned and joint venture enterprises. If the return to education were higher in joint venture firms than in state-owned firms, we would observe a larger gender wage gap in the joint venture firms. Thus, competition for educated workers by joint venture firms could lead to larger gender wage gaps, *ceteris paribus*.

Research Strategy

As indicated above, if the state was effectively protecting women from discriminatory remuneration schemes in the pre-reform period it is quite possible that in the reform period we observe increased discrimination against women in the more competitive and less controlled sectors of the labor market. We examine this issue by dividing our cross-sectional data along three dimensions, each associated with varying degrees of market liberalization and then employing the Oaxaca (1973)/Blinder (1973) and Neumark (1988) decomposition methods described below to analyze differences in the size and composition of the resulting gender wage differentials.

First, we examine how the relative wages of men and women vary across three types of firm ownership: state, collective, and joint venture. In the state-owned sector ultimate control rests with agencies of the national government. Collective enterprises are owned by local communities or local governments. The joint venture enterprises are those involving offshore investors.

State-owned enterprises, while changing rapidly in recent years, maintained many restrictive employment practices during our survey year. We expect the spread of market forces to least affect the state-owned enterprises where restrictions on hiring, dismissals, transfers, and pay were much more severe than for collectives or joint ventures. We expect that the joint venture enterprises generally function in more competitive labor markets and have the most flexible wage payment schemes. The need to generate profit for the private sector partner should also reduce the ability of joint venture firms to engage in costly discriminatory practices.

China's course of reform was gradual, partial, and unevenly implemented. Yet by the mid-1980s, two significant sets of enterprise reforms were in place. The first allowed firms to retain a share of their profits and the second allowed managers to exchange commodities produced outside the plan in markets (Rawski,1994). In late 1984 the Communist Party Central Committee promulgated the idea that workers' effort and productivity be closely linked with material reward (Child, 1994 p.186).

The new profit motivation and the possibility of tying reward to effort began to affect managers' resource allocation decisions, in particular their labor allocation decisions. However, given the established agent/client relationships of the pre-reform period, the persistence of learned behavior, and the gradual and uneven implementation

of reform policies, we posit that newer firms were more much more likely to face harder budget constraints than older firms, regardless of ownership. In addition, enterprises formed after the initiation of reforms (again, regardless of ownership) were likely to be relatively free of the legacy of egalitarian wage policies. We posit that newly created firms were more susceptible to competitive pressures than their pre-reform counterparts.

To examine the effect of these possibilities on the relative wages of women, we simultaneously divide the sample by age of enterprise and enterprise ownership. We classify firms created in 1984 and before as "old" and those firms created in 1985 or after as "new." We chose 1984 as the pivotal year for three reasons. First, the initial tranches of industrial reform measures were in effect by that date (Jefferson and Rawski, 1994). Second, the Party promulgated the policy of linking effort and reward in that year. Third, a change in regulations that year permitted enterprises to engage in open recruitment practices (Child, 1994, p.271)

Another important change in Chinese labor markets is the increasing use of competitive channels, rather than state labor bureaus, by firms wishing to fill vacancies and by employees seeking new positions. Competitive job seekers participated either in open competitive exams, or obtained their jobs through employment agency referrals. Labor bureaus assigned workers to their employers upon completion of their schooling or demobilization from the armed services. In addition, many workers obtained their jobs by being recommended by their friends or relatives, by replacing their parents within an enterprise, or by being transferred. We expect that when jobs are obtained competitively, as is increasingly common, the relative abilities of employees, rather than personal tastes or relationships, dominate the employment decision. We thus divide our sample

accordingly and compare the effects of competitive job search to job assignment on the size and composition of the gender wage gap.

Finally, we examine the influence of wage structure and gender, the relative size of wage gaps in state enterprises and both collective and joint ventures using the methodology developed by Juhn, et al. (1991). This method allows us to evaluate the contribution of qualifications; measured prices, relative gender inequality between ownership types, as well as inter industry differences in overall residual inequality between men and women.

Decomposing the Gender Wage Gap

We first use the well-known procedure developed by Oaxaca (1973) and Blinder (1973) to analyze the composition of the gender wage gap. This procedure splits the total gender wage differential into two components: that part of the differential attributable to gender differences in observable productive characteristics (e.g., education), and the residual gap attributable to differences in the male and female returns to these productive characteristics. This residual, or unexplained, component of the wage gap is generally attributed to discrimination, but could be also due to differences in unobserved productive characteristics.

More formally, the total gender wage gap is equal to

$$\ln \hat{W}_M - \ln \hat{W}_F = \overline{X}_M \hat{B}_M - \overline{X}_F \hat{B}_F \tag{1}$$

where $\ln \hat{W}_M$ and $\ln \hat{W}_F$ are the estimates of the natural log of male and female wages, respectively, from separate wage regressions by sex. $\overline{X}_M$ and $\overline{X}_F$ are vectors of the mean values of the male and female productive characteristics, and $\hat{B}_M$ and $\hat{B}_F$ are

vectors of the estimated regression coefficients from the male and female wage regressions.

This gross wage differential may be decomposed by rearranging the above expression as follows,

$$\ln \hat{W}_M - \ln \hat{W}_F = (\overline{X}_M - \overline{X}_F)\hat{B}_M + \overline{X}_F(\hat{B}_M - \hat{B}_F). \tag{2}$$

The first expression on the right hand side is that portion of the wage differential attributable to differences in the average productive and other characteristics of men and women. The difference in the mean characteristics is multiplied by the estimated coefficients from the men's regression. These coefficients are interpreted as the men's wage structure, or the men's return to these productive characteristics. The second expression on the right is that portion of the wage differential attributable to differences in the male in female regression coefficients—i.e., differences in the returns to men and women for the same productive characteristics. It is this latter component that is generally attributed to discrimination.

A difficulty with this decomposition is that it values the difference in male and female productive characteristics according to the male returns, $\hat{B}_M$. Performing the decomposition in this way assumes that the male wage structure is the wage structure that would prevail absent discrimination. The gross wage differential could also be decomposed as follows, with equal validity

$$\ln \hat{W}_M - \ln \hat{W}_F = (\overline{X}_M - \overline{X}_F)\hat{B}_F + \overline{X}_M(\hat{B}_M - \hat{B}_F). \tag{3}$$

In this expression, the difference in the mean productive characteristics between men and women are valued according to the female return. This decomposition assumes that the female wage structure would prevail in the absence of discrimination. While functionally

equivalent, these two decompositions in practice generally yield different estimates for the wage differential components.

Neumark (1988) proposes an alternative decomposition in which the wage structure that would obtain in the absence of discrimination lies in between the current male and female wage structures. He proposes that the nondiscriminatory wage structure could be estimated using the regression coefficients from a pooled male-female salary regression. In this way, the gross wage differential could be broken down into three components—the portion attributable to differences in productive characteristics, a portion showing the wage advantage accruing to men (i.e., the amount that men are paid, on average, in excess of the nondiscriminatory wage structure), and the women's wage disadvantage (i.e., the amount by which women are underpaid, on average, relative to the nondiscriminatory wage structure). This decomposition may be written as

$$\ln \hat{W}_M - \ln \hat{W}_F = (\overline{X}_M - \overline{X}_F)\hat{B}_P + \overline{X}_M(\hat{B}_M - \hat{B}_P) + \overline{X}_F(\hat{B}_F - \hat{B}_P) \qquad (4)$$

where $\hat{B}_P$ is the estimated nondiscriminatory wage structure, derived from a pooled regression of men and women.

In our analysis, we present decompositions of the gender wage gap calculated using the Oaxaca/Blinder method, assuming that the male wage structure would be the nondiscriminatory wage structure. We believe that this assumption is likely to hold in Chinese labor markets. As a check, we also present decompositions calculated using the Neumark method assuming a pooled wage structure as the nondiscriminatory wage structure.

The Juhn, et al. (1991) procedure allows us to examine the source of differences in the gender wage gaps between different types of firms. Following Blau and Kahn (1996), a gender wage gap equation for state-owned firms may be written as:

$$D^S \equiv \ln \hat{W}_M^S - \ln \hat{W}_F^S = (\overline{X}_M^{Ss} - \overline{X}_F^S)\hat{B}_M^S + \overline{X}_F^S(\hat{B}_M^S - \hat{B}_F^S)$$

or $\qquad D^S = \Delta X^S B_M^S + s^S \Delta q^S$,   (5)

where

$$\Delta X^S = (\overline{X}_M^S - \overline{X}_F^S);$$

$$s^S \Delta q^S = X_F^S(\hat{B}_M^S - \hat{B}_F^S);$$

$s^S = $ residual standard deviation of male wages in state enterprises;

$q^S = $ standardized residual (mean 0, variance 1);

The difference in the gender wage gap between, for example, state enterprises and joint ventures may be decomposed as follows:

$$D^J - D^S = (\Delta\overline{X}^J - \Delta\overline{X}^S)B^S + \Delta\overline{X}^J(B^J - B^S) +$$
$$(\Delta q^J - \Delta q^S)s^S + \Delta q^J(s^J - s^S).$$ (6)

The first term in (6) captures the contribution of differences in human capital and other observed characteristics to the difference in gender wage gap between the two ownership types. The second term reflects differences in the price paid in the two types of firms for a given set of qualifications.

The third term represents the contribution of the residual difference in the relative standing of men and women after controlling for observed human capital characteristics. This term captures differences in the gender wage gap attributable to differences in women's relative standing in the male residual wage distribution in state enterprises and

joint ventures. Following Blau and Kahn's terminology, we label this term the 'gap' effect.

The fourth term in (6) measures inter-industry differences in overall wage inequality after controlling for measured characteristics. The more unequal are mean wages of men between state enterprises and joint ventures, the larger will be women's wage penalty due to discrimination or differential returns to unmeasured characteristics. Again following Blau and Kahn's (1996) terminology, we refer to this effect as 'unobserved prices'.

Data

The data set used here was gathered in 1992 for use in the Chinese Labor Market Research Project (CLMRP), a joint project of the Economics Institute of the Chinese Academy of Social Sciences and the Labor Science Research Institute of the Ministry of Labor. Surveys were collected from 9397 individuals working in 430 different commercial and industrial enterprises under different forms of ownership located in 26 cities in 12 provinces. In each city the local labor bureau was asked to randomly select 20 to 25 enterprises from a list of all those under its jurisdiction with more than fifty employees. Once an enterprise was included in the sample a worker survey was administered to randomly selected employees. The employee questionnaire dealt with demographic characteristics, employment history, wages and compensation, on-the-job training, mobility and migration, working conditions, time allocation, and relationships between workers and their enterprises. The sample used here consists of all state, collective, and joint venture employees with reported income in 1991 and no missing values in critical variables: a total of 3453 males and 2697 females.

The workers are relatively young and well educated. The mean age of male and female employees is 36 and 32.5 years, respectively. Educational attainments of men and women differ little: males have a mean of 11.4 years of schooling and females 11.3 years. At the top end of the educational scale, 8 percent of males and 4 percent of females report university graduation.[9] The men in this sample work 47.5 hours per week and earn 198 yuan per month on average while the women work an average of 47.1 hours per week and earn 170 yuan per month. The majority of workers have long-term attachments to their enterprises: only 21 and 28 percent of male and female workers, respectively are contract and temporary workers. (See Appendix Table A1 for sample means and proportions of key variables by enterprise ownership.)

Only 48 percent of the males and 39 percent of the females work in state-owned enterprises; 32 percent of males and 39 percent of females work in collectively-owned enterprises; and 20 percent of males and 22 percent of females work in privately-owned or joint venture enterprises. These figures are not reflective of the labor force,[10] but rather of the survey design which attempted to select adequately sized samples of state-owned, collectively-owned, and joint venture enterprises in each city.[11]

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[9]   These proportions may seem surprisingly high given that only 0.65 percent of the population were university graduates in 1987. However the national figure masks marked differences in the distribution of educational attainments between rural and urban areas. The sample used here is drawn only from the working population in urban areas.

[10]   In 1991, 62.8 percent of employed persons in urban areas were employed by state-owned enterprises, 21.3 percent were employed by collective enterprises, and the remaining 15.9 percent were employed under other forms of ownership, including joint venture, foreign-funded, private and individual ownership. (ZTN 1997, Table 4-4, pp. 96-7)

[11]   Differences in the sample and population proportions of workers in state, collective, and joint venture workers do not present a problem in analyzing the gender wage gap here since we compare results by ownership sector.

Enterprise surveys were also administered to each firm in the sample. Of the 422 firms in the enterprise survey that reported ownership, 173 were classified as state-owned, 145 as collectively-owned and 99 as joint ventures. Firms declared as joint ventures had both Chinese and foreign partners. Of the 83 joint-ventures where the source of Chinese capital is reported, 6 were funded by centrally-administered enterprises, 14 by provincially-administered enterprises, 47 by municipally-administered enterprises, and 16 by "other" types of firms. The first source of foreign funding for the 92 joint ventures reporting this information was Hong Kong for 56 enterprises, Taiwan for 12 enterprises, Japan for 7 enterprises, Macau for 2 enterprises, Canada for 2 enterprises, the United States for 2 enterprises, and South Korea for 1 enterprise, and "other" for 11 enterprises.

The firms in the enterprise sample together employed over 467,000 people. Women made up 39 percent of the total number of employees. The percentage of women employees varied quite dramatically by ownership. Women constituted 35 percent of the labor force of state-owned firms, 45 percent of the collectively-owned firms and 51 percent of the joint-venture firms.[12]

The data in the enterprise survey reveal that half the firms began operation before 1969 and half on or after that year. We have, however, for reasons discussed above, chosen 1984 as a pivotal year for classifying firms as old or new. According to this scheme, employees worked at 242 older firms, that is, those that began operation before 1985 and 88 newer firms, that is, those that started operation in or after 1985.

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[12]   Maurer-Fazio et al. (1999) report that of the 148 million regular urban workers in China in 1992 that women constituted 34 percent of the labor force in state-owned firms, 39 percent in collectively-owned firms, and 50 percent in "other" firms.

Table 1 reports several measures of our data's income dispersion by ownership sector and gender: the coefficient of variation of the natural log of monthly income, the difference in log income of the workers at the 90th and 10th percentiles of the distribution and the differences in log income of the workers at the 50th and 10th percentiles and those at the 90th and 10th percentiles. This table makes clear that income is much more dispersed in the joint venture sector than either of the other sectors.

Table 1

Income Dispersion by Ownership and Gender

Ownership Sector	coefficient of		90th		50th		10th		Difference		Difference		Difference
	variation		Percentile		Percentile		Percentile		90th-10th		50th-10th		90th-50th
State Enterprises													
Ln Men's Income	7.930		5.733		5.273		4.787		0.946		0.486		0.460
Ln Women's Income	7.600		5.620		5.136		4.719		0.901		0.417		0.484
Collective Enterprises													
Ln Men's Income	8.280		5.694		5.199		4.736		0.958		0.463		0.495
Ln Women's Income	7.880		5.495		5.024		4.625		0.870		0.399		0.471
Joint Enterprises													
Ln Men's Income	9.930		6.215		5.521		4.868		1.347		0.653		0.694
Ln Women's Income	10.400		5.991		5.298		4.727		1.264		0.571		0.693

The Wage Equations

We estimate the following wage equation for each of our subgroups,

$$\ln(w) = a + bED + gX + dHOME + e ,\qquad\qquad (7)$$

where the variables are described below.

We employ the natural log of total monthly income $\ln(w)$ as the dependent variable in the wage equations we use for decomposing the gender wage gap. Monthly income includes reported wages, bonuses, work subsidies, and income in kind. The value

of medical care, pension accruals, and employer-provided housing is not included in the survey's measure of income.

The independent variables include a series of dummy variables that reflect educational attainment, *ED*, a vector *X* of other personal and job-related characteristics including, classification of a worker wage grade system (cadre, worker, or ungraded), wage payment type (hourly, piece rate, fixed wage, floating wage), party membership, industrial classification, and provincial location.[13] Measures of both total work experience and tenure at the current employer and their squared values are also included.

We also include measures of family size and number of children under 15 years of age, *HOME*. We realize that it is more typical to use family variables when estimating labor force participation rather than earnings but we speculate that the effect of these variables on women's labor supply may be of a somewhat different nature in China than in Western countries. In the West, the presence of children, especially young children, primarily affects women's labor force participation and attachment. However, as noted above, in China, women's labor force participation and attachment are particularly high. We think the great variation in child care arrangements plus the large role played by women in home production may cause some women to be unable or unwilling to take certain types of jobs, or to extend their job search beyond their city of residence. We include the child and family variables to control for the possible effects of these restrictions and choices on earnings.

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[13] The base case consists of middle-school educated, hourly-paid, "workers" who are employed in the food industry in Jiangsu Province and are not Party members.

The regression results for these wage equations are reported by ownership and gender in the Appendix in Table A2. The explanatory power of these regressions is quite good: the adjusted R^2 varies from a low of 0.384 in the regression for women in the collective sector to a high of 0.544 for women in the joint venture sector.

Earnings vary considerably by province relative to Jiangsu, our base case. Workers in the highly developed southern coastal province of Guangdong earn premiums that vary between a low of 49 percent for male workers in the state sector and a high of 123 percent for male workers in the joint venture sector. Workers living in the poorer, interior province of Henan suffer wage disadvantages that vary from a low of 20.2 percent to a high of 44.2 percent, for males and females respectively, in the joint-venture sector.

In the state sector, each additional year of work experience, holding constant tenure with the current employer, increases monthly income by 3.3 and 2.6 percent for men and women, respectively. In the collective sector, the return to an additional year of schooling does not vary by gender and is constant at 2.3 percent. In the joint venture sector there is a wide discrepancy in the returns to experience—men earn an additional 4.8 percent for each incremental year of work experience while the return for women is 0. Women, however, receive a positive reward for each incremental year of tenure with their current employer of 2.3 percent while men are penalized by 1.6 percent for each additional year with their current employer (holding total work experience constant).

In the joint venture sector, few of the education dummies have significant coefficients—university education being a notable exception. While educational attainment seems to have little effect on earnings in the joint venture sector, the picture is

quite different for women in the collective sector where each level of education above the base case, junior middle school, receives a positive and significant return.

Party membership has a positive significant effect on earnings for only one group--men in the state sector. The family variables are for the most part insignificant, with one exception--a small negative effect of family size on women's earnings in the collective sector. Interestingly, being paid by piece rate (rather than on an hourly basis) significantly raises the earnings of men in all ownership sectors but does not affect women's earnings. Being on the cadre wage system raises the wages of all collective sector workers and women in the state sector but has no effect on the earnings of joint venture workers or state-sector males. In the joint venture sector, workers who are ungraded receive significantly higher earnings than graded workers while ungraded women in the state sector suffer significantly lower earnings.

Decomposition Results

A. Enterprise Ownership

We begin by using enterprise ownership as a proxy for liberalization. As described above, state-owned enterprises are relatively restricted in their hiring and dismissals. They are affected by a legacy of egalitarian wage policies stemming from a period of 'soft' budget constraints, in which profitability was not a managerial priority. The joint-venture firms face 'harder' budget constraints due to the need to generate profits for their off-shore investors. We speculate that the collective firms are intermediate cases since their budget constraints are clearly firmer than those in the state-sector. These firms, however, may be less-profit driven than their joint-venture

counterparts. The local community and/or local governments "owners" may impose goals such as employment creation over profit seeking.

We first examine how the relative wages of men and women vary with three types of firm ownership: state enterprise, collective enterprise, and joint ventures. As revealed in Table 2 below, the ordering of average wages is consistent over ownership type and gender, with joint venture enterprises paying the most and collectives the least.

The results of the wage decompositions, also shown in Table 2, reveal that of the three ownership types, state-owned enterprises have the smallest male-female wage differentials. Not only so, but the state-owned enterprises also have the smallest unexplained wage differential by both the Oaxaca and Neumark procedures.

Table 2

Oaxaca and Neumark Decompositions by Enterprise Ownership[1]

	State Enterprise	Collective Enterprise	Joint Enterprise
Wage			
Average Male Wage	190.62	181.91	248.38
Average Female Wage	170.35	154.35	198.07
Wage Ratio (W/M)	0.893	0.848	0.797
N Male (Female)	1,697 (1,076)	1,123 (1,048)	633 (573)
Percent Unexplained			
Wage Differential			
Oaxaca[2]	22.96	40.82	47.35
Neumark	20.99	43.23	47.45

[1]Estimates calculated from regressions controlling for educational level, job-contract category, industry type, type of wage, family size, party membership, job tenure, experience, and province.
[2]The Oaxaca decompositions were performed using the male wage structure as the reference, or 'no-discrimination' wage structure.

Given these results, it appears that the proliferation of collective and joint venture enterprises over the course of the reforms is unlikely to have improved the relative

economic position of female workers: the male-female wage differential is largest in the most liberalized sector, which also has the largest fraction of the wage gap unexplained by human capital or job characteristics. However, as noted above, differences in the dispersion of wages by ownership sector could imply that women's wages are a lower fraction of men's wages in a particular sector even when the gap in wages is itself constant across sectors. Interestingly, despite the fact that the gender wage differential is largest in the joint-venture sector, women's relative standing, as measured by where the median woman's income falls on the men's income distribution, is the highest in the this sector. The median woman's income falls at the 38.6 percentile of men's income in the joint venture sector, at the 32.3 percentile in the collective sector and at the 35.7 percentile in the state-owned sector. The large gender wage gap and unexplained residual in the most competitive sector is offset by the improvement in women's standing thus measured.

Despite the mixed picture of the relative position of women's pay in joint venture enterprises, their pay is unarguably higher than that of women working in the other two ownership sectors. Women in joint venture enterprises earn an average of 16 percent more than their state enterprise counterparts and 28 percent more than female workers in collective enterprises. Women in joint ventures earn slightly more on average than men employed in state enterprises. As mentioned above, the percentage of women employees by ownership varies markedly. In our sample, women constituted 35 percent of the labor force of state-owned firms, 45 percent of the collectively-owned firms and 51 percent of

the joint-venture firms. Women thus make up a relatively large share of the labor force where their wages are highest.[14]

Maurer-Fazio et al. (1999) attribute much of the gender wage gap in China's urban labor markets to industrial segregation, that is, the crowding of women into low-paying industries. If women are crowded into low-paying industries by discriminatory labor bureaus then our underlying regressions, which control for industry, may be "explaining away" part of the problem that we wish to examine. When we re-estimate our model excluding the dummy variables that control for industrial sector we find that the percentage of the wage gap that remains unexplained by differences in productive characteristics grows. In the state-owned sector, according to the Neumark method, the unexplained proportion of the wage differential increases from 21 percent to 30 percent. In the collective sector the unexplained portion grows from 43 to 49 percent and in the joint venture sector it grows from 47 to 50 percent. These results imply that women are subject to industrial segregation. The sector we thought to most "protect" women, the state sector, has the largest percentage point increase in the unexplained gap when the industry controls are omitted from the regressions. However, given that the earnings gap (measured in yuan per month) is smallest in this sector, the net effect of industrial segregation on monthly earnings is not necessarily larger here than in the other sectors.[15]

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[14]   The wages of male employees in joint venture enterprises exceed the wages of men in the other sectors to an even greater extent than do women's wages. The average male employee in a joint enterprise earns 30 percent more than a male state enterprise employee and 38 percent more than a comparable collective enterprise worker.

[15]   When we eliminate all variables from the underlying wage regressions except for a constant term, location dummies, education dummies, years of work experience and firm tenure (and their squared values) the unexplained portion of the wage differential rises to 33 percent in the state-owned sector and to 51 percent in the collective sector and

Even after removing industry controls, the proportion of the wage gap explained by differences in human capital and other characteristics remains highest in the state sector.[16]

B. Age of the Enterprise

The distinction between various ownership types may be sharpened if we further divide the sample according to the age of the enterprise. Enterprises of all types formed during the post-reform period were founded in a more competitive atmosphere. By virtue of not having a long-standing agent/client relationship with government authorities, we believe that it is likely that the newer firms are better positioned to take advantage of the liberalization of the labor and product markets. In addition, this reduced relationship with the government also means that firms formed in the post-reform period likely face 'harder' budget constraints that limit managers' ability to engage in costly discrimination. Firms founded after the implementation of reforms are also free of most, if not all, vestiges of the earlier legacy of egalitarian wages and thus operate in a more competitive environment than older enterprises.

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to 52 percent in the joint venture sector. The wage regressions for this "parsimonious" model are reported in the Appendix in Table A3.

[16]   Zveglich, Rodgers, and Roders (1997) analyze changes in gender earnings gaps in Taiwan's relatively unfettered labor markets. Taiwan shares a common cultural heritage but differs substantially in terms of institutional setting; comparisons are thus revealing. They find that the mean ratio of women's to men's wages stayed constant throughout the 1978-1992 period at 65 percent, that is a level substantially below any subset of our data. Over the period women improved their mean levels of education and work experience relative to men. They demonstrated no decline in their commitment to the labor force. Yet the unexplained component of the gender-pay gap increased over time (from 37.4 to 57.7 percent of the total gap). Zveglich et al. thus suggest that in Taiwan's relatively competitive labor environment discrimination against women increased over this period.

Of course, the decentralization of control over remuneration also means that individual managers can indulge their tastes for discrimination. If the effects of profit motivation outweigh the effects of the new-found freedom to discriminate then we expect to see women faring better in new enterprises of all types than in older ones. The results from the analysis by enterprise age may be seen in Table 3.

Table 3

Oaxaca and Neumark Decompositions by Enterprise Ownership and the Age of the Enterprise[1]

	State Enterprise		Collective Enterprise		Joint Enterprise	
	Old	*New*	*Old*	*New*	*Old*	*New*
Wage						
Average Male Wage	190.04		184.64	156.75	223.48	262.49
Average Female Wage	169.67		156.85	134.77	183.05	207.50
Wage Ratio (W/M)	0.893		0.849	0.859	0.819	0.791
N Male	1,625	Insufficient Data	1,019	104	217	416
N Female	1,040		936	112	213	360
Percent Unexplained Wage Differential						
Oaxaca[2]	27.73		38.31	44.45	34.36	37.75
Neumark	27.28		47.17	42.52	34.97	38.84

[1]Estimates calculated from regressions controlling for educational level, job-contract category, industry type, type of wage, family size, party membership, job tenure, experience, and province.
[2]The Oaxaca decompositions were performed using the male wage structure as the reference, or 'no-discrimination' wage structure.

The evidence shown in Table 3 is mixed. Looking first at older enterprises, as earlier, the female-male wage gap is smallest at state firms, and largest at joint venture enterprises. However, in a change of ordering from the above analysis based on all firms regardless of age, the fraction of the wage gap unexplained by differences in human capital characteristics is largest at collective enterprises, second largest at the joint venture enterprises and smallest in the state sector.

How do women fare in newer enterprises? Unfortunately, the sample size for new state-owned enterprises (9 firms and 107 employees) was too small to analyze. In new collective enterprises, both male and female workers have lower mean wages in comparison to their colleagues in the older collectives. Measured in yuan per month, the female-male wage gap is lower in the new collectives but the ratio of women's to men's wages is almost identical. The fraction of the wage gap unexplained by human capital differences is higher in the newer collectives according to the Oaxaca measure, but lower according to the Neumark measure. While the absolute pay of both men and women is lower in the new collectives than in the older enterprises, our results do not yield a definitive answer as to whether women's relative situation improves or worsens.

Table 3 shows that women at new joint venture enterprises experienced slightly lower relative wages than their counterparts at older joint venture enterprises. Both the female-male wage gap and the unexplained portion of the gap are higher at new joint venture enterprises. However, the absolute wages of both men and women are higher at new joint venture enterprises compared with older joint venture enterprises. While newer joint venture enterprises, arguably the firms participating in the most liberalized labor markets, pay higher mean wages for women than the older firms, these women's mean earnings relative to men's have declined, as male wages have increased even more.

C. Job Search Channel

During the socialist period, workers were generally assigned to jobs. Workers could not refuse assignments, nor could enterprises refuse to accept new employees. Many of the respondents in our survey obtained their jobs in this way, while others found employment by competitive processes. If, on the one hand, the job assignment process

incorporated the socialist egalitarian ethic and protected women from traditional discriminatory practices, then its removal could allow the reemergence of such practices and the crowding of women into low paying positions and sectors. On the other hand, as the above sections suggests, the job assignment system previously crowded women into low paying industries then competition for jobs could allow women to be judged on qualifications. Thus, escape from socialist control in job assignments could either hurt or help women.

We classified workers' job attainment method as 'competitive' if they participated in open competitive exams or were referred by an employment agency and as 'assigned' if they were assigned to the enterprise by a government bureau on completion of their education or on demobilization from the army. We did not have enough information to classify workers as simply 'competitive' or 'assigned' if they obtained their job through the recommendations of friends or relatives or by transfer and thus dropped these cases from our sample.

We presume that assigned jobs in state-owned enterprises comprise the least liberalized sector of the labor market, while jobs found competitively in joint venture enterprises comprise the most liberalized channel. The results of this analysis are shown in Table 4.

Table 4

**Oaxaca and Neumark Decompositions by Enterprise Ownership
And the Job Search Channel[1]**

	State Enterprise		Collective Enterprise		Joint Enterprise	
	Assign	*Compete*	*Assign*	*Compete*	*Assign*	*Compete*
Wage						
Average Male Wage	189.55	182.91	184.98	175.16	244.05	227.69
Average Female Wage	171.75	166.11	153.26	150.64	180.99	212.02
Wage Ratio (W/M)	0.906	0.908	0.828	0.860	0.742	0.931
N Male	625	388	314	248	131	173
N Female	239	322	207	316	97	202
Percent Unexplained Wage Differential						
Oaxaca[2]	34.54	-20.99	45.33	43.31	42.09	51.70
Neumark	28.22	-20.01	38.08	50.92	27.91	60.90

[1]Estimates calculated from regressions controlling for educational level, job-contract category, industry type, type of wage, family size, party membership, job tenure, experience, and province.
[2]The Oaxaca decompositions were performed using the male wage structure as the reference, or 'no-discrimination' wage structure.

Table 4 shows the clearest evidence of liberalization helping women in the labor market. For women in competitively-obtained state-sector jobs, the unexplained gap even becomes negative.[17]

Competitive positions within joint venture enterprises are arguably the most liberalized segment of the labor market in our data. Regardless of the percentage of the wage gap unexplained by productive characteristics, the actual female-male wage gap, at less than seven percent, is the smallest we found, revealing a high level of earnings equality between male and female workers. Even though the unexplained portion of the

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[17]   In a Oaxaca or Neumark decomposition, a negative unexplained wage gap means that women receive, on average, a wage premium over men, unaccounted for by differences in productive characteristics.

wage gap is 10 percentage points higher by the Oaxaca method for those who found their jobs competitively than those assigned, and even more by the Neumark method, the discriminatory wage gap is negligible in yuan terms.[18] Notably, the wage ratio for competitive, joint venture enterprise jobs is higher than the wage ratio for state-owned enterprise jobs. This result weakens the argument that the state acts as 'the great equalizer' or protector of women in ways that competitive firms cannot match.

D.   The Effects of Wage Structure

Suppose that the relative standing of women were the same across state, collective and joint venture enterprises, after controlling for observed characteristics. That is, the mean woman's wage ranks at, say, the 30th percentile of the men's residual wage distribution. Suppose, however, that overall inequality of men's earnings is larger in joint ventures—the variance of the residual wage distribution is larger in joint ventures. Oaxaca and Neumark decompositions performed in this situation will show a larger unexplained gender wage gap for joint ventures compared to state enterprises, even though discrimination—defined as moving women down the male residual wage distribution—is no worse in joint ventures than state enterprises. Yet standard measures of discrimination show a difference, as the wider dispersal of wages in joint ventures imposes a larger penalty on women for a given deficit on the male residual wage distribution. We now turn to an examination of how such differences in wage structure may affect our findings.

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[18]   The average wage gap is 63 yuan for assigned jobs in joint enterprises and 16 yuan for competitive jobs. Using the lowest estimate of the discriminatory portion in assigned jobs yields a discriminatory wage gap of 18 yuan. Using the higher Neumark estimate of the discriminatory wage gap in competitive jobs yields a discriminatory gap of less than 10 yuan per month.

We use the Juhn (1991) method described earlier to decompose the difference in gender wage gaps between ownership types into four components: effects of differences in mean observed characteristics; effects of differences in the observed return to these characteristics; effects of differences in women's ranking on the male residual wage distribution, and; differences in overall residual inequality.

Our results are presented using the gender wage gap at state enterprises as the base. We do this to evaluate the putatively more liberalized joint and collective enterprises relatively to the more restrictive employment practices of the state enterprises.[19]

Results of the Juhn decomposition are presented in Table 5. Our results show that the mean woman's position on the men's residual wage scale contributes little to the relative gender wage gaps. For all types of firms, the mean woman's position on the men's residual wage scale is between around 42 and 47 percent, indicating little difference between the average man's and average woman's wage within ownership types after controlling for observable characteristics, and little difference in the relative placement of women across ownership types.[20] The column labeled 'Gap' shows the

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[19]   Referring to equation (6), using a common state enterprise base means that inter-industry differences in the components of wage structure are weighted using the collective and joint weights (cf. second and fourth terms in (6)), while inter-industry differences in gender-specific factors are weighted using base category, or state enterprise weights (cf. first and third terms in (6)). See Blau and Kahn, (1996), pg. S43.

[20]   By this measure, the economic standing of Chinese women in all ownership types compares quite favorably with the relative standing of women in other countries. In the international comparison of Blau and Kahn (1996), women's mean ranking in the male residual distribution ranged from a low of 18.5 percent in Norway to a high of 37.5 percent in Switzerland, far lower than our findings for China (Blau and Kahn, 1996, Table 5).

contribution of the mean women's placement on the men's residual distribution to be

negligible, less than two percent.

Table 5
Juhn Decompositions of the Relative Gender Wage
Gap Between State Enterprises and Other
Ownership Types

Sector	D(i)	Mean Female Residual Percentile	D(i) - D(state)	
State	0.1119	46.6	N/A	
Collective	0.1643	42.8	0.0524	
Joint	0.2262	41.6	0.1103	

Sector	Observed Characteristics	Observed Prices	Gap	Unobserved Prices
Collective	-0.0142	0.0222	-0.0008	0.0452
Joint	0.0429	-0.0189	0.0013	0.085

Sector	Sum of Gender Specific Effects	Sum of Wage Structure Effects		
Collective	-0.0150	0.0674		
Joint	0.0441	0.0662		

The column labeled 'Unobserved Prices' indicates that a higher level of residual

wage dispersion in both collective and joint enterprises accounts substantially for the

larger gender wage gap in these enterprises than in state enterprises. In other words, higher residual wage inequality in collective and joint enterprises imposes a larger wage penalty on women for either shortfalls in mean human capital characteristics or wage discrimination, compared to state enterprises. Residual wage inequality accounts for 86 percent of the relative gender pay gap between collective and state enterprises, and 77 percent of the relative gap between joint venture and state enterprises.

Observed characteristics have differential effects on the relative wage gap at collective and joint enterprises. This figure is positive for joint enterprises, indicating that the women in these enterprises have favorable relative levels of measured human capital characteristics. Women in collective enterprises have somewhat less favorable levels of observable characteristics relative to women in state enterprises.

The effect of observed prices is positive for collective enterprises, meaning that the male returns to the observed characteristics increases the gender wage gap in collective enterprises relative to state enterprises. The effect of observed prices is negative for joint enterprises, indicating that observed prices tend to mitigate the relative gender wage gap between state enterprises and joint venture enterprises.

The final panel of Table 5 aggregates gender specific effects (Observed Characteristics plus Gap effects) and wage structure effects (Observed Prices plus Unobserved Prices). The positive gender-specific effects for women working in joint enterprises reflect their favorable levels of human capital characteristics compared to women in state enterprises. Conversely, women working in collective enterprises have somewhat less favorable levels of human capital characteristics relative to state enterprise

women. However, this effect is swamped by the large and opposite-signed wage structure effects.

The positive wage structure effects for both collective and joint enterprises indicate that the higher degree of overall wage inequality in these enterprises significantly increases their gender wage gaps relative to state enterprises. For collective enterprises, this wage inequality is more than sufficient to account for the higher wage gap is such enterprises. For joint enterprises, wage inequality accounts for around 60 percent of the larger gender wage gaps relative to state enterprises.

The results of the Juhn decompositions indicate the need to take wage structure issues into account in evaluating the effects of economic liberalization on the economic status of women. After controlling for observable characteristics, we find little difference across industry types in the average woman's placement on the men's residual wage distribution. However, the wage penalty to women from even this small disadvantage is relatively large in both collective and joint enterprises, as the residual wage inequality in both these ownership types is quite large relative to state enterprises.

Conclusion

We set out to analyze whether the economic reform process in China has worked to women's relative advantage or disadvantage. We focus on one observable aspect of women's economic status—their earnings relative to men's. Working with cross-section data we can not directly observe changes in women's relative earnings over the course of the reforms but we are able exploit sectoral variation in the degree of market liberalization to infer the effects of the reforms on those earnings.

We find wage gaps are largest in the most liberalized sector, that is, the joint venture sector, smaller in the collective sector, and smallest in the least liberalized sector, the state sector. The proportion of the gap left unexplained by differences in observable characteristics (i.e., the proportion often attributed to discrimination) is largest in the joint venture sector and smallest in the state-owned sector. It thus seems, at first glance, that labor market liberalization in China does not work to women's advantage but rather to their disadvantage.

However, we have to emphasize several additional findings. First, the decline in women's pay relative to men's is offset in one sense by an absolute increase in wages. Both women and men in the more liberalized joint venture sector earn more than their counterparts in the state and collective sectors. Second, when we consider where the median woman's earnings fall on the men's income distribution we find that women's relative standing is highest in the joint venture sector. Third, when we proxy the degree of liberalization in the labor market by identifying two groups within our sample—those assigned to their jobs and those who found their employment through the market place— we find "the assigned" group has wider gender pay gaps and that a greater proportion of these gaps is attributable to discrimination. In this regard, liberalization seems to work to women's advantage.

Furthermore, when we take the differences in wage structure into account, it becomes clear that much of the larger gender wage gaps in the joint venture and collective sectors can be explained by the greater degree of wage inequality in those sectors. There is very little difference, by sector, in the mean female percentile ranking on the male residual wage scale, that is, the mean female percentile after controlling for

observable characteristics (the mean percentiles range from 41.6 in the joint venture

sector to 46.6 in the state sector). These rankings are extraordinarily high in international

comparison and support Meng's contention that programs promoting gender equity in the

socialist period were both effective and durable. Although we began our investigation

with the idea that wage decentralization and reduced levels of government involvement in

Chinese labor markets might lead to a reemergence of discrimination against women, our

analysis of the relationship between the degree of market liberalization and the size and

composition of the gender wage gaps lends no support to this hypothesis.

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Table A1
Descriptive Statistics

Variable	State Enterprises		Collective Enterprises		Joint Enterprises	
	Men	Women	Men	Women	Men	Women
Education						
Years of schooling						
3 Years Primary Education	0.018	0.007	0.012	0.008	0.006	0.007
6 Years Primary Education	0.052	0.021	0.063	0.026	0.033	0.023
Junior/Middle School	0.238	0.259	0.299	0.290	0.224	0.244
Junior Technical School	0.050	0.038	0.025	0.039	0.022	0.030
Senior Middle School	0.253	0.342	0.251	0.363	0.287	0.377
Vocational Senior Middle School	0.018	0.036	0.027	0.044	0.041	0.084
TV College, Night College, Correspondence School	0.075	0.066	0.081	0.049	0.097	0.047
Specialized High School	0.120	0.120	0.116	0.097	0.097	0.079
Specialized College	0.098	0.071	0.081	0.058	0.090	0.068
University Graduate	0.076	0.038	0.045	0.027	0.090	0.038
Post-Graduate Student	0.002	0.002	0.000	0.000	0.011	0.003
Wage Grade System						
Worker	0.606	0.698	0.646	0.721	0.562	0.656
Cadre	0.354	0.271	0.318	0.232	0.275	0.182
No Wage Grade System	0.041	0.031	0.036	0.047	0.163	0.162
Wage Type						
Hourly Wage	0.220	0.270	0.203	0.221	0.203	0.229
Piece Rate	0.058	0.047	0.080	0.086	0.084	0.103
Fixed or Permanent Wage	0.646	0.600	0.629	0.611	0.595	0.583
Floating Wage	0.076	0.082	0.087	0.082	0.117	0.086
Party Membership						
Party Member	0.161	0.078	0.151	0.082	0.095	0.049
Industry						
Machinery	0.262	0.200	0.172	0.156	0.178	0.122
Chemical	0.147	0.115	0.175	0.128	0.135	0.110
Textile	0.067	0.087	0.094	0.123	0.160	0.211
Electrical	0.087	0.101	0.045	0.052	0.067	0.140
Retailing	0.085	0.145	0.078	0.099	0.051	0.070
Paper	0.035	0.029	0.031	0.077	0.040	0.031
Metal Working	0.038	0.030	0.019	0.012	0.011	0.026
Construction	0.084	0.055	0.081	0.068	0.079	0.033
Clothing	0.017	0.024	0.059	0.077	0.029	0.035
Furniture	0.008	0.016	0.018	0.022	0.025	0.038
Excavation	0.011	0.005	0.033	0.011	0.000	0.000
Transportation	0.032	0.028	0.057	0.051	0.024	0.014
Food	0.094	0.124	0.103	0.094	0.129	0.106
Service	0.011	0.022	0.019	0.014	0.073	0.063
Energy	0.019	0.017	0.018	0.015	0.000	0.000
Other	0.005	0.003	0.000	0.000	0.000	0.000
Family						
Age of Worker	36.886	33.103	36.222	32.843	32.746	29.340
Family Size	3.912	3.803	3.900	3.615	3.887	3.970
Family Members Under 15	0.672	0.691	0.671	0.665	0.605	0.623

Table A1
Descriptive Statistics, continued

Variable	State Enterprises		Collective Enterprises		Joint Enterprises	
	Men	Women	Men	Women	Men	Women
Tenure and Experience						
Total Years Worked	17.750	14.230	17.109	14.002	13.533	10.673
Total Years Squared	429.483	273.508	397.818	262.745	292.256	179.442
Years at Current Enterprise	13.207	10.786	12.625	10.714	7.492	7.115
Years at Enterprise Squared	263.281	169.494	243.215	163.200	117.371	94.850
Province						
Shanxi	0.138	0.149	0.193	0.226	0.071	0.068
Hebei	0.063	0.053	0.067	0.058	0.052	0.045
Jilin	0.081	0.116	0.106	0.126	0.071	0.108
Jiangsu	0.075	0.063	0.065	0.072	0.124	0.133
Anhui	0.041	0.020	0.018	0.014	0.029	0.002
Shandong	0.037	0.040	0.066	0.075	0.244	0.300
Fujian	0.055	0.057	0.045	0.044	0.083	0.086
Hunan	0.035	0.052	0.070	0.071	0.035	0.019
Henan	0.143	0.139	0.075	0.089	0.067	0.045
Guangdong	0.075	0.063	0.034	0.024	0.168	0.120
Hainan	0.081	0.070	0.068	0.028	0.056	0.073
Sichuan	0.176	0.178	0.193	0.174	0.000	0.000
Wage						
Ln Wage	5.250	5.138	5.203	5.039	5.515	5.289
Yuan per month	190.63	170.36	181.73	154.34	248.33	198.06
Number of Observations	1697	1076	1122	1048	630	573

Table A2

(Log) Monthly Income Regressions: State-Owned Enterprises

Variable	Pooled			Men's			Women's		
	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|
Intercept	4.827	0.044	<.0001	4.818	0.060	<.0001	4.813	0.065	<.0001
3 years primary	-0.008	0.052	0.877	-0.036	0.062	0.557	0.050	0.106	0.639
6 years primary	0.011	0.032	0.739	0.028	0.040	0.481	-0.002	0.061	0.969
Junior Technical School	0.041	0.031	0.188	0.041	0.041	0.315	0.040	0.049	0.415
Senior Middle School	0.014	0.017	0.388	0.016	0.024	0.500	0.012	0.023	0.617
Vocational Senior Sch	-0.012	0.040	0.758	0.095	0.064	0.136	-0.098	0.050	0.047
TV/Night College	0.078	0.026	0.003	0.091	0.035	0.010	0.055	0.039	0.154
Specialized High Sch	0.036	0.022	0.110	0.071	0.030	0.019	-0.026	0.032	0.427
Specialized College	0.107	0.026	<.0001	0.126	0.034	0.000	0.070	0.039	0.075
University Graduate	0.181	0.030	<.0001	0.213	0.039	<.0001	0.121	0.050	0.016
Post-Graduate Studies	0.133	0.140	0.342	0.040	0.193	0.835	0.174	0.201	0.386
Cadre	0.034	0.017	0.044	0.010	0.023	0.679	0.071	0.024	0.003
Not Wage Graded	-0.066	0.033	0.044	-0.044	0.042	0.302	-0.125	0.051	0.015
Piece Rate	0.070	0.029	0.014	0.099	0.039	0.010	0.023	0.043	0.597
Fixed Wage	-0.006	0.015	0.689	-0.008	0.021	0.689	-0.006	0.020	0.756
Floating Wage	-0.010	0.025	0.687	-0.009	0.035	0.804	-0.019	0.036	0.597
Party Member	0.066	0.019	0.001	0.066	0.024	0.007	0.054	0.034	0.111
Machinery	0.091	0.024	0.000	0.123	0.033	0.000	0.042	0.033	0.207
Chemical	0.107	0.025	<.0001	0.130	0.036	0.000	0.075	0.036	0.040
Textiles	0.045	0.030	0.143	0.046	0.044	0.295	0.040	0.041	0.333
Electronic	0.004	0.028	0.886	0.025	0.040	0.531	-0.017	0.037	0.640
Retailing	0.018	0.027	0.501	0.068	0.040	0.090	-0.027	0.035	0.452
Paper	-0.056	0.039	0.151	-0.077	0.053	0.146	0.011	0.058	0.845
Metallurgy	0.185	0.037	<.0001	0.197	0.050	<.0001	0.176	0.057	0.002
Construction	0.047	0.030	0.116	0.077	0.041	0.058	-0.001	0.045	0.983
Clothing	-0.041	0.047	0.385	0.012	0.069	0.863	-0.072	0.062	0.244
Furniture	0.062	0.061	0.310	0.092	0.097	0.346	0.052	0.076	0.497
Excavation	0.372	0.069	<.0001	0.442	0.085	<.0001	0.107	0.128	0.406
Transportation	0.075	0.040	0.062	0.111	0.055	0.042	0.038	0.059	0.525
Services	-0.050	0.053	0.344	0.064	0.085	0.450	-0.145	0.065	0.025
Energy	0.278	0.050	<.0001	0.254	0.066	0.000	0.338	0.075	<.0001
Other	-0.358	0.097	0.000	-0.204	0.123	0.096	-0.687	0.165	<.0001
Family Size	-0.002	0.005	0.732	-0.005	0.006	0.417	0.004	0.007	0.600
Fam. Under 15	-0.004	0.010	0.650	-0.001	0.013	0.910	-0.012	0.015	0.407
Total years worked	0.030	0.003	<.0001	0.033	0.004	<.0001	0.026	0.006	<.0001
Years worked squared	0.000	0.000	<.0001	0.000	0.000	<.0001	0.000	0.000	0.035
Years at current firm	0.004	0.003	0.212	0.001	0.004	0.749	0.009	0.005	0.077
Years at firm squared	0.000	0.000	0.248	0.000	0.000	0.656	0.000	0.000	0.154
Shanxi	-0.170	0.029	<.0001	-0.183	0.040	<.0001	-0.129	0.043	0.003
Hebei	-0.193	0.035	<.0001	-0.210	0.046	<.0001	-0.143	0.052	0.006
Jilin	-0.296	0.030	<.0001	-0.288	0.042	<.0001	-0.289	0.043	<.0001
Anhui	-0.158	0.041	0.000	-0.225	0.052	<.0001	0.025	0.072	0.725
Shandong	-0.029	0.038	0.445	-0.083	0.053	0.116	0.063	0.055	0.253
Fujian	0.135	0.036	0.000	0.111	0.048	0.022	0.193	0.052	0.000
Hunan	-0.075	0.037	0.043	-0.085	0.053	0.110	-0.032	0.051	0.530
Henan	-0.302	0.029	<.0001	-0.303	0.038	<.0001	-0.295	0.044	<.0001
Guangdong	0.410	0.034	<.0001	0.399	0.045	<.0001	0.422	0.051	<.0001
Hainan	0.080	0.035	0.022	0.049	0.046	0.280	0.136	0.055	0.014
Sichuan	-0.118	0.028	<.0001	-0.135	0.038	0.000	-0.069	0.042	0.097
No. of obs.	2778			1697			1076		
Adj. R²	0.429			0.412			0.501		
F-stat	44.500			24.000			21.460		

The base case consists of middle-school educated, hourly-paid, "workers" who are employed in the food industry in

Jiangsu Province and are not Party members.

Table A2, continued

(Log) Monthly Income Regressions: Collectively-Owned Enterprises

Variable	Pooled			Men's			Women's		
	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|
Intercept	4.679	0.056	<.0001	4.686	0.078	<.0001	4.710	0.083	<.0001
3 years primary	-0.019	0.074	0.795	0.014	0.097	0.888	-0.065	0.113	0.565
6 years primary	-0.014	0.036	0.698	-0.016	0.046	0.720	-0.011	0.065	0.861
Junior Technical School	0.063	0.043	0.141	0.026	0.067	0.701	0.106	0.055	0.054
Senior Middle School	0.046	0.019	0.016	0.032	0.028	0.257	0.060	0.026	0.019
Vocational Senior Sch	0.055	0.042	0.194	-0.035	0.068	0.608	0.133	0.054	0.013
TV/Night College	0.144	0.032	<.0001	0.106	0.042	0.012	0.151	0.050	0.002
Specialized High Sch	0.063	0.028	0.024	0.033	0.039	0.396	0.077	0.040	0.056
Specialized College	0.106	0.033	0.001	0.064	0.043	0.143	0.146	0.050	0.004
University Graduate	0.173	0.044	<.0001	0.127	0.058	0.030	0.181	0.068	0.008
Cadre	0.095	0.021	<.0001	0.119	0.029	<.0001	0.084	0.031	0.007
Not Wage Graded	0.025	0.038	0.505	0.073	0.057	0.201	0.014	0.051	0.781
Piece Rate	0.119	0.030	<.0001	0.182	0.044	<.0001	0.016	0.042	0.699
Fixed Wage	0.005	0.018	0.799	-0.014	0.027	0.596	0.011	0.025	0.655
Floating Wage	0.101	0.029	0.001	0.108	0.042	0.010	0.078	0.041	0.060
Party Member	0.049	0.024	0.039	0.047	0.031	0.123	-0.001	0.039	0.974
Machinery	0.067	0.031	0.030	0.100	0.044	0.025	-0.002	0.044	0.961
Chemical	0.121	0.031	<.0001	0.140	0.042	0.001	0.053	0.047	0.256
Textiles	0.122	0.033	0.000	0.140	0.048	0.004	0.106	0.047	0.025
Electronic	0.225	0.043	<.0001	0.180	0.063	0.004	0.237	0.059	<.0001
Retailing	-0.056	0.033	0.092	-0.078	0.049	0.114	-0.049	0.046	0.284
Paper	0.019	0.039	0.636	0.027	0.068	0.694	0.022	0.050	0.658
Metallurgy	0.075	0.063	0.240	0.170	0.085	0.045	-0.137	0.098	0.164
Construction	0.144	0.036	<.0001	0.134	0.050	0.008	0.128	0.052	0.014
Clothing	-0.096	0.038	0.011	-0.126	0.055	0.021	-0.082	0.053	0.125
Furniture	-0.145	0.058	0.012	-0.173	0.086	0.044	-0.117	0.079	0.136
Excavation	0.189	0.053	0.000	0.177	0.066	0.007	0.115	0.097	0.235
Transportation	0.044	0.039	0.261	-0.009	0.055	0.863	0.064	0.055	0.245
Services	-0.015	0.065	0.815	0.015	0.089	0.868	-0.085	0.096	0.375
Energy	0.113	0.065	0.080	0.073	0.090	0.418	0.121	0.094	0.198
Family Size	-0.001	0.006	0.879	0.010	0.007	0.196	-0.017	0.010	0.077
Fam. Under 15	0.001	0.013	0.913	-0.003	0.017	0.885	-0.016	0.020	0.429
Total years worked	0.021	0.004	<.0001	0.023	0.005	<.0001	0.023	0.007	0.001
Years worked squared	0.000	0.000	0.081	0.000	0.000	0.077	0.000	0.000	0.175
Years at current firm	0.007	0.004	0.067	0.007	0.005	0.197	0.014	0.007	0.027
Years at firm squared	0.000	0.000	0.320	0.000	0.000	0.414	0.000	0.000	0.103
Shanxi	-0.119	0.035	0.001	-0.140	0.051	0.007	-0.114	0.047	0.015
Hebei	-0.130	0.040	0.001	-0.106	0.057	0.065	-0.174	0.057	0.002
Jilin	-0.172	0.036	<.0001	-0.131	0.053	0.014	-0.209	0.049	<.0001
Anhui	0.135	0.063	0.034	0.153	0.087	0.079	0.089	0.092	0.332
Shandong	0.135	0.041	0.001	0.110	0.059	0.065	0.165	0.056	0.003
Fujian	0.023	0.047	0.622	0.051	0.067	0.442	-0.022	0.067	0.746
Hunan	-0.134	0.041	0.001	-0.144	0.060	0.016	-0.145	0.057	0.011
Henan	-0.216	0.039	<.0001	-0.189	0.058	0.001	-0.241	0.052	<.0001
Guangdong	0.620	0.053	<.0001	0.693	0.073	<.0001	0.506	0.080	<.0001
Hainan	0.164	0.047	0.001	0.093	0.062	0.131	0.291	0.077	0.000
Sichuan	-0.038	0.035	0.278	-0.036	0.050	0.472	-0.065	0.050	0.189
No. of obs.	2179			1122			1048		
Adj. R2	0.414			0.442			0.384		
F-stat	32.680			18.490			13.610		

The base case consists of middle-school educated, hourly-paid, "workers" who are employed in the food industry in

Jiangsu Province and are not Party members.

Table A2, continued

(Log) Monthly Income Regressions: Joint Venture Enterprises

Variable	Pooled Parameter Estimate	Standard Error	Pr > |t|	Men's Parameter Estimate	Standard Error	Pr > |t|	Women's Parameter Estimate	Standard Error	Pr > |t|
Intercept	5.067	0.078	<.0001	5.039	0.108	<.0001	5.176	0.113	<.0001
3 years primary	-0.355	0.138	0.010	0.027	0.213	0.898	-0.704	0.191	0.000
6 years primary	-0.004	0.076	0.959	-0.043	0.101	0.672	-0.010	0.114	0.933
Junior Technical School	-0.058	0.079	0.461	0.024	0.122	0.842	-0.152	0.098	0.121
Senior Middle School	0.016	0.033	0.636	0.009	0.049	0.854	0.010	0.043	0.812
Vocational Senior Sch	0.015	0.056	0.787	-0.014	0.093	0.881	0.008	0.067	0.902
TV/Night College	0.076	0.051	0.135	0.017	0.066	0.799	0.085	0.081	0.293
Specialized High Sch	0.063	0.049	0.204	0.030	0.069	0.663	0.062	0.069	0.369
Specialized College	0.093	0.051	0.071	0.038	0.071	0.590	0.103	0.075	0.172
University Graduate	0.280	0.060	<.0001	0.247	0.076	0.001	0.184	0.101	0.069
Post-Graduate Studies	0.360	0.140	0.010	0.260	0.166	0.120	0.378	0.269	0.161
Cadre	-0.018	0.037	0.621	-0.029	0.052	0.578	0.029	0.051	0.565
Not Wage Graded	0.173	0.037	<.0001	0.098	0.053	0.065	0.200	0.051	<.0001
Piece Rate	0.104	0.050	0.039	0.203	0.075	0.007	0.020	0.067	0.759
Fixed Wage	-0.006	0.031	0.856	0.033	0.045	0.469	-0.033	0.043	0.438
Floating Wage	0.114	0.047	0.016	0.165	0.067	0.013	0.031	0.065	0.638
Party Member	0.063	0.050	0.209	0.101	0.063	0.113	-0.019	0.081	0.817
Machinery	-0.184	0.047	0.000	-0.201	0.065	0.002	-0.201	0.068	0.003
Chemical	-0.162	0.054	0.003	-0.050	0.075	0.512	-0.291	0.076	0.000
Textiles	-0.106	0.046	0.021	-0.117	0.067	0.082	-0.087	0.062	0.161
Electronic	-0.091	0.056	0.104	-0.212	0.088	0.017	0.035	0.072	0.633
Retailing	-0.163	0.059	0.006	-0.086	0.089	0.334	-0.224	0.078	0.004
Paper	0.018	0.076	0.813	-0.094	0.104	0.367	0.055	0.112	0.625
Metallurgy	-0.019	0.107	0.856	-0.203	0.182	0.267	0.122	0.130	0.346
Construction	-0.111	0.068	0.099	-0.185	0.086	0.032	0.067	0.115	0.559
Clothing	0.063	0.077	0.413	-0.027	0.113	0.810	0.166	0.104	0.111
Furniture	-0.307	0.077	<.0001	-0.341	0.120	0.005	-0.249	0.097	0.011
Transport	0.340	0.095	0.000	0.195	0.124	0.116	0.529	0.144	0.000
Service	0.026	0.059	0.657	0.054	0.082	0.512	-0.023	0.081	0.774
Family Size	-0.014	0.009	0.130	-0.015	0.013	0.258	-0.013	0.013	0.319
Fam. Under 15	0.001	0.019	0.942	-0.013	0.030	0.666	0.002	0.025	0.921
Total years worked	0.031	0.006	<.0001	0.047	0.007	<.0001	0.000	0.010	0.976
Years worked squared	0.000	0.000	0.027	-0.001	0.000	<.0001	0.000	0.000	0.181
Years at current firm	-0.003	0.006	0.562	-0.016	0.008	0.054	0.023	0.009	0.011
Years at firm squared	0.000	0.000	0.941	0.000	0.000	0.111	-0.001	0.000	0.014
Shanxi	0.025	0.059	0.673	-0.003	0.085	0.976	0.027	0.083	0.740
Hebei	0.074	0.069	0.287	0.087	0.097	0.372	0.014	0.095	0.881
Jilin	-0.359	0.059	<.0001	-0.136	0.089	0.128	-0.520	0.075	<.0001
Anhui	-0.125	0.102	0.225	-0.064	0.116	0.580	-0.266	0.384	0.489
Shandong	0.010	0.041	0.800	0.060	0.060	0.323	-0.065	0.054	0.234
Fujian	0.205	0.056	0.000	0.285	0.081	0.000	0.123	0.074	0.096
Hunan	0.335	0.088	0.000	0.366	0.117	0.002	0.232	0.133	0.083
Henan	-0.207	0.063	0.001	-0.184	0.085	0.030	-0.366	0.093	0.000
Guangdong	0.788	0.048	<.0001	0.809	0.069	<.0001	0.722	0.066	<.0001
Hainan	0.388	0.061	<.0001	0.475	0.089	<.0001	0.235	0.083	0.005
No. of obs.	1207			630			573		
Adj. R2	0.464			0.490			0.544		
F-stat	24.700			12.760			14.330		

The base case consists of middle-school educated, hourly-paid, "workers" who are employed in the food industry in

Jiangsu Province and are not Party members.

Table A3--Parsimonious Model
(Log) Monthly Income Regressions: State-Owned Enterprises

Variable	Pooled			Men's			Women's		
	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|
Intercept	4.837	0.032	<.0001	4.847	0.043	<.0001	4.817	0.049	<.0001
3 years primary	-0.035	0.053	0.504	-0.062	0.062	0.322	0.055	0.109	0.610
6 years primary	-0.008	0.033	0.810	-0.001	0.040	0.983	-0.057	0.061	0.358
Junior Technical School	0.071	0.032	0.026	0.065	0.041	0.119	0.074	0.050	0.142
Senior Middle School	0.019	0.017	0.262	0.018	0.024	0.457	0.022	0.023	0.342
Vocational Senior Sch	0.015	0.041	0.714	0.129	0.064	0.045	-0.081	0.051	0.110
TV/Night College	0.108	0.026	<.0001	0.094	0.034	0.006	0.121	0.038	0.002
Specialized High Sch	0.066	0.021	0.002	0.084	0.029	0.004	0.023	0.031	0.444
Specialized College	0.153	0.024	<.0001	0.140	0.031	<.0001	0.159	0.037	<.0001
University Graduate	0.239	0.028	<.0001	0.242	0.035	<.0001	0.206	0.048	<.0001
Post-Graduate Studies	0.177	0.142	0.214	0.044	0.196	0.822	0.288	0.203	0.156
Total years worked	0.030	0.003	<.0001	0.035	0.004	<.0001	0.024	0.005	<.0001
Years worked squared	0.000	0.000	<.0001	0.000	0.000	<.0001	0.000	0.000	0.133
Years at current firm	0.005	0.003	0.112	0.002	0.004	0.551	0.010	0.005	0.060
Years at firm squared	0.000	0.000	0.181	0.000	0.000	0.550	0.000	0.000	0.152
Shanxi	-0.146	0.028	<.0001	-0.134	0.037	0.000	-0.157	0.041	0.000
Hebei	-0.171	0.034	<.0001	-0.195	0.044	<.0001	-0.130	0.051	0.011
Jilin	-0.272	0.030	<.0001	-0.269	0.041	<.0001	-0.264	0.043	<.0001
Anhui	-0.133	0.040	0.001	-0.196	0.050	<.0001	0.035	0.071	0.625
Shandong	0.009	0.038	0.817	-0.046	0.052	0.382	0.095	0.056	0.089
Fujian	0.111	0.034	0.001	0.078	0.046	0.087	0.167	0.050	0.001
Hunan	-0.041	0.037	0.268	-0.043	0.053	0.411	-0.008	0.051	0.869
Henan	-0.291	0.028	<.0001	-0.289	0.037	<.0001	-0.292	0.042	<.0001
Guangdong	0.424	0.032	<.0001	0.429	0.042	<.0001	0.415	0.049	<.0001
Hainan	0.090	0.032	0.004	0.036	0.041	0.382	0.187	0.048	<.0001
Sichuan	-0.099	0.027	0.000	-0.108	0.036	0.003	-0.074	0.040	0.065
No. of obs.	2778			1697			1076		
Adj. R^2	0.396			0.364			0.429		
F-stat	86.020			45.980			39.320		

The base case consists of middle-school educated workers in Jiangsu Province.

Table A3, continued

(Log) Monthly Income Regressions: Collectively-Owned Enterprises

Variable	Pooled			Men's			Women's		
	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|
Intercept	4.826	0.040	<.0001	4.882	0.060	<.0001	4.758	0.054	<.0001
3 years primary	-0.031	0.076	0.682	-0.028	0.100	0.779	-0.046	0.115	0.691
6 years primary	-0.022	0.037	0.547	-0.043	0.047	0.363	-0.016	0.065	0.810
Junior Technical School	0.064	0.044	0.142	0.025	0.070	0.726	0.125	0.056	0.025
Senior Middle School	0.053	0.019	0.007	0.036	0.030	0.226	0.077	0.026	0.003
Vocational Senior Sch	0.055	0.043	0.206	-0.044	0.070	0.532	0.135	0.054	0.013
TV/Night College	0.173	0.032	<.0001	0.130	0.042	0.002	0.195	0.049	<.0001
Specialized High Sch	0.121	0.026	<.0001	0.097	0.037	0.009	0.135	0.037	0.000
Specialized College	0.188	0.031	<.0001	0.137	0.043	0.001	0.236	0.045	<.0001
University Graduate	0.275	0.042	<.0001	0.234	0.055	<.0001	0.271	0.064	<.0001
Total years worked	0.021	0.004	<.0001	0.021	0.005	<.0001	0.022	0.006	0.000
Years worked squared	0.000	0.000	0.175	0.000	0.000	0.222	0.000	0.000	0.213
Years at current firm	0.008	0.004	0.060	0.007	0.005	0.214	0.014	0.007	0.031
Years at firm squared	0.000	0.000	0.305	0.000	0.000	0.443	0.000	0.000	0.140
Shanxi	-0.195	0.032	<.0001	-0.191	0.048	<.0001	-0.209	0.042	<.0001
Hebei	-0.159	0.041	<.0001	-0.148	0.059	0.012	-0.193	0.055	0.001
Jilin	-0.241	0.035	<.0001	-0.191	0.053	0.000	-0.298	0.046	<.0001
Anhui	0.046	0.064	0.470	0.084	0.089	0.344	-0.021	0.091	0.816
Shandong	0.082	0.039	0.036	0.066	0.058	0.256	0.098	0.052	0.059
Fujian	-0.108	0.044	0.015	-0.076	0.065	0.237	-0.165	0.060	0.006
Hunan	-0.205	0.039	<.0001	-0.202	0.058	0.001	-0.225	0.053	<.0001
Henan	-0.290	0.038	<.0001	-0.262	0.056	<.0001	-0.315	0.050	<.0001
Guangdong	0.655	0.050	<.0001	0.736	0.071	<.0001	0.539	0.074	<.0001
Hainan	0.085	0.043	0.051	0.031	0.058	0.593	0.178	0.071	0.012
Sichuan	-0.104	0.033	0.002	-0.079	0.049	0.105	-0.151	0.044	0.001
No. of obs.	2179			1122			1048		
Adj. R2	0.357			0.348			0.324		
F-stat	51.350			30.000			21.890		

The base case consists of middle-school educated workers in Jiangsu Province.

Table A3, continued
(Log) Monthly Income Regressions: Joint Venture Enterprises

Variable	Pooled			Men's			Women's		
	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|	Parameter Estimate	Standard Error	Pr > |t|
Intercept	5.012	0.052	<.0001	4.967	0.074	<.0001	5.091	0.073	<.0001
3 years primary	-0.357	0.142	0.012	-0.022	0.215	0.920	-0.772	0.201	0.000
6 years primary	-0.002	0.078	0.977	-0.067	0.102	0.512	0.090	0.119	0.448
Junior Technical School	-0.064	0.080	0.430	0.072	0.121	0.553	-0.192	0.103	0.062
Senior Middle School	0.015	0.033	0.646	-0.001	0.049	0.982	0.016	0.044	0.721
Vocational Senior Sch	0.017	0.057	0.761	-0.014	0.093	0.881	0.016	0.070	0.823
TV/Night College	0.093	0.052	0.070	0.031	0.066	0.639	0.113	0.084	0.178
Specialized High Sch	0.071	0.048	0.139	0.058	0.066	0.378	0.068	0.069	0.325
Specialized College	0.115	0.051	0.023	0.059	0.068	0.385	0.132	0.075	0.078
University Graduate	0.272	0.055	<.0001	0.250	0.069	0.000	0.185	0.093	0.047
Post-Graduate Studies	0.344	0.142	0.016	0.212	0.165	0.200	0.404	0.281	0.151
Total years worked	0.029	0.005	<.0001	0.051	0.007	<.0001	-0.005	0.009	0.620
Years worked squared	0.000	0.000	0.023	-0.001	0.000	<.0001	0.001	0.000	0.086
Years at current firm	-0.010	0.006	0.090	-0.022	0.008	0.004	0.021	0.010	0.029
Years at firm squared	0.000	0.000	0.378	0.001	0.000	0.023	-0.001	0.000	0.022
Shanxi	0.045	0.057	0.422	0.065	0.080	0.412	-0.004	0.078	0.957
Hebei	0.091	0.064	0.155	0.061	0.088	0.489	0.104	0.090	0.246
Jilin	-0.368	0.053	<.0001	-0.205	0.080	0.010	-0.459	0.068	<.0001
Anhui	-0.185	0.102	0.071	-0.215	0.111	0.054	-0.104	0.395	0.791
Shandong	-0.003	0.041	0.942	0.045	0.060	0.455	-0.067	0.055	0.221
Fujian	0.227	0.055	<.0001	0.294	0.079	0.000	0.172	0.073	0.019
Hunan	0.321	0.081	<.0001	0.453	0.103	<.0001	0.056	0.130	0.668
Henan	-0.217	0.061	0.000	-0.177	0.082	0.031	-0.339	0.091	0.000
Guangdong	0.777	0.046	<.0001	0.785	0.064	<.0001	0.742	0.066	<.0001
Hainan	0.425	0.059	<.0001	0.436	0.087	<.0001	0.376	0.078	<.0001
No. of obs.	1207			630			573		
Adj. R2	0.421			0.419			0.432		
F-stat	37.470			19.860			19.140		

The base case consists of middle-school educated workers in Jiangsu Province.

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