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Economic Reform and Changing Patterns of Labor Force Participation in Urban and Rural China

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Abstract

In this project, we employ data from the Chinese population censuses of 1982, 1990, and 2000 to examine reform-era changes in the patterns of male and female labor force participation and in the distribution of men's and women's occupational attainment. Very marked patterns of change in labor force participation emerge when we disaggregate the data by age cohort, marital status, sex, and rural/urban location. Women have decreased their labor force participation more than men, and urban women much more than rural women. Single young people in urban areas have decreased their labor force participation to stay in school to a much greater extent than single young people in rural areas. The urban elderly have decreased their rates of labor force participation while the rural elderly have increased theirs. We also find evidence of the feminization of agriculture.

I.   Introduction

In the late 1970s the Chinese leadership initiated a set of economic reforms to counteract the problems of economic stagnation, low productivity, and disguised unemployment in both rural and urban sectors. These reforms started a gradual transition process to a market economy that resulted in two decades of remarkable change. At the macroeconomic level improvements in income and welfare were rapid and sustained—real per capita GDP increased more than fivefold from 1978 till 2000 (NBS, Table 3-4, p.58) and hundreds of millions were lifted out of absolute poverty. However the consequences of reform have affected different groups unevenly. The gender wage gap increased over the reform period (Maurer-Fazio, Rawski, and Zhang, 1999; Hughes and Maurer-Fazio, 2002; Maurer-Fazio and Hughes, 2002) and urban income inequality widened (Meng et.al, 2005). The urban/rural income gap narrowed during the first five years of reform but has since widened (Ravallion and Chen, 2004). The eastern seaboard provinces developed earlier and at a much faster rate than the interior and western provinces (Chen and Fleisher 1996, Fleisher and Chen 1997, Gustafsson and Li 1998, Lee 2000) and thus contributed to regional inequality.

In this paper, we are concerned about the effects of China's economic reforms on labor market developments, in general, and in differences in men's and women's experiences in particular. The labor markets we observe in contemporary China emerged out of the highly centralized and tightly controlled labor allocation system of the pre-reform period. They continue to evolve. Institutional barriers to labor mobility have been relaxed and market forces unleashed in both urban and rural areas (Maurer-Fazio, 1995 and Li *et.al.*, forthcoming).

In the pre-reform period, the state routinely allocated urban workers to enterprises without consideration of either workers' or manager's preferences.   In the rural sphere, people were powerless to choose their occupations–they were assigned to work in collective agriculture. The state's restrictions on rural-to-urban migration forced rural residents to depend on their production teams for income and consumption. In the late 1970s and early 1980s, the implementation of a household responsibility system that contracted land to households led to a rapid decollectivization of agriculture. Profit considerations began to drive household decisions and exert great pressure for change in the labor allocation system. When the reforms began to affect urban industry in the early 1980s, profit-motivated managers also began to demand more flexible and efficient labor arrangements. They gained a lot of leeway in determining the

composition of their workforces and in rewarding productivity. Over time workers too gained the right to choose where and for whom they would work.

In this paper we focus on the consequences of these changes to the labor system on one observable aspect of the labor market behavior of women and men in the Chinese economy. Of particular interest here, is the question of whether economic liberalization differentially affects the labor force participation of men and women. To explore this question we employ Chinese population census data from 1982, 1990, and 2000 to examine changes over time in patterns of male and female labor force participation and also in the distribution of occupational attainments.

III. Labor Force Participation Rates

We expect China's economic reforms to influence labor force participation in multiple and complex ways. In once sense, economic growth and concomitant wage increases should lead to increases in labor force participation rates (LFPR) as the opportunity cost of not working rises. Thus, one of our theoretical expectations is to see higher levels of labor force participation for both men and women between 1982 and 2000, as the gains from such participation increase.

However, by 1982 Chinese national LFPR were already very high in international comparison, especially for women. Our own findings from the 1982 census data reveal that the LFPR for Chinese men and women in that year were 86 and 71 percent, respectively. In contrast, the LFPR for U.S. men and women in the same year were 77 and 53 percent, respectively (Szafran, Table 1, p.33).[1] Thus, the scope for economic growth to draw significantly higher proportions of workers into the labor force was limited. [2]

From a household perspective, the rising incomes of spouses and/ or other household members could be viewed as an income effect that would allow some individuals (typically women) to withdraw from the labor force to concentrate effort in home production. When

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[1] LFP rates for men and women in Japan in 1982 were 80 and 48 percent, respectively. Similarly, the figures for South Korea were 71 and 44 percent. In 1982, Brazil had LFP rates of 83 and 30 percent for men and women, while Pakistan had rates of 87 and 13 percent in 1983. France had rates of 69 and 42 percent for men and women in 1983. (ILO Yearbook of Labor Statistics 1983).

[2] We expect, however, that the inefficiencies in resource allocation of the pre-reform era provided scope for engendering intensive growth through more efficient use of the existing labor force.

spouses' earning power is sufficiently high, families may feel able to meet their income goals with only one income, freeing women from the need to work outside the home.[3] Labor force participation for women could actually decline as a result of this phenomenon. Such a trend, however, might be dampened by China's birth planning policies, implemented in the late 1970s, which reduced total fertility rates and thus potentially affected the value of time spent in home production.

Economic growth and increasing wages also raise the opportunity costs to young people of staying in school. We define the labor force here as those 15 years of age and older and thus speculate that we might observe an increase in the labor force participation among young people if they withdraw from school to enter the labor force. However, given the decentralization of wage-setting and observed increases in returns to education (Maurer-Fazio 1999, Zhang et. al forthcoming), the increased benefits to educational investments for young people could have the opposite effect and lead to a reduction in the labor force participation of the young. The effects of the reforms on the LFPR of the young, thus remains an empirical question.

The restructuring of the state-owned sector in the latter half of the 1990s led to the lay off of many millions of urban workers. Extended periods of lay off led, in turn, to withdrawal from the labor force of many of these workers and discouragement from labor-force entry for others (Cai, 2004). With the relaxation of the protections afforded workers in the socialist period, some managers may have begun to indulge prejudices against women by refusing to hire them or laying them off disproportionately. If such practices were widespread, women could become 'discouraged workers' and withdraw from the labor force at a greater rate than men. In the following sections, we examine the determinants of labor force participation using sample data from the Chinese population censuses of 1982, 1990, 2000.

IV.   Data Description

The data employed in this project are drawn from the three most recent population censuses of China. Our analysis is based on one percent micro data samples of the 1982 and

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[3] An increase in the spouse's income is seen as an increase in a woman's non-wage income. Such increases generate a pure income effect, reducing the woman's equilibrium hours of work and increasing the likelihood of labor force exit.

1990 censuses and a 0.095 percent micro data sample of the 2000 census.[4] Since we focus on labor issues, we further sample our data to include only those age 15 and above.

Individuals are considered to be in the labor force if they had a job on the day of the census or if they were unemployed and looking for work at that time. We equate those classified as "waiting for work" in the earlier censuses as seeking employment and thus part of the labor force.

The definitions used in each of the three censuses to classify individuals as urban or rural vary. We employ two different methods of defining individuals as residing in urban or rural areas in our data. In the 1982 and 1990 samples we base our definition of rural and urban on the administrative codes that reveal where an individual resides. The first two digits of this code indicate province, the third and fourth digits indicate prefecture, and the fifth and sixth digits indicate whether the location is considered as an urban "district" or county. For the 1982 and 1990 censuses we use the administrative codes to classify individuals dwelling in counties as rural and those in districts as urban. This procedure yields a figure of 25.25 percent urban for the entire population in 1990 slightly under the figure of 26.41 percent urban reported in official statistics based on the 1990 census.[5] The data released in the 0.095 percent sample of the 2000 census contain only the first four digits of the administrative code, precluding use of the same categorization scheme. In any event, the 2000 census uses a much newer and more sophisticated set of criteria to define urban areas (Chan and Hu, p. 54).[6] The 2000 sample reports individuals as residing in "city", "town", or "rural" areas. We aggregate those in cities and towns into an urban category constituting 36.9 percent of the population, all others are classified as rural.[7]

V.   Results and Discussion

Aggregate labor force participation rates by sex and location from the three censuses are shown in Figure 1 and Appendix Table A1. Very few substantial changes are apparent from the aggregate figures. Total labor force participation and male labor force participation rates decline slightly from 1982 to 2000 with the former dropping from 78.7 to 76.9 percent and the latter

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[4] 1982 and 1990 samples were obtained from the Data User Services of China Population Information and Research Center.
[5] NBS, China Population Statistics Yearbook, Table 4-6, p.352
[6] These criteria are based on the population density and whether the area is a seat of local government or is contiguous to an area where the government is located.
[7] We recognize that these definitions of urban and rural are not consistent over time. They are, however, the best that we can do with our existing data sources.

dropping from 86.5 to 83 percent. Rural labor force participation rises somewhat, from 78.9 to 80.6 percent, while female labor force participation shows no clear pattern, varying between a low of 70.6 percent and a high of 72.6 percent. The one very substantial change in aggregate labor force participation is a sharp drop in urban labor force participation from 77.8 to 65.9 percent.

Figure 1: Labor Force Participation By Sex and Location
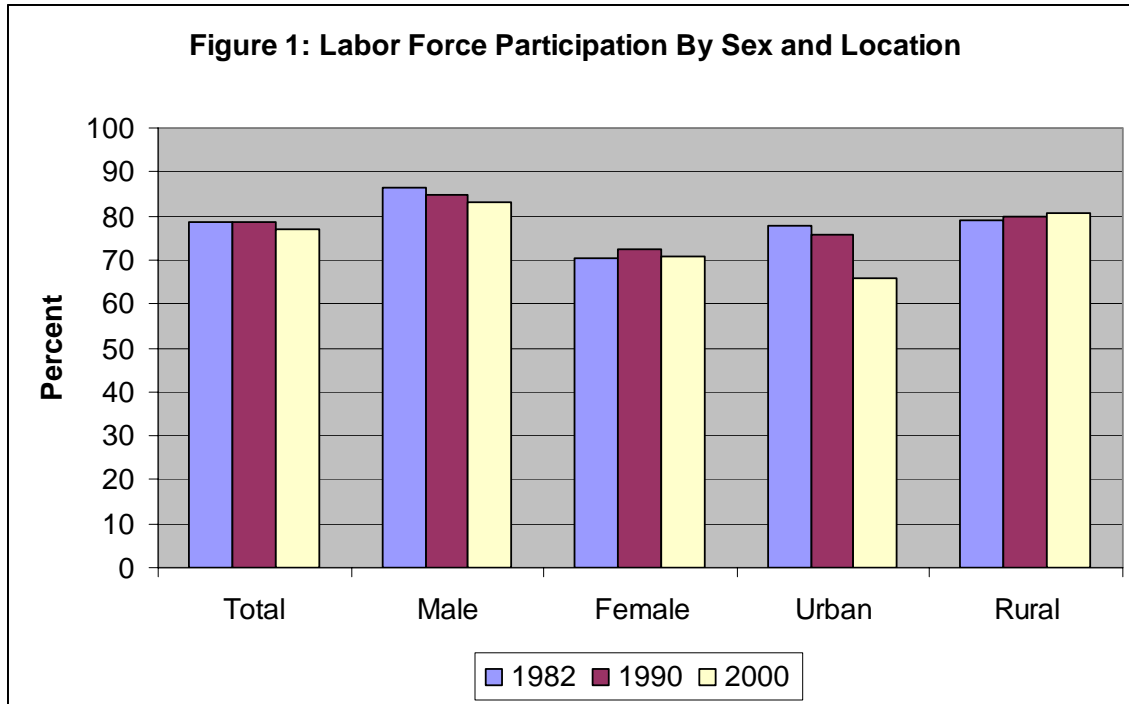
Between the 1990 and 2000 censuses alone, urban labor force participation dropped by almost 10 percentage points. The question arises of course as to what extent this decline in labor force participation should be attributed to a positive income effect associated with very real increases in per capita income over the period and to what extent is should be attributed to the discouraged worker effect arising from the massive number of layoffs that took place from the mid-1990s on as state-owned enterprises shed redundant workers as part of their struggle to improve efficiency and profitability.

The *hukou,* or household registration, system divides Chinese society into two groups—privileged state-supported urban (non-agricultural) elites and much less privileged self-reliant rural (agricultural) residents (Chan and Zhang 1999, Fan 1999). *Hukou* registration is not a matter of choice—accidents of birth rather than personal preferences determine *hukou* status and *hukou* status greatly influences economic opportunities. Given the legacy of the hukou system and the differences between both the work environments and institutional structures of urban

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areas and those of the Chinese countryside, we explore the patterns of labor force participation of urban and rural residents separately in the following analysis.

It is well established theoretically, and supported empirically, that labor force participation rates around the world are also influenced by age, gender and marital status. At younger ages, labor force participation will vary with the availability of education and training. Where education and training is unavailable or the returns to these activities are low, labor force participation in the youngest cohorts is expected to be comparable to that of older workers. However, where education and training are both available, with high returns, labor force participation amongst the youngest workers should be relatively low, as many members of this cohort remain in school.

[Insert Table 1 here]

Table 1 exhibits labor force participation rates by age and sex for several developed and developing countries. Only Pakistan shows a male participation rate of over 75 percent for the youngest cohort of males. This could be the result of the lack of widespread secondary and postsecondary education in that country. China's Asian neighbors, South Korea and Japan, have extremely low participation rates for the youngest cohort of both men and women. Education is highly valued in these countries, and the returns high, so most young men and women continue school through secondary and even postsecondary education.

Female labor force participation is generally lower than that of males for a variety of familiar reasons. Women are more likely to be responsible for child-rearing activities, keeping them out of the labor force. Women may also have lower rates of participation because of occupational segregation and discrimination. Wage and job discrimination may lead them to withdraw from the labor force. All of the countries in Table 1 show lower female than male participation rates, at least for the 25-64 age cohorts, considered to be the most important years for earning income.

Marital status can also influence labor force participation for both men and women. Married men and women may leave school earlier than their unmarried counterparts in order to start work. In most countries, married women with young children tend to have especially low participation rates. Married men tend to have higher participation rates than married women, especially when children are present. For example, in the U.S. in 2002, married women had a

participation rate of 61 percent, while their male counterparts had a participation rate of over 77 percent (US Bureau of the Census).

Given the influences discussed above, in the sections that follow, we disaggregate and examine labor force participation rates by residence (urban or rural), gender, marital status, and age cohort.

1. Urban Areas

a. Female Urban Residents

To better understand the causes of the sharp drop in urban labor force participation over the course of a single decade, we examine the labor force participation of particular subgroups separately. Figure 2 reveals the labor force participation rates for urban, unmarried[8] women stratified by age cohort. A number of characteristics here are noteworthy. First, the overall labor force participation rate for unmarried women drops quite dramatically over the period from 62.7 percent in 1982 to 47.3 percent in 2000. Although the labor force participation rates decline for each age cohort, the trend is strongest and stands out the most for the 15-22 age cohort whose rates drop by a third from 72.7 percent in 1982 to 46.4 percent in 2000. The returns to education for young people and new-labor force entrants increased substantially over this period as a result of economic liberalization (Maurer-Fazio, 1999) and the numbers and proportion of young single women in school increased. In the 1982 census data, of the cohort of single women age15-22 who were not working, 67.6 percent reported being in school, this proportion rose rapidly to 75.4 percent and 82.3 percent in the 1990, and 2000 censuses, respectively[9].

Second, as both Figures 2 and 3 reveal, the difference in the level of labor force participation rates in all years for women between women aged 50 and above and those younger than 50 is quite remarkable. Women in formal state and collective sector jobs who have worked at least 10 years are eligible for full pensions at age 50 (West, 1999). Urban women, whether voluntarily taking advantage of the opportunity to retire with a pension or involuntarily being forced into retirement, are leaving the labor force in large numbers after turning 50. As Table 2, which is based on data for both married and unmarried women, reveals, the occupational distribution of women in the 50-65 age group who don't drop out of the labor force differs quite a bit from that of urban women in general. Many of the older women who continue to work,

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[8] The category "unmarried" includes never married, divorced, and widowed individuals.
[9] Authors' calculations based on the 1982, 1990, and 2000 census samples.

report working in agriculture— presumably, women who are not pension eligible. A large fraction of production line workers disappear from the labor force after turning 50. Older women with administrative and managerial jobs don't seem to retire as early as others—they make up a greater percentage of those who continue to work past age 50 than is typical for urban women.

Figure 2: Labor Force Participation, Urban, Unmarried Females
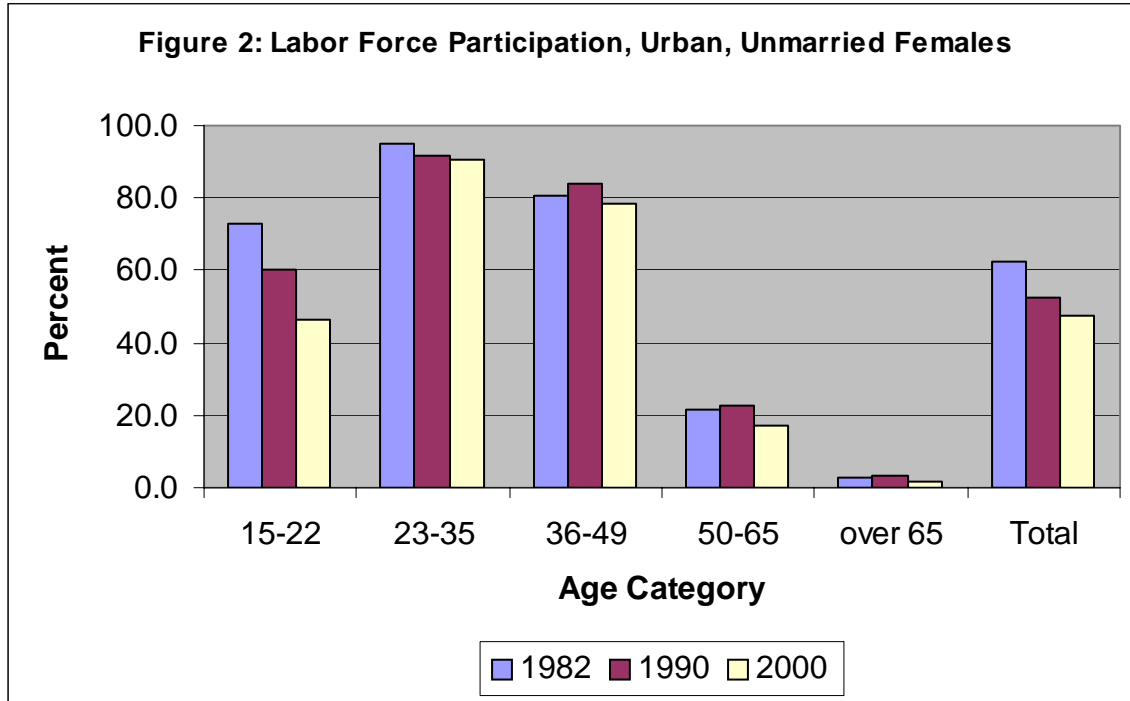
Third, unmarried urban women in the 23-35 and 36-49 age cohorts do not show a rapid decline in labor force participation over the 1982-2000 period. The participation of the former falls by 4.6 percentage points, while that of the latter demonstrates no clear pattern. The decline in the participation of older single women is also muted—their rates drop by four percentage points over the period.

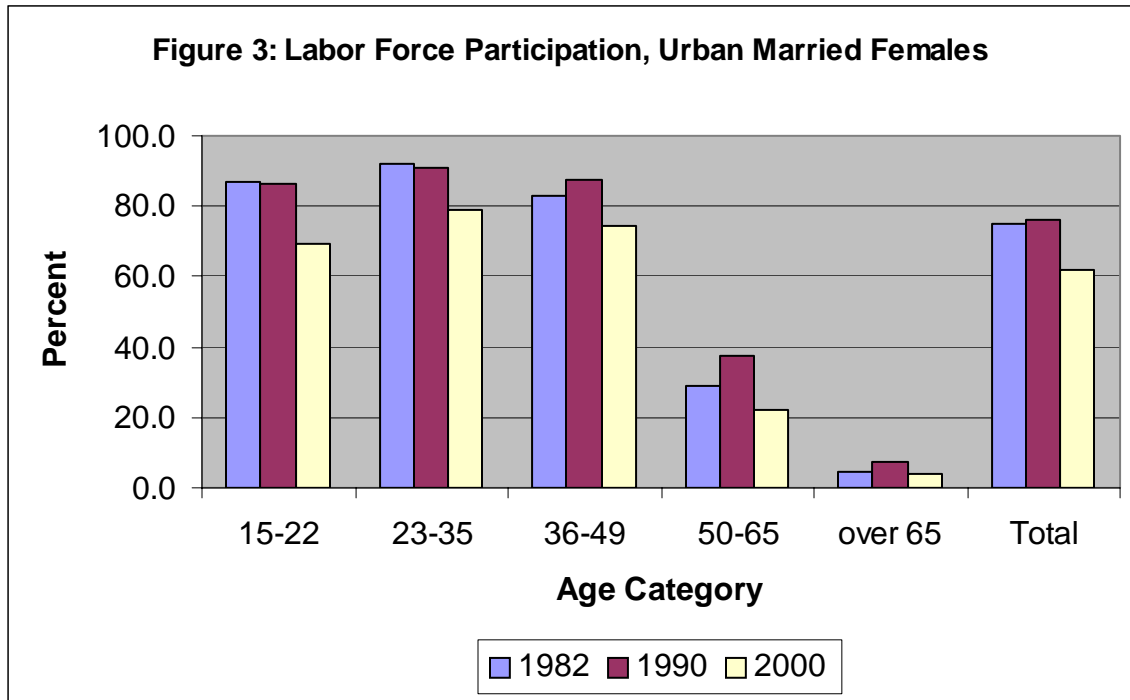**Figure 3: Labor Force Participation, Urban Married Females**

Figure 3 reveals the labor force participation of married urban women by age cohort. Married urban women exhibit a very different pattern of labor force participation than both their unmarried female and married male counterparts (discussed below). These women exhibit substantial declines in labor force participation between 1990 and 2000 across all age categories. Such an across the board decline is not seen for any other group of urban residents. Such a consistent pattern among married women, unmatched by men or unmarried women, suggests that an income effect may explain this pattern. If earnings growth among urban married men has allowed substantial numbers of their spouses to either leave, or not even enter, the labor force, this would represent a major demographic shift among urban Chinese women. The overall labor force participation rate in 2000 for this group of Chinese women, 62 percent, is comparable to the U.S. female labor force participation rate of 60 percent[10] for that year.

[Place Table 2: Urban Women's Occupational Distribution Here]

It seems tempting to offer an alternative explanation for the decrease in labor force participation of married women--that women were both laid off[11] and entered the ranks of

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[10] Calculated from Table 1 of ILO *Yearbook of Labor Statistics 2001*.

[11] In the mid-1990s, the Chinese leaders' concerns about state-sector inefficiency began to override concerns about dismissals and layoffs. They developed a policy of putting workers on *xiagang*, a form of layoff in which workers were placed on inactive status and sent home with small stipends. The effects were profound. Official statistics

discouraged workers in disproportionately high numbers. In the years just prior to the implementation of *xiagang* policies women were forced into early retirement in higher proportions than men, and older women in higher proportions than younger women (Maurer-Fazio et.al.) Evidence from a 1999-2000 survey of laid-off workers suggests, after controlling for productive characteristics such as education, job training, health, years of work experience and other ascriptive characteristics, that gender remained a significant factor in determining who was chosen within firms for layoff. Ceteris paribus, men were 2.5 percent less likely to be laid off than women (Maurer-Fazio, forthcoming). However, the census data reveal that unmarried women of prime working age, that is those ages 23-35 and 36-49, demonstrate only modest declines in their labor force participation rates (2.7 and 4.6 percentage points, respectively), while married women of the same age groups exhibit much bigger decreases in their labor force participation rates (12.9 and 8.7 percentage points, respectively).

Multivariate analysis of urban women's labor force participation reveals a very marked change in the effect of marital status on labor force participation over the reform period. Appendix Table A2 contains the results of probit regressions for urban women's labor force participation that control for marital status, educational level, age, ethnicity, and province of residence. [12] In 1982, marital status had no statistically significant measured effect on labor force participation. By 1990, marital status had a strongly significant effect—being married, all else constant, raised a women's probability of being in the labor force by 8.9 percent. The 2000 census data reveal a remarkable change from 1990—married urban women were 1.2 percent less likely to be in the labor force than their unmarried counterparts. This result is consistent with the income effect posited above.

According to these probit results, the effects of educational attainment on labor force participation of urban women are changing. In 1982, all else equal, women who had only primary school educations and those who were illiterate were 20-30 percent less likely to be in

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suggest that by the end of 2000 a total of 32.9 million workers had been laid-off (put on *xiagang*) and that 9.1 million workers still remained in the ranks of the laid-off. (*Zhongguo Laodong Tongji Nianjian, 2000, 2001*)

[12] For ease of exposition, the results for all probit models discussed below are presented as changes in the probability of labor force participation, and *not* the probit regression coefficient. For binary variables, the table entries represent the discrete change in probability as the binary independent variable is toggled from zero to one. For continuous variables such as age, the table entries are the change in the probability of labor force participation resulting from a one unit change in the independent variable. All probabilities are calculated at the sample mean.

the labor force than those with junior middle school educations. Likewise, those with post-secondary educations were 27 percent less likely to be in the labor force than junior middle school graduates. By 2000, those with the most and the least education were approximately six percent more likely to be in the labor force than those with junior middle school.

b. Male Urban Residents

Figure 4 reveals the labor force participation rates of unmarried urban males across the three censuses. For this group, the decline in labor force participation is especially pronounced for the youngest and the two oldest age cohorts. The labor force participation rates of 15-22 year old single men declined from 70.6 percent in 1982 to 43.8 percent in 2000. As was the case with single women, the decline in labor force participation here is matched with an increase in the proportion and numbers of young men staying in school. In 1982, 73.8 percent of the 15-22 year old, single urban men who were not working reported being in school. This proportion rose to 80.2 and 81.7 percent in the 1990, and 2000 censuses, respectively.[13]

Figure 4: Labor Force Participation, Urban, Unmarried Males
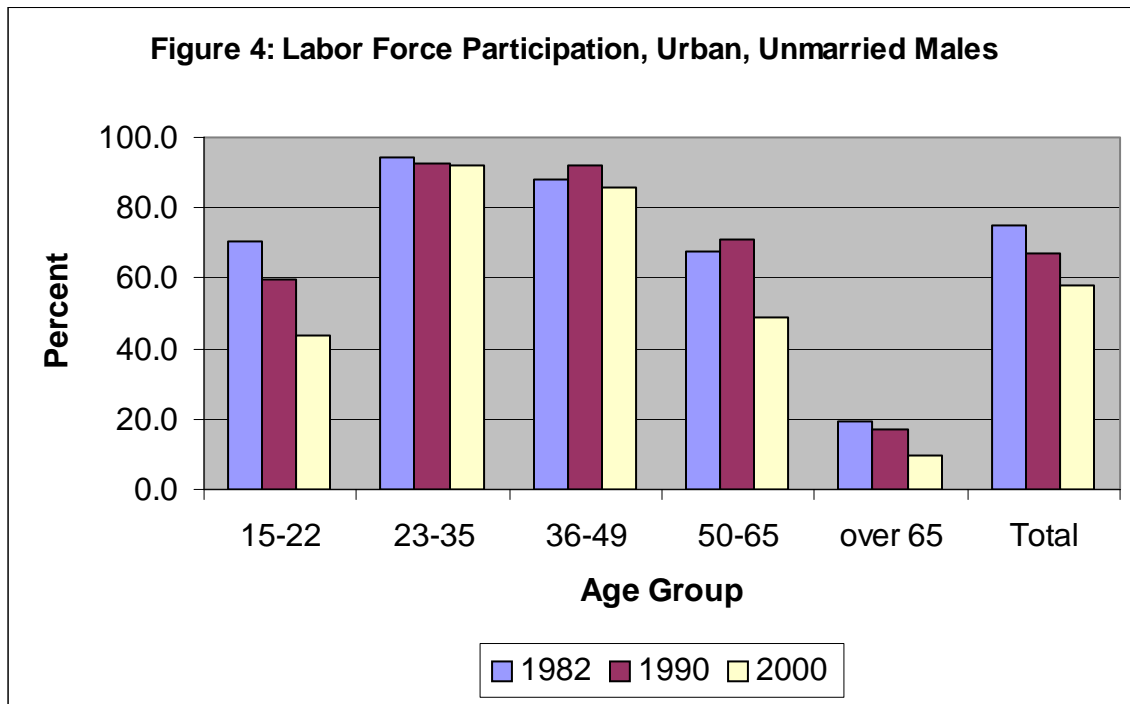
For the older urban men, the decline may be due in part to involuntary lay-offs and in part to voluntary and semi-voluntary retirements. Some fraction of these men who've been laid off and fail to find work are likely to become discouraged workers and disappear from the labor force.

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[13] Authors' calculations based on the 1982, 1990, and 2000 census samples.

Displacement from assigned jobs may also lead some members of these age cohorts to retire early, thus also exiting the labor force.

In addition to workers who may have been forced into early retirement, a large number of urban state workers became eligible over the course of the reforms to retire with lifetime pensions. When the state pension system was established in the 1950s, men qualified for retirement at age at age 60 after 20 years of service. The years of service required to qualify for a pension was reduced to only 10 years in 1978 (West, 1999). By 1982 there were 11.1 million official retirees—this number increased to 23 million by 1990 and 38.8 million by 2000. As the number of retirees increased, the number of workers per retiree dropped from 10.1 in 1982 to 6.1 in 1990 to 3.5 in 2000.[14] Family planning policies and declining mortality rates have also accelerated the aging of the Chinese urban population and thus contributed to an increase in number of retirees relative to the working population with a concomitant decrease in the labor force participation rates.

The marked decline in labor force participation for older men is similar for both urban married and unmarried men (compare Figures 4 and 5). Between 1990 and 2000, labor force participation among married men age 50-65 fell by one-quarter, from 75 percent to 55 percent. In the 1982 census, 86.8 percent of the married men of this age cohort who were not working described themselves as having retired or resigned.[15] In the 2000 census there were more than twice as many men of this age and marital status not working. Of these, 83.1 percent describe themselves as retired or resigned and a further 4.4 percent describe themselves as having lost jobs and searching for new ones, that is, remaining in the labor force.

Labor force participation of married men over 65 fell by more than half, from 25 percent to just under ten percent. This participation rate is extremely low by international standards, even when compared to both developed and developing countries. Referring again to Table 1, men over 65 have participation rates of 30 to 40 percent in Asian neighbors Japan and Korea, and over 50 percent in Pakistan. A participation rate of under ten percent in 2000 is even lower than that of the United States, where men over 65 had a participation rate of 17 percent in 2000.

Younger, married, urban males have labor force participation rates that are uniformly high--never falling below 95 percent in any year for any age group under 50. Interestingly,

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[14] Tables 9-1, *Zhongguo laodong tongji nianjian* 2000 & 2001.

[15] Authors' calculations based on 1982, 1990, and 2000 census samples.

married urban males age 15 to 22 are not staying in school in increasing numbers as are their unmarried counterparts, but rather are entering the labor force at an early age. Very few young married men are in school--marriage seems to more or less dictate labor force participation for this group.

Multivariate probit analysis of urban men's labor force participation reveals a very significant, strong, positive, and increasing effect of marriage on labor force participation over the reform period. (See Appendix Table A3.) After controlling for level of education, age, ethnicity, and province of residence, being married increased an urban man's probability of being in the labor force by 6.7, 10.4, and 13.5 percent in 1982, 1990, and 2000, respectively.

Figure 5: Labor Force Participation, Urban, Married Males
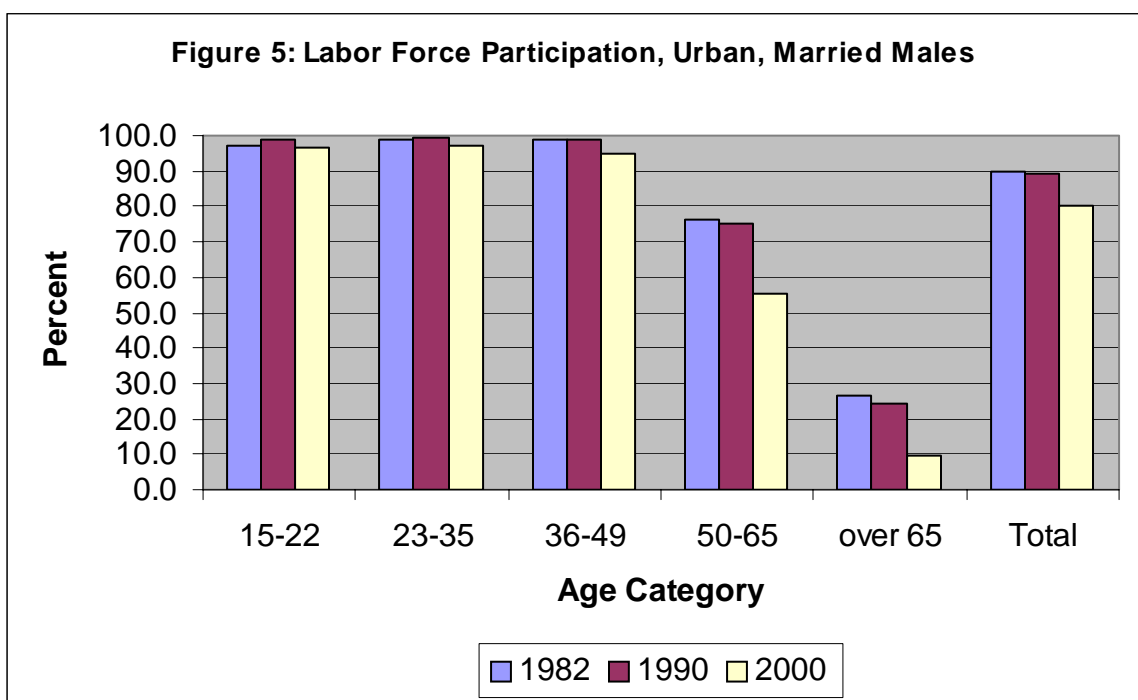
Labor force participation among men in the two oldest groups is far above that of women across all three censuses. This effect is to be expected at least in part for the 50-65 age cohort due to the institutionally different retirement ages for men and women (age 50 for women and age 60 for men). Part of the explanation for the higher labor force participation rates of men than women in the over 65 age group may be due to the higher life expectancy of women. Clearly women make up a higher proportion of the very old and as such are less likely to be in the labor force.

[Place, Table 3: Men's Occupational Distribution, here]

In comparing the occupational distribution of the 50-65 year old urban men to that of urban men in general, we see (in Table 3) that older men are much less likely to be involved in production line work. They are more likely to have professional and technical, administrative and managerial, and clerical jobs than the general urban population. Older men are also more likely to be involved in agriculture than is the general population of urban men. However, by 2000 in urban areas, the proportion of older working men working in agriculture at 22.5 percent was much lower than the proportion of older women working in agriculture at 44.7 percent.

2. Rural Areas

China's economic reform program began in the countryside with the decollectivization of agriculture, the contracting of village land to households, and the return of family farming. As households became profit oriented, they economized on their use of agricultural labor. Policies implemented throughout the 1980s first allowed farmers to market produce and engage in long distance trade and villages to develop rural industries. They next allowed farmers to work in urban areas (under certain restrictive conditions), and relaxed the restrictions that prohibited privately-owned businesses from hiring workers. The new opportunities created by these policies were rapidly embraced by rural residents. Township and village industry developed at an astounding rate and created over 100 million new jobs between 1978 and 1996 (NBS, 2002). Rural-to-urban migration snowballed with 45 million rural migrants seeking work in urban areas by the mid-1990s. These developments have reportedly led to two differing trends in women's employment patterns. Jacka (1997) claims that in some rural areas with surplus labor, women withdrew from the agricultural labor force and retreated to the traditional realm of the "inside" domain and that in other areas, a feminization of agriculture occurred as men moved into off-farm employment and women took on more and more of the responsibility for agricultural work. Harrel (2000) argues that in the reform era women did not retreat to the "inside" realm but rather continued to participate in agricultural work on family farms. In the following sections of this paper, we examine how these changes have affected labor force participation in rural China.

a. Female Rural Residents

Figure 6 displays labor force participation rates for unmarried, rural women. Here we observe a substantial decline in labor force participation only among the youngest cohort—those age 15-22. Their rate falls from 1982 to 2000 by 20 percent --from 84.3 percent to 67.3 percent. The next cohort, age 23-35, exhibits a very modest decline in participation rates from 95.1 to

92.9 percent while all other cohorts exhibit substantial increases in labor force participation rates. Unmarried rural women, age 35-49, increase their participation by 19 percent over the period and women age 50-65 more than double their participation rates from 23.8 percent in 1982 to 49.3 percent in 2000.

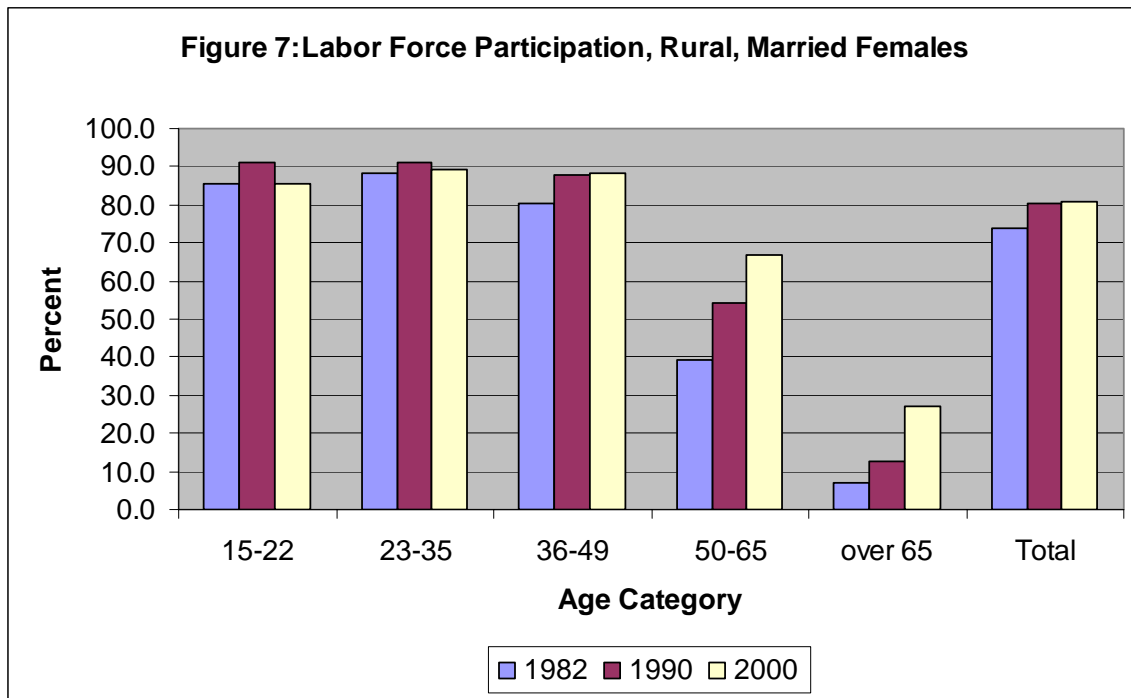Figure 6: Labor Force Participation, Rural, Unmarried Females
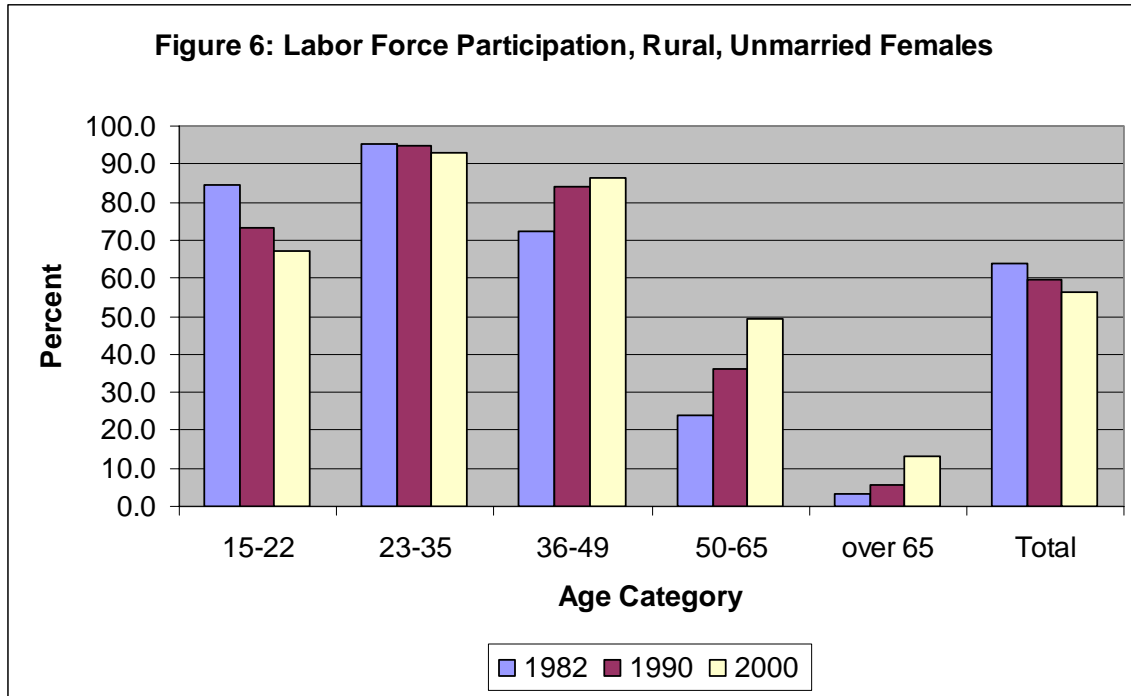
What are the unemployed, amongst this group of unmarried women, doing with their time? In 1982, the share of those in the youngest cohort who were not working that reported themselves as students stood at 69 percent. A further 15 percent reported themselves as occupied with housekeeping, and 8 percent reported themselves as looking for work. By 2000, 75 percent reported being students and only 6 percent reported themselves as being occupied with housekeeping, while 14 percent reported themselves as never having worked but looking for work.[16]

In 1982, 38 percent of unmarried rural women age 23-35 who were not working reported themselves as occupied with housekeeping and 14 percent as unemployed. There is a substantial change in this distribution over time. By 2000, only 24 percent were occupied with

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[16] Authors' calculations based on the 1982, 1990, and 2000 census data.

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housekeeping, while 34 percent reported themselves as never having worked but looking for work and a further 11 percent described themselves as having lost jobs and looking for work.

Figure 7 reveals the labor force participation rates of married rural women. Their trends largely parallel those of unmarried rural women except that here the two youngest age cohorts exhibit consistently high and steady labor force participation across the three censuses. There is a marked increase in labor force participation over time for the 3 older age cohorts. The rates rise by 10 percent for women age 36-49, 70 percent for women age 50-65, and quadruples for women over 65. Figures 6 and 7 lend support to Harrel's claim that rural women have not retreated to women's traditional "inside" realm.

Figure 7: Labor Force Participation, Rural, Married Females

What sorts of work do these older rural women do? Do their increasing rates of labor force participation reflect the migration of men to the cities and the feminization of agriculture? Do they reflect a declining demand for traditional family childcare services as a result of the restrictive birth control policies implemented in the late 1970s? Are older women staying in, or re-entering, the labor force because they have fewer grandchildren to look after? Table 4, which aggregates married and unmarried rural women, reveals that the occupational distribution for rural women age 36-49 and 50-65 has changed very little over the course of reforms.

[Place Table 4 *Distribution of Rural Women's Occupation* here]

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Younger women, however, are moving out of agriculture and into production line work, sales, service, and professional and technical occupations. The share of employed 15-22 year olds working in agriculture dropped from 86 percent to 71 percent from 1982 to 2000. Similarly, the share of 23-35 year olds working in agriculture dropped from 85 to 77 percent. We need to be careful here, a simple comparison of these shares to those of rural men (Table 5), is not sufficient to support or refute hypotheses about the feminization of agriculture. In the 2000 census, migrants who lived in a place for more than six months were enumerated in their new localities. [17] If rural men were migrating in greater numbers to urban areas than women, and being enumerated as urban residents, then simply comparing the shares of men and women in agricultural occupations would be quite misleading.

We, consequently, compare the ratio of the number of rural men working in agriculture to the number of rural women working in agriculture. According to the occupational counts in our census data, there were 114 men working in agriculture for every 100 women in 1982. By 2000 the ratio of men to women with agricultural occupations declined to 106/100. Dis-aggregation of these numbers by marital status and age reveals some interesting and contrasting patterns. Evidence of an increasing feminization of agriculture appears when examining change in the ratio of men to women in agriculture for married rural residents where it moves from 103/100 to 95/100 and for prime aged rural residents (ages 23-49) where it declines from 108/100 to 98/100.

Interestingly, the ratio of men to women in agriculture moves in the opposite direction for the youngest cohort (age 15-22), where it increases from 92/100 to 108/100. Are young women moving into off-farm jobs at a faster rate than men? Over this same time period (1982-2000) the ratio of the population of 15-22 year old men to that of 15-22 year old women in rural areas increased from 1.025 to 1.069. Are young women migrating out of rural areas at greater rates than young men? Or, is this an artifact of the skewed and increasing sex ratio at birth?

b. Male Rural Residents

Figure 8 shows the labor force participation of rural, unmarried males stratified by age. Labor force participation dropped by 14 percent since 1982 for the youngest group. However, this decline is not as pronounced as that of urban unmarried male residents of the same age

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[17] The 2000 census is the first to locally enumerate everyone who resided in a place for more than 6 months, regardless of their hukou (household registration) status. The two earlier censuses did not include any temporary residents without local hukou unless they had resided in that location for more than one year (Chan, 2003).

cohort whose labor force participation declined by 41 percent over the same period.[18] Interestingly, the share of these young rural men who are not working and report themselves as students declined from 84 to 78 percent from 1982 to 2000. In 2000, an additional 15 percent of these young men report themselves as never having worked but looking for work. In 1982 only 5 percent reported themselves as unemployed.[19]

Figure 8: Labor Force Participation, Rural, Unmarried Males
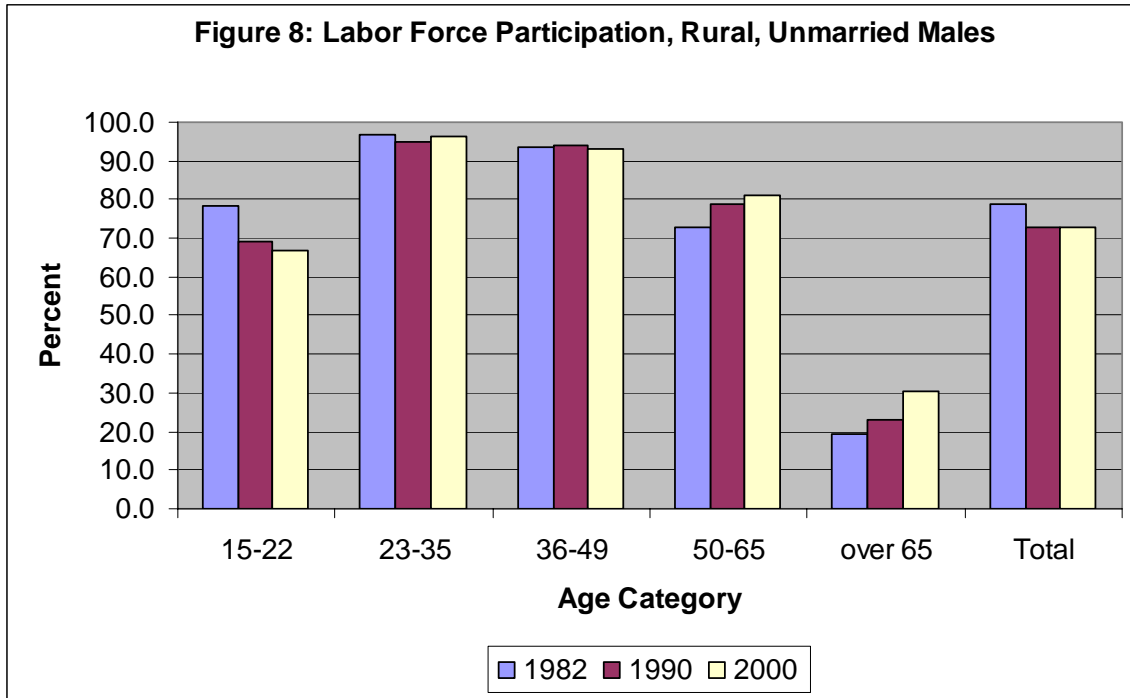
The trend in labor force participation among the two oldest groups differs from that of urban residents. For rural unmarried men ages 50 to 65 and over 65, labor force participation rose 8 and 11 percentage points, respectively, over the three censuses. This trend stands in marked contrast to that of their urban counterparts, whose labor force participation declined sharply during the 1990s.

Labor force participation for married rural men is shown in Figure 9. What is most remarkable about this figure is the extremely high and consistent labor force participation of the three youngest cohorts across all three censuses. In no census does this rate fall below 99 percent. The two oldest groups of these men exhibit increases in labor force participation over time, although the trend is not as pronounced as that of their unmarried rural counterparts.

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[18] Authors' calculations based on Table A1.
[19] Authors' calculations based on 1982, 1990, and 2000 census data.

The increase in labor force participation among older rural men may be a reflection of the migration of younger men and women to urban areas. It seems likely that as younger residents migrated to urban areas, older residents stepped in to do the farm work previously carried out by younger residents. Interestingly, the percentage of men age 50-65 involved in agricultural work does not change over the reform period but stays almost constant at approximately 83 percent. (See Table 5.) There seems to be a significant decline over time in the percentage of men working in agriculture only for the youngest two cohorts. Although the decline is most pronounced for the very young, the proportion involved in agriculture is lowest for those age 23-35.

The probit regressions reported in Table A5 reveal that all else equal, by 2000 rural men with relatively high educations are more likely to be in the labor force than those with junior middle school, a change from the earlier censuses where higher education translated into lower participation rates. The consequences of lower levels of educational attainment on labor force participation are magnified over time for rural men. By 2000, illiterate rural men and those with only primary educations were, all else equal, 6.9 and 9.2 percent more likely to be in the labor force than those with junior middle school educations.

Figure 9: Labor Force Participation, Rural, Married Males
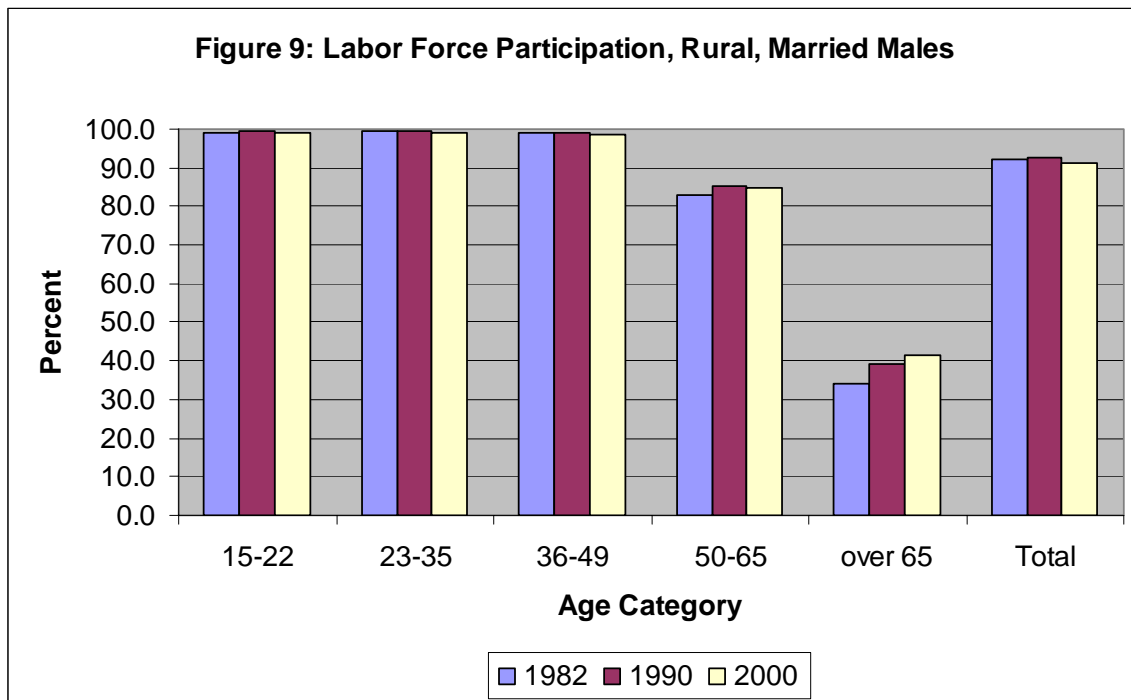
VI. Conclusions

The economic reforms of the past two decades have brought about changes in the labor force participation of particular subgroups of the Chinese population that are likely to continue and perhaps deepen as a result of China's accession into the WTO. Rising returns to education have led the majority of unmarried urban men and women in the youngest age cohort to stay out of the labor force and in school. This trend also applies to, but is less pronounced for, single rural youth. As economic growth increases the demand for highly skilled labor, this trend should continue.

Rising incomes during the reform period have also brought changes in the participation rates of married, urban Chinese. Between the 1990 and 2000 censuses, married urban women in all age categories show a significant drop in their labor force participation. This drop is not seen for men, nor is it seen for unmarried women, suggesting that the married women may be leaving the labor force due to an income effect brought about by higher spousal incomes.

Urban men over age 50 have not uniformly benefited from economic reforms. On the contrary, when considering men, this group of older men appears to have borne the brunt of the *xiagang* layoffs and involuntary retirements. Older men laid off from failing state owned enterprises appear to have retired or become discouraged workers in large numbers. By 2000, the labor force participation rate of urban Chinese men over 65 had fallen to one of the lowest rates in the world.

Older urban women, on the other hand, saw relatively little change in their labor force participation rates over the three censuses. This group started with substantially lower rates than men due to the policy making women eligible for retirement at age 50. Perhaps because of their initially lower participation, and due partly to their ability to find alternative employment in sectors unaffected by the retirement policy, older urban women saw little decline in their participation rates over time.

The trends in labor force participation are very different in the rural areas. Rural women over 50 showed substantial increases in labor force participation between 1982 and 2000. Among unmarried women in 2000 almost half of the participants without jobs reported themselves as looking for work, rather than being occupied with housekeeping. We also observe some evidence of a growing feminization of rural agriculture in a declining ratio of men to women in agriculture among middle-aged and older rural residents.

Whereas older urban men are leaving the labor force by 2000, older rural men are increasing their labor force participation. This trend could be a reflection of the younger workers abandoning the farm for the factory, with the agricultural labor now being supplied by the older rural residents.

As incomes increase, we expect Chinese youth to remain in school in ever increasing numbers. As China is transformed into a consumer society, it is possible that more married urban women will choose to remain out of the labor force and devote their energies towards home production. As time passes and industrial reforms progress and the older, less educated cohorts are replaced by older workers with greater skills, we may also see a reversal in the current decline in older urban workers' labor force participation.

Table 1--Labor Force Participation: International Comparisons

Age Groupings

1982	15-24	25-34	35-49	50-64	65+
France					
Male	51.3	95.6	96.4	71.0	4.0
Female	41.0	67.5	59.5	40.6	2.1
Japan					
Male	43.3	97.0	97.6	89.6	39.0
Female	43.5	50.2	63.7	50.6	16.0
Korea					
Male	32.8	93.7	97.7	88.1	38.9
Female	36.1	39.2	60.7	54.5	11.7
Pakistan (1983)					
Male	76.6	96.5	97.1	89.9	56.9
Female	12.4	14.8	13.5	10.9	5.4
U.S.					
Male	67.1	94.4	94.1	76.2	17.1
Female	56.8	68.1	66.9	47.1	7.4

1989	15-24	25-34	35-49	50-64	65+
France					
Male	41.8	94.5	95.9	62.0	3.5
Female	35.1	75.1	70.0	40.5	1.7
Japan (1990)					
Male	43.4	96.8	97.6	88.0	36.5
Female	44.8	56.6	68.1	53.7	16.2
Korea					
Male	28.1	93.8	95.4	82.2	39.0
Female	39.6	46.1	60.4	53.0	18.1
Pakistan (1987)					
Male	71.4	97.9	98.0	89.3	55.7
Female	10.5	10.9	14.9	10.6	2.4
U.S.					
Male	62.8	90.7	92.1	74.2	16.0
Female	58.4	73.0	75.3	51.9	7.8

2000	15-24	25-34	35-49	50-64	65+
France					
Male	32.9	93.7	95.6	63.3	1.9
Female	26.1	78.6	78.2	50.5	0.9
Japan					
Male	47.4	96.7	97.6	89.1	34.3
Female	46.6	63.9	67.7	56.8	14.4
Korea					

Male	26.7	89.4	94.4	78.0	39.9
Female	36.2	52.2	62.2	50.7	22.5
Pakistan (1997)					
Male	65.2	97.0	97.5	89.7	53.3
Female	14.2	14.8	17.4	16.3	11.5
U.S.					
Male	68.6	93.4	91.9	75.6	17.5
Female	63.2	76.3	77.8	61.0	9.4

Source: ILO Yearbook of Labour Statistics, various years.

Table 2

Percentage Distribution of Urban Women's Occupations

All Employed Urban Women

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	19.02	2.11	7.33	17.39	10.38	16.66	27.01	0.10
1982	12.83	1.42	3.05	5.21	8.81	26.65	41.70	0.33

Employed Urban Women Age 50-65

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	18.07	4.26	6.15	10.93	7.73	44.71	8.04	0.10
1982	10.45	7.36	3.79	4.78	15.84	36.11	21.44	0.25

Table 3

Percentage Distribution of Urban Men's Occupations

All Employed Urban Men

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	10.39	6.30	11.31	12.77	6.95	12.94	39.20	0.13
1982	10.20	6.32	5.02	3.26	5.38	20.76	48.80	0.26

Employed Urban Men Age 50-65

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	13.53	11.32	15.80	9.50	5.69	22.49	21.49	0.18
1982	11.27	16.48	5.44	4.42	10.48	25.10	26.58	0.23

Table 4

Percentage Distribution of Rural Women's Occupations

All Employed Rural Women

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	3.46	0.26	0.76	3.67	2.19	81.56	8.07	0.04
1990	3.12	0.18	0.44	2.21	1.47	85.19	7.38	0.01
1982	2.85	0.18	0.33	1.26	1.28	86.40	7.65	0.06

Employed Rural Women Age 15-22

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	3.76	0.05	0.89	2.91	3.79	70.92	17.62	0.06
1990	1.77	0.01	0.33	1.42	1.28	84.78	10.40	0.02
1982	1.98	0.01	0.01	1.21	0.84	86.21	9.68	0.06

Employed Rural Women Age 23-35

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	4.78	0.25	1.00	4.45	2.46	77.21	9.79	0.06
1990	4.37	0.14	0.56	2.83	1.42	82.34	8.33	0.01
1982	3.77	0.15	0.02	1.45	1.33	84.91	8.33	0.04

Employed Rural Women Age 36-49

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	3.21	0.41	0.73	4.17	1.94	83.65	5.86	0.03
1990	3.37	0.36	0.47	2.37	1.89	85.91	5.62	0.00
1982	3.29	0.41	0.02	1.09	1.63	87.92	5.62	0.02

Employed Rural Women Age 50-65

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	1.05	0.16	0.22	1.77	0.96	94.32	1.50	0.02
1990	1.52	0.25	0.25	1.39	1.02	93.90	1.66	0.00
1982	0.74	0.33	0.00	0.99	1.71	93.23	2.98	0.03

Table 5

Percentage Distribution of Rural Men's Occupations

All Employed Rural Men

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	3.54	1.58	1.94	3.43	2.00	73.48	13.94	0.08
1990	4.02	1.92	1.45	2.15	1.43	76.93	12.09	0.02
1982	4.70	1.79	1.12	1.49	1.46	76.74	12.64	0.06

Employed Rural Men Age 15-22

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	2.08	0.12	1.35	2.31	2.53	74.04	17.47	0.10
1990	1.48	0.04	0.83	1.13	1.05	82.18	13.25	0.04
1982	2.11	0.03	0.04	1.05	1.02	82.40	13.25	0.10

Employed Rural Men Age 23-35

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	4.12	1.11	2.14	3.95	2.26	67.65	18.70	0.07
1990	4.87	1.18	1.57	2.61	1.23	72.92	15.59	0.01
1982	5.88	0.89	0.10	1.65	1.31	73.43	16.69	0.05

Employed Rural Men Age 36-49

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	3.87	2.75	2.10	3.98	1.95	71.65	13.62	0.08
1990	5.14	3.92	1.82	2.45	1.58	73.35	11.74	0.01
1982	7.04	4.11	0.10	1.64	1.60	74.06	11.42	0.03

Employed Rural Men Age 50-65

Year	Professional, Technical and Related Workers	Administrative and Managerial Workers	Clerical and Related Workers	Sales Workers	Service Workers	Agriculture, Animal Husbandry, Forestry Workers, Fishermen, Hunters	Production and Related Workers, Transport Equipment Operators, Laborers	Workers not Classifiable by Occupation
2000	3.42	1.74	1.84	2.57	1.48	83.23	5.65	0.08
1990	3.99	3.00	1.61	1.89	1.99	82.51	4.98	0.03
1982	2.77	3.24	0.06	1.57	2.21	84.21	5.90	0.04

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Table A1: Data To Accompany Figures 1 to 9

Figure 1 Data
LFP by Sex and Location

	1982	1990	2000
Total	78.7	78.8	76.9
Male	86.45	84.6	83.0
Female	70.56	72.6	70.6
Urban	77.8	75.7	65.9
Rural	78.9	79.9	80.6

Figure 2 Data
LFP for Unmarried Urban Females

	1982	1990	2000
15-22	72.7	60.2	46.4
23-35	95.0	91.6	90.4
36-49	80.9	83.9	78.2
50-65	21.5	22.8	17.3
over 65	2.8	3.3	1.9
Total	62.7	52.5	47.3

Figure 3 Data
LFP for Married Urban Females

	1982	1990	2000
15-22	86.7	86.2	69.3
23-35	92.1	91.1	79.2
36-49	83.2	87.4	74.5
50-65	28.9	37.4	22.2
over 65	4.7	7.6	4.0
Total	75.0	76.1	61.9

Figure 4 Data
LFP for Unmarried Urban Males

	1982	1990	2000
15-22	70.6	59.6	43.8
23-35	94.2	92.5	92.2
36-49	88.3	92.2	85.6
50-65	67.5	70.9	49.1
over 65	19.2	17.0	9.4
Total	75.0	67.1	58.2

Figure 5 Data
LFP for Married Urban Males

	1982	1990	2000
15-22	97.2	98.9	96.4
23-35	99.1	99.3	97.2
36-49	98.7	99.0	94.9
50-65	76.2	75.0	55.3
over 65	26.3	24.5	9.6
Total	89.9	89.3	80.4

Figure 6 Data
LFP for Unmarried Rural Females

	1982	1990	2000
15-22	84.3	73.1	67.3
23-35	95.1	94.8	92.9
36-49	72.4	83.9	86.4
50-65	23.8	36.2	49.3
over 65	3.1	5.5	13.3
Total	64.0	59.6	56.3

Figure 7 Data
LFP for Married Rural Females

	1982	1990	2000
15-22	85.6	91.2	85.3
23-35	88.1	91.2	89.4
36-49	80.3	88.0	88.5
50-65	39.2	54.2	67.0
over 65	7.0	12.8	27.0
Total	74.0	80.3	80.9

Figure 8 Data
LFP for Unmarried Rural Males

	1982	1990	2000
15-22	78.3	69.3	67.0
23-35	96.7	95.2	96.1
36-49	93.7	93.9	92.9
50-65	72.6	78.8	81.1
over 65	19.2	23.2	30.3
Total	78.6	72.7	72.9

Figure 9 Data
LFP for Married Rural Males

	1982	1990	2000
15-22	99.2	99.4	99.2
23-35	99.6	99.5	99.2
36-49	98.9	99.2	98.6
50-65	82.9	85.4	85.0
over 65	33.9	39.1	41.6
Total	92.0	92.5	91.2

Table A2
Probability of Labor Force Participation, Marginal Changes
for Urban Women Age 15 and Older

	1982	**1990**	**2000**
Married	-.004	.089***	-.012***
Illiterate	-.298***	-.097***	.056***
Primary School	-.197***	-.058***	-.056***
Senior Middle	-.046***	.006	-.007*
Postsecondary	-.268***	-.147***	.058***
Age	.078***	.076***	.091***
Age squared	-.001***	-.001***	-.000***

Coefficients on ethnic and province dummies suppressed

No. of Obs.	103,679	230,290	113,976
Obs.P	0.70	0.69	0.58
Pred. P (at X-bar)	0.70	0.68	0.51

Entries are the change in the probability that an individual is in the labor force
when the binary variable toggles from zero to one, evaluated at the sample mean

Junior Middle School is the comparison group for educational attainment.

Entries for age and age squared are the marginal change in the probability that
an individual is in the labor force resulting from a one unit change,
evaluated at the sample mean.

Asterisks indicate the significance of the underlying probit coefficient.
*** indicates significance at the one percent level or better;
** indicates significance at the five percent level;
* indicates significance at the ten percent level.

Data Sources:
20% Random samples of the 1% Micro samples of the Population Censuses of
China for 1982 and 1990
0.095% Micro sample of the Population Census of China 2000.

Table A3
Probability of Labor Force Participation, Marginal Changes
for Urban Men Age 15 and Older

	1982	1990	2000
Married	.067***	.104***	.135***
Illiterate	-.065***	.024***	.155***
Primary School	-.056***	.003	.089***
Senior Middle	-.058***	-.071***	.090***
Postsecondary	-.323***	-.223***	-.029***
Age	.038***	.048***	.078***
Age squared	-.001***	-.001***	-.001***

Coefficients on ethnic and province dummies suppressed

	1982	1990	2000
No. of Obs.	111,091.00	247,992.00	114,885.00
Obs.P	0.85	0.82	0.74
Pred. P (at X-bar)	0.91	0.90	0.79

Entries are the change in the probability that an individual is in the labor force
when the binary variable toggles from zero to one, evaluated at the sample mean

Junior Middle School is the comparison group for educational attainment.

Entries for age and age squared are the marginal change in the probability that
an individual is in the labor force resulting from a one unit change,
evaluated at the sample mean.

Asterisks indicate the significance of the underlying probit coefficient.
*** indicates significance at the one percent level or better;
** indicates significance at the five percent level;
* indicates significance at the ten percent level.

Data Sources:
20% Random samples of the 1% Micro samples of the Population Censuses of
China for 1982 and 1990
0.095% Micro sample of the Population Census of China 2000.

Table A4
Probability of Labor Force Participation, Marginal Changes
for Rural Women Age 15 and Older

	1982	1990	2000
Married	0.015***	.085***	.059***
Illiterate	0.005*	.010***	.109***
Primary School	0.046***	.057***	.149***
Senior Middle	0.018***	-.050***	.107***
Postsecondary	0.083***	.011	.124***
Age	0.036***	.045***	.035***
Age squared	-0.001***	-.001***	-.000***

Coefficients on ethnic and province dummies suppressed

No. of Obs.	545,541	659,701	331,798
Obs.P	.705	.739	.750
Pred. P (at X-bar)	.727	.766	.782

Entries are the change in the probability that an individual is in the labor force when the binary variable toggles from zero to one, evaluated at the sample mean

Junior Middle School is the comparison group for educational attainment.

Entries for age and age squared are the marginal change in the probability that an individual is in the labor force resulting from a one unit change,
evaluated at the sample
mean.

Asterisks indicate the significance of the underlying probit coefficient.
*** indicates significance at the one percent level or better;
** indicates significance at the five percent level;
* indicates significance at the ten percent level.

Data Sources:
20% Random samples of the 1% Micro samples of the Population Censuses
of China for 1982 and 1990
0.095% Micro sample of the Population Census of China 2000.

Table A5
Probability of Labor Force Participation, Marginal Changes
for Rural Men Age 15 and Older

	1982	1990	2000
Married	0.068***	.085***	.073***
Illiterate	0.028***	.034***	.069***
Primary School	0.030***	.035***	.092***
Senior Middle	-0.025***	-.071***	.079***
Postsecondary	-0.058***	-.068***	.026***
Age	0.026***	.031***	.027***
Age squared	-0.000***	-.000***	-.000***

Coefficients on ethnic and province dummies suppressed

	1982	1990	2000
No. of Obs.	571,207	691,180	341,317
Obs.P	0.87	0.86	0.86
Pred. P (at X-bar)	0.93	0.93	0.92

Entries are the change in the probability that an individual is in the labor force
when the binary variable toggles from zero to one, evaluated at the sample mean

Junior Middle School is the comparison group for educational attainment.

Entries for age and age squared are the marginal change in the probability that
an individual is in the labor force resulting from a one unit change,
evaluated at the sample mean.

Asterisks indicate the significance of the underlying probit coefficient.
*** indicates significance at the one percent level or better;
** indicates significance at the five percent level;
* indicates significance at the ten percent level.

Data Sources:
20% Random samples of the 1% Micro samples of the Population Censuses
of China for 1982 and 1990
0.095% Micro sample of the Population Census of China 2000.

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