Women’s Employment and Industrial Restructuring in China:
Investigation Using Urban Household Surveys

Revised
April 30, 2005

Research Proposal for PEP

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Abstract

In the past decade, China’s public enterprises underwent dramatic ownership reforms and labor retrenchment. While industrial restructuring is an inevitable feature of market transition, the reforms have affected men and women differently. Studies show that women have endured higher inactive and unemployment rates than men following the restructuring. The deterioration of women’s employment status makes the feminization of urban poverty a real possibility. This project studies the impact of industrial restructuring on the employment status of women in urban China using three nation-wide household surveys. The investigation intends to shed light on the following questions: 1) How has the public sector restructuring affected the labor force participation patterns of men and women? 2) Why do a large number of working-age women have left the labor force following the restructuring? 3) Why are women’s unemployment spells are longer higher than men’s? 4) To what extent are the gender differences in labor force participation and unemployment spells attributable to differences in preferences and institutional factors and to observed characteristics? A better understanding of the nature of the fall in FLFPR and the causes of gender disparity in unemployment is of critical importance for the design of gender-sensitive public policies to alleviate the pain of economic adjustment borne by women.

Motivations and Objectives

In the past decade, China’s public enterprises underwent dramatic ownership reforms and labor retrenchment. Between 1995 and 2001, the number of state-owned enterprises (SOEs) fell from 118,000 to 53,489, and more than 35 million state workers were laid off (Dong, 2003). While industrial restructuring is an inevitable feature of market transition, the reforms have affected men and women differently. Studies show that women are currently bearing a disproportionate share of the costs of adjustment. Women are more likely to be laid off than men and have more difficulty finding re-employment in the private sector (Appleton, et. al., 2002). In consequence, women face higher unemployment rates than men, their spells of unemployment are longer (Du, 2004), and labor force participation rates have dropped more dramatically for women.
than for men (Yang, 2003). The deterioration of the employment status of women makes the feminization of urban poverty a real possibility in post-restructuring China. The rising gender inequality in paid employment affects the well-being of not only women themselves but also their family, given the evidence from a diverse set of countries that increasing a woman’s share of income in the household significantly increases the share of the household budget allocated to children’s education, health and nutrition-related expenditures (World bank, 2001). Gender discrimination in labor markets also creates new resource misallocation in that highly productive female workers are unemployed or forced to leave the labor force altogether. Despite the profound impacts, the gender implications of industrial restructuring have not received adequate attention from economists and policy-makers in China.

The purpose of this project is to study the impact of industrial restructuring on the employment status of women in urban China using three nation-wide household surveys. The project examines gender differences in the changing patterns of labor force participation and the determination of the probabilities of leaving unemployment. The analysis intends to cast light on the following questions: 1) How has the public sector restructuring changed the labor force participation patterns of men and women? 2) Why do a large number of working-age women leave the labor force following the restructuring? 3) Why are women’s unemployment spells longer than men’s? 4) To what extent are the gender differences in active rates and unemployment spells attributable to external constraints and institutional factors and to observed characteristics?

**Scientific Contributions and Policy Relevance**

As with transition economies in Central and East Europe, under the central planning system, China had achieved greater female participation in the workplace than many market economies at a similar stage of development. Economic reform has brought new opportunities for income generation to Chinese men and women. At the same time, some traditional patriarchal values have resurfaced; there have been constant calls for women to return the home in media
The government appears to be keen on the idea of dealing with rising urban unemployment by restricting female labor supply. The 10th Five-year Plan approves the policy of promoting “multiple forms of employment”, one of which is so called “periodic employment” (jieduanjiuye) (World Bank, 2002). This policy concept implicitly encourages women to leave the labor force without pay for a number of years while taking care of young children and attending to family duties. Its advocates argue that China’s FLFPR achieved under the central planning regime was too high, which not only generated labor surplus to the economy but also created “double burdens” on women (Hu, et. al., 2002). In their view, restricting female labor supply through policies such as “periodic employment” would be welcomed by women as it gave women more flexibility to adjust their career to household responsibilities. However, women’s rights activists object this policy concept and fear that the government’s endorsement of such concept would reinforce the traditional gender role and legitimize unfair treatment of female workers in the face of economic adjustment (Liu, 2001).

In spite of the growing pressure for women to leave the workplace, China’s FLFPR continued to increase during the early years of market reform, with the share of women in urban employment rising from 32.9% in 1978 to 39.4% in 1995. Meng (2002) compared women’s economic position in Taiwan and Mainland China using data from household surveys of 1995. She found that despite more than a decade of market reform married women in Mainland China remained strongly attached to the labor market even during their childbearing period; by contrast, the labor force participation of married women in Taiwan was fairly sensitive to demographic characteristics of the household.

However, Meng’s study relied on a survey undertaken before the large-scale public-sector downsizing that was launched in late 1997. As mentioned earlier, the radical reforms in the late 1990s have ended the era of “cradle-to-grave” socialism and lifelong employment for state workers and fundamentally changed the landscape of China’s urban labor markets. Using the 1997 and 2002 urban household surveys, Yang (2003) examined the changes in labor force
participation following the restructuring. She found that the public sector downsizing has reduced LFPRs dramatically, from 78.6% to 71.6% for men and from 64.6% to 54.1% for women. The magnitude of the reduction in FLFPR is striking, with China’s urban FLFPR in 2002 more than 5 percentage points below the level of the United States in 1996. The sharp fall in FLFPR raises the question of whether women withdraw from the workforce because the labor market reforms had offered them more choices, as argued by the supporters of “periodic employment”, or because their prospects of obtaining paid jobs following displacement from state-owned enterprises became too discouraging or more costly. In this project, we investigate the underlying causes of the changes in female labor force participation between 1997 and 2002 and compare the contrast in the patterns of changes between men and women. The investigation will generate insights into whether the change in female activity rates reflected a genuine choice of women. Understanding the nature of the falling FLFPR is of importance for formulating appropriate public policies to help women cope with the adjustment. The results of our analysis are also educational for policymakers, helping them seek gender equitable solutions for urban unemployment.

In addition to the fall in FLFPR, rising unemployment among women was another consequence of the industrial restructuring in China. Several studies have investigated the causes of lay offs and the determinants of re-employment of laid off workers. Li, et. al. (2002) and Appleton, et al. (2002) examined the role of worker characteristics and environment attributes in the determination of layoffs and reemployment. Both studies confirmed that women were more likely to be laid off than men and less likely to find a new job. Cai, et. al. (2004) estimated the determinants of re-employment subsequent to involuntary job loss. They found that women’s re-employment decisions were not responsive to social assistance but sensitive to life-cycle characteristics of the household. Du (2004) analyzed gender differences in the duration of unemployment, and found that the predicted mean and median durations of unemployment for women are nearly twice as long as those for men.
Although the studies on unemployment reviewed above confirm the existence of gender differentials in the incidence of layoffs and the likelihood of reemployment, none of these studies have investigated the reasons why unemployment rates and spells between men and women are different. In this project we analyze gender differences in the determination of employment status and unemployment duration to fill the gap in the literature. A better understanding of gender differences in the causes of reemployment will provide a sound basis for the design of gender-sensitive labor market policies to mitigate the negative impact of restructuring on displaced workers.

While focusing on China, this project will also contribute to advancing our knowledge of the gender implications of restructuring in transition economies. As in China, women in Central and East European countries were also under the pressure for returning to the home where they were thought to belong, and to the role of full-time homemaker that they had left under the socialist system (Majcher, 2004). Our analysis will generate new insights into the ongoing debate over the desirability of the employment policies reflecting the growing influence of traditional cultural values in transition economies.

Methodology and Data Sources

The project consists of two parts. The first part examines the patterns of labor force participation and the second part explores the determination of unemployment duration. In each part, we will first estimate regression models of labor force participation or re-employment decisions for separate male and female samples and then conduct a decomposition analysis to shed light on the sources of gender differences. The details of the empirical methodology are given below.

Part I. Determination of Gender Differences in Labor Force Participation

The analysis of labor force participation is based on two national-representative urban Labor Force Surveys that were undertaken by China’s National Bureau of Statistics in May 1997 and October 2002. Each survey covers more than 300,000 urban households and provides
information on economic activities, age, education and other demographic characteristics of household members. Because the public downsizing took place in a full gear only at the end of 1997, the two cross sections of observations enables us to make a before- and after-restructuring comparison.

Our analysis focuses on married men and women aged between 20 and 54 because the most dramatic changes in labor force participation are observed among this prime-age group. We investigate the impact of the public sector restructuring on labor force participation by estimating probit models separately for men and women sub-samples in each of the two periods. The probit regression model is specified as follows:

$$ P(y = 1 | X) = \Phi(X' \beta) $$

Where $P$ is the probability of participation; $y$ is a dummy variable for labor force participation; $\Phi$ is the cumulative function of the standard normal distribution; $X$ is a vector of variables which affect women’s labor force participation; and $\beta$ is a vector of unknown parameters. Variables in $X$ include proxies for the market wage offer, non-earned income, the opportunity cost of paid employment, and local market conditions. Age and its squared term and the level of education are used to proxy a person’s market wage offer. Family wealth and non-earned income are measured by age and education of the spouse. The opportunity cost of working is measured by variables for the number of children and two dummy variables indicating whether the woman has young children aged 0-5 or 6-14 years. The macro economic indicators include regional unemployment rates, share of the services sector in regional GDP and rates of economic growth rate. The estimates of the probit models will throw light on how the public sector restructuring has altered the gender patterns of labor force participation over human capital characteristics of the person and his/her spouse, demographic characteristics of the household and local market conditions.
To disentangle the sources of the observed gender differences in labor force participation, the male-female difference in each period is decomposed using the method proposed by Jones and Makepeace (1996):

$$\bar{P}_M - \bar{P}_F = [\Phi(\bar{X}_M \hat{\beta}_M) - \Phi(\bar{X}_F \hat{\beta}_M)] + [\Phi(\bar{X}_F \hat{\beta}_M) - \Phi(\bar{X}_F \hat{\beta}_F)]$$  \hspace{1cm} (2)

Where $\bar{P}$ represents the participation rate of males (M) and females (F), $\bar{X}$ is a vector of the average values of the explanatory variables used in equation (1), and $\beta$ is the coefficient vector capturing gender-specific labor market structural forces. The first term on the right-hand side of (2) measures the gender differences in participation due to disparities in observed characteristics between men and women. The second term captures the influence of structural demand-and-supply factors on gender differences in labor force participation. The two components of (2) can be further disaggregated into $j$ sub components to analyze the importance of each individual variable or coefficient in explaining the observed male-female differences in participation outcomes.

The probit regressions and decomposition analysis will provide insights into the reasons why more women than men have withdrawn from the labor market following the restructuring and the welfare implications of falling female labor force participation and help to identify the areas where policy interventions are warranted.

**Part II. Determination of Gender Differences in Unemployment Duration**

The study of unemployment duration determination relies on data derived from the Urban Household Survey (UHS) and the Urban Unemployment Survey (UUS) undertaken by China’s National Bureau of Statistics in November 2003. The UHS data includes 11,422 households and 45,789 individuals in 17 provinces. The UUS data is a sub-sample of the UHS data, with males aged from 16 to 60 and females from 16 to 50. The UUS provides detailed information on 2,573 urban residents who had experienced unemployment over the past three years, and among those
residents 1,008 were reemployed and 1,565 remained unemployed at the time then the survey was taken.

As with the analysis of participation, we will first estimate the determinants of the likelihood of leaving unemployment separately for men and women using the duration regression models (for references, see Nickel (1979) and Narendranathan et al, (1985)). Supposing the hazard function takes the form of Weibull distribution, the equation that we intend to estimate is:

\[ h_i(t) = h_0(t) \exp(X_i \beta t^\alpha) \]  

Where \( X \) contains independent variables; \( \beta \) is a vector of unknown parameters; \( t \) is the unemployment duration; \( \alpha \) is the time dependence coefficient, indicating how the hazard rate changes as unemployment time goes by; and \( \nu \) is a random disturbance to catch the unobserved heterogeneity. The reemployment hazard ratio is determined by the factors affecting the probability of receiving a job offer and the probability of accepting the offer. Hence, determinants of unemployment duration in \( X \) involve four types of variables: (1) individual characteristics, such as education attainment, experience and earnings prior to the displacement; (2) household characteristics, such as marriage, employment status of other family members and household income from other sources; (3) macroeconomic indicators such as regional unemployment rates, share of the services sector in regional GDP, and rates of economic growth; and (4) labor market policies such as unemployment benefits and channels through which the unemployed seek reemployment. The estimates of those variables will throw light on economic and social constraints that unemployed men and women face to find reemployment and gender differences in the responsiveness of unemployed workers to characteristics of individual, household, economic situations and policy interventions.

We then decompose the difference between male and female’s expected unemployment spells, using the Oaxaca decomposition approach (Ham, Svejnar and Terrell, 1999):

\[ \overline{ED}_F - \overline{ED}_M = [ED(\bar{X}_F \hat{\beta}_M) - ED(\bar{X}_M \hat{\beta}_F)] + [ED(\bar{X}_F \hat{\beta}_F) - ED(\bar{X}_M \hat{\beta}_M)] \]
Where \( ED \) is the expected mean unemployment duration of males (M) and females (F) at the mean value of X for each sub-sample. As with (2), the first term on the right-hand side of (4) captures the gender differences in unemployment duration due to men and women’s differences in observed characteristics and the second term measures the gender differences attributable to differences in the estimated coefficients. The implicit assumption underlying the second term is that if the mean characteristics are identical across gender groups than gender differences in unemployment spells are driven by labor market structural and institutional factors. Through the decomposition, we seek to discern to what extent the gender differentials are explained by differences in institutional factors and by differences in observed characteristics. The analysis will help us understand the role of the practices of employers and institutions towards gender in creating gender disparity in unemployment and reemployment.

**Dissemination strategy**

The results of the project will be disseminated through several channels. First, we seek opportunities to present the results in conferences, both domestically and internationally. These academic venues include but are not limited to China’s Economists Annual Conference, PEP meetings and workshops, and Annual Conferences by the International Association of Feminist Economists (IAFFE) and by Chinese Economists Society (CES). We will strive to publish our research papers in recognized Chinese and English economic journals. Policy consultation seminars and workshops by the government and lectures on campus are also among the means through which our research outcomes are disseminated to policy makers and the general public.

**Research Team and Capacity Building**

The research team consists of two members: Du, Fenglian and Yang, Jiangchun. Du is a Ph. D candidate, majored in microeconomics and labour economics, in Peking University. Her Ph. D dissertation is entitled “The Unemployment in Urban China: Causes and Consequences”. Jiangchun Yang is a Statistician at the Division of Labor and Employment in the Department of
Population, Social Science and Technology Statistics, National Bureau of Statistics. Du will take a primary responsibility for the analysis of unemployment determination and Yang will be responsible for investigating the determinants of female labour force participation. Professor Xiao-yuan Dong of University Winnipeg will serve as an external resource person for the project.

The three of us got to know each other through the Economic Research Training and Mentoring Program for Chinese women economists, sponsored by the Ford Foundation, in 2002. Professor Dong was the research mentor for Du, Fenglian and Yang, Jiangchun who were the students of the training program, and Dong’s supervision was mainly through emails and long distance calls. Yang and Du have been working on the impacts of restructuring on female labour force participation and unemployment. Yang presented the preliminary results of her work at the 3rd Chinese Economists Annual Conference (CEAC) in Shanghai in 2003 and Du delivered her research paper at the 4th CEAC in Tianjin in December 2004.

Despite the progress, our research has been constrained by the lack of adequate time and resources. The supports from the PEP of IDRC will enable us to carry out in-depth analysis of this important topic with advanced empirical methods. With the grants from PEP, we are able to acquire additional data and spend a few months in University of Winnipeg working closely with Professor Dong on this project. While Professor Dong has played an important role in encouraging and helping us develop the present research proposal, we (Du and Yang) will carry out the project and present the research outcomes at PEP meetings.

The research and international collaboration will help us, two young scholars, acquire advanced research techniques, contributing significantly to the capacity building for the institutes we are affiliated with. After graduation from Peking University, Du, Fenglian will join the faculty of the School of Economics and Management in Inner Mongolia University, teaching microeconomics and labour economics. The benefits of the support from PEP will be appreciated dearly by Inner Mongolia University and its students. As a Statistician, Yang, Jiangchun is responsible for designing labor surveys, preparing of the enumerator guide, and tabulating of
survey results at NBS. The knowledge and analytical skills she acquires through this project will help NBS improve the quality of labor surveys and provide better information for economic analysis.

Reference


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G) Articles and Publications


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