

# ACCOUNTING FOR THE GENDER INCOME GAP IN URBAN CHINA

by

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(ABSTRACT)

Using data from the China Housing Survey, that was conducted in 1993, the present study attempts to learn whether and how specific factors—human capital (including education and health), guanxi (social connections), housework, and employment in different sectors of the economy influence the income gap between men and women in urban China when traditional, socialist, and market mechanisms are all present.

The data were collected from two large Chinese cities, Tianjin and Shanghai. The results of regression show that 1) Differences in education account for much of the gender differences in income. With the same amount of education, women still earn somewhat less than men. Health reduces the gender income gap between men and women in urban China. 2) Sector segregation accounts for much of the gender differences in income. The private sector pays much more than the public sector. Guanxi and housework do not help explain the difference in income between men and women.

The present study reveals that the income inequality between men and women comes mainly from market forces. The market factors of education, health, and sector are the primary areas in which women suffer disadvantages that result in their lower income.

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## Chapter 1: INTRODUCTION

### Importance of Problem

China is undergoing a transitional period from a planned economy to a market economy. In this transitional period since the economic reform of 1978, two kinds of economic systems have come to coexist, one rooted in the socialist system and one rooted in capitalism.

Socialism is a planned economy under which what men can do, women can do. Market economy works according to the principle of supply and demand in which human capital is presumably the major factor in deciding one's income. Chinese Confucian tradition considers family first and the position of women is mainly limited to roles inside the family as they are called "the inside people". Under such circumstances, what is the general pattern of income inequality between men and women in urban China?

Firstly, the growth of market has benefited both men and women in that the market system emphasizes individual ability and thus provides more chances for both men and women to improve their economic status. On the other hand, the market may have promoted gender inequality. New opportunities provided by development may have accrued primarily to men, with women having been reduced to a position of dependency on men (Whyte and Parish, 1984).

China witnessed a highly centralized economic system under Mao. "A socialist planned economy is a political economy under which the overall direction and programs of development are determined by the government"(Zhang, 1995). However, problems arose from government control of the economy. Work incentives were weak to negligible when people were rewarded with the same low income regardless of their performance.

The aim of the reform carried out since 1978 has been to introduce the market mechanism, which promotes economic efficiency by providing higher incentives, and which increases the volume and quality of work. Private enterprises were allowed in this socialist country after the reform.

In the pre-reform period, the government controlled the assignment procedure of graduates. The wage rates were set by the government according to position and years of experience on the job. After the reform, people have had more opportunities to choose the jobs that interest them and which may bring the greatest economic benefits (Qian, 1996).

Secondly, while it is necessary to learn the impact of market developments in order to understand the gender income inequality issue in urban China, it is helpful to consider the background of gender issues in a country in which women have historically been confined to "inside" duties. Also, it is a socialist country. In pre-reform socialist China, little gender inequality was found due to upliftment of women, encouraged by the Communist revolution with its aim to establish a country that annihilated all stratification including gender inequality (Whyte and Parish, 1984). One of the movements of Mao's period was to repudiate traditional Confucianism, which demands the subordinate status of women, and which spreads the idea that for a woman to be virtuous, she must lack academic knowledge and education. Since approximately 1949, the time of the establishment of People's Republic of China, women's social and economic status has been greatly improved. It is generally held by socialists that women are equal to men in all aspects of social life. As a result, many Chinese women believe that, as Mao put it, women hold half of the sky and men hold the other half. These two contradictory

historical attitudes towards women in Chinese society, the traditional and the revolutionary, translate into a complicated situation of gender inequality in China.

### **Statement of Problem**

This thesis is an attempt to learn whether and how specific factors -- human capital (including education and health), guanxi (social connections), housework, and employment in different sectors of the economy influence the income gap of men and women in urban China when traditional, socialist, and market mechanisms are all present. It will focus on gender income inequality issues in urban China in their own right rather than as part of a more general study of income. The data used here were collected in 1993 and were from the most recent large survey of gender income inequality in China.



## **Chapter 2: LITERATURE REVIEW**

There are several broad theories for accounting for gender income inequality in China; these are human capital, feminism and occupational segregation by sex.

### **Human Capital**

The neoclassical theory proposes that a human capital model can explain the gender income gap. This school of thought maintains that the supply side of the labor market -- namely, the workers themselves -- is responsible for the quality of jobs held and the wages they receive (England and Farkas, 1986).

Human capital theory states that the labor market adjusts itself according to the principle of supply and demand whereby the labor market is fairly efficient in selecting individuals into jobs that are commensurate with their skills and abilities. Human capital like physical capital may depreciate. The benefit of human capital can be reaped only if an individual is working; As is well known, anyone who withdraws from the labor market for a period of time is at risk of being penalized by a reduced return to his or her earlier investment. Western women expect more career interruptions than men because they raise children. Women also accompany their husbands who are often transferred by their employers to new cities. Therefore, being pessimistic about their future in the workplace, women strive less in school because they feel their efforts will not be rewarded (Qian, 1996). This school of thought holds that men and women get different wages because women in any competitive economic system have acquired less human capital in such forms as education and work experience, both of which are important determinants of income.

Human capital theory may also explain the occupational segregation of women. According to this model, women choose types of work that are commensurate with their human capital investments. Because western women's expectations for achievement in the workplace is lower than men's, their jobs are often ones that are associated with relatively low training, little responsibility, and short career ladders. (Stromberg and Harkess, 1988). Therefore, differences in human capital play a major role in explaining the gender income gap. In addition, feminists have pointed out that in the United States throughout the 20<sup>th</sup> century women have received as much education as men but have only reduced, not closed, the income gap. The present study will investigate whether a similar pattern holds for China.

Under a dual economy like China, with both market and centralized sectors, it is hard to predict what the overall returns to education might be. Shirk (1984) distinguishes between two conceptualizations of virtuocracy and meritocracy. "Virtuocracy is a reward system that favors those committed to the political ideology of the dominant bureaucratic class," while "Meritocracy is the system by which one's ability and credentials are rewarded" (Bian, 1994). If China is changing from virtuocracy to meritocracy, are women moving towards the same return to education as men?

In pre-Mao China, public schooling was primarily limited to males, while women were educated at home to learn Confucianism. "Propriety in Confucianism was important—there was a proper dress for every occasion, a proper way of saying something, a proper way of entertaining people" (Lee and Sun, 1995). Three forms of obedience were emphasized for females. As a child, a woman should obey her father; as a married person, her husband; as a widow, her son. According to the traditional

Confucianism, “the proper behavior for a woman was to be yielding and weak, passive, and still” (Lee and Sun, 1995). It was left to men to be active and strong. This culturally induced sense of worthlessness and inferiority was an obstacle for Chinese women who desired higher education. Though this view of sex roles has been much challenged particularly in urban areas, more or less it still influences females’ conceptions of themselves today.

In summary, two factors regarding education may influence gender differences in income in China today. First, women in China have been discouraged from receiving the same amount of education as men especially in pre-communist China as well as after the 1978 reform. Second, women have been encouraged to think of themselves as having little knowledge and to look to men for guidance and direction. *Thus, when we examine data on income, gender, and education, we should find that some of the gender difference in income is explained by the fact that women have less education than men. In addition, the returns on income from education will be greater for men than for women.*

According to human capital theory, health is also an important factor in determining one’s income (Kiker, 1971). Better health is desirable as an end in itself. A person with a good education but without good health is less likely to receive high income. The allocation of health goods has been found to be not equal for girls and boys within a family at least in rural China (World Bank, p.38, 1997). *Consequently, part of the gender difference in income is expected to be explained by women being less healthy than men. And because health care is less available to women than to men, the effect of poor health depresses women’s income more than it does men’s income.*

The human capital model has certain limitations in China though. Firstly, the labor market in China is generally less independent of government influence and regulations than western labor markets. Secondly, social and political capital is traditionally more important in China than human capital.

Guanxi is a kind of social capital that is important in determining one's income in China. Guanxi literally means "social relationship" or "social connections" with people. For centuries, guanxi has been an interpersonal relationship that may be used to acquire power, status, and scarce resources. The sources of guanxi are multiple. Guanxi may be developed through relatives and friends, even through friends of friends or friends of relatives. Guanxi is a social resource in job searches and job mobility, one that has penetrated into every aspect of social, political and economic life (Bian, 1994).

In the present study, owing to limitations in the available data, guanxi will be measured only in terms of whether one has any influential relatives through which one can get high-income positions, i.e., whether relatives of the respondents including father, mother, father-in-law, mother-in-law and spouse have administrative positions indicates whether the respondents have guanxi or not. In China, a child with a family background may receive many benefits, including greater access to desirable jobs with high incomes. Many graduates earn more than others because they have powerful relatives or friends who get them into work units that pay high wages.

Since men traditionally put careers first and women focus more on family, men in China usually pay more attention to developing a guanxi network. They are more likely to use Guanxi in order to get jobs that enable them to get higher incomes. *If this is true, then when we examine gender, guanxi, and income, we should find that men have more*

*guanxi than women, and that this explains some of the gender difference in income. In addition, if it is the case that men's connections are better than women's connections and men work harder developing guanxi, the effect of guanxi on men's income should be stronger than the effect of guanxi on women's income.*

### **Feminism**

According to feminists, the concept of patriarchy embodies men's power over women (Stromberg and Harkess, 1988). In their construction of the framework of the relationship between patriarchy and capitalism, they analyze the disadvantaged position of women in society with the dialectical and historical perspective (Anderson, 1993). Women's exploitation and oppression by men in all aspects of social life in capitalist societies is traced back to patriarchy and capitalism. Feminists reject the "separate sphere model", which maintains that men and women are segmented into two spheres, family and work, which are irrelevant to each other. Rather, they argue that these two spheres interplay and reinforce each other in shaping women's disadvantaged positions in society. "There really is no inside of the family where patriarchy operates exclusively, nor is there an outside of the family or a public arena in which only capitalism functions"(Anderson, 1993). The system of patriarchy serves the purpose of capitalists in that the employers benefit from the free housework women provide their husbands.

A strong parallel exists in China, where market and competitive elements are emerging and patriarchy has deep roots. The market system and patriarchy work together to influence gender inequality in wages in urban China. During the transition period, a general pattern exists for urban Chinese women to do more housework than men. Women frequently do the shopping, cooking, dishwashing, cleaning, and laundering, and men

frequently wait for the meals to be served and the clothes to be washed. Though this pattern may be more strictly followed by the older generation and husbands of younger generations began to share housework with their wives, most young women are still under the dual burden of housework and career.

Traditional Confucian Chinese values identified male as yang, and female as yin. Women's sphere of activities was mainly restricted inside the household before Mao. The traditional idea of women being "inside" people has been challenged in the minds of most modern Chinese females. Nowadays, Chinese women have a stronger attachment to work outside the home. Communist doctrine introduced the idea of gender equality but did not change the division of labor in the household. The result is that married women in modern China work eight hours in the work unit, and then they do most or all of the housework at home.

Chinese women work outside the home and spend much effort caring for their families. Under such a situation, women cannot be devoted to the jobs with the same energy and concentration as their husbands.

*If this is true, then when we examine data on housework, gender, and income, we should observe that women do more housework than men, and that this explains some of the gender difference in income. In addition, since women are generally more involved in housework, and more likely to be fully responsible for its completion, housework should depress women's income more than it does men's.*

### **Occupational Segregation by Sex**

One of the contributions of western theories and research on gender income inequality is the concept of occupational segregation by sex. "Occupational segregation

by sex plays an important direct role in determining the sources of female-male pay differentials” (Anker, 1997). Researchers indicate that the concentration of workers of the same sex in job categories is the main reason for gender income inequality in the western world. (Dunn, 1997).

According to students of occupational segregation by sex, there are two types of gender inequality at work. “Sex segregated employment is a prevalent type of inequality in the workplace, and it often serves as the basis for a second type of workplace inequality, sex-based earnings differences” (Dunn, 1997). Those occupations most populated by women workers are the lowest paid of all occupations” (Anderson, 1993). When women worked in jobs where most of other workers are women, they are in disadvantageous positions. “Women are most heavily concentrated in those jobs that have been the most devalued-both economically and socially”(Andersen, 1993).

Just as there are various explanations for the income inequality of men and women, there are also multiple explanations for occupational segregation by sex. Given the overlap of two different theories, some of the theories that explain occupational segregation by sex may also partially account for gender income inequality. Human capital theory and feminist theory, which attend to explain gender differences in income, are often used to explain occupational segregation by sex.

However, there is not such a close connection between occupational segregation by sex and gender income inequality in China as in the western world since the system of capitalism is different from that of socialism in terms of both ideology and practice. This kind of segregation is a rather obvious phenomenon in the system of capitalism, which preserves sex differences among workers to prevent their collective power in struggling

against capitalists. The ideology of socialism in China supports sexual equality. Engels argued that the successful revolution of socialists would enable women to take part in production as men do. According to Engels, “capitalism was rooted in the system of private property ownership and male monopolization of control over property, and in the female dependence upon males that was thereby produced” (Whyte and Parish, 1984). In one of the textbooks of primary schools during the Chinese Revolution, the first sentence is “Men and women are all people; without equality, there’s trouble”(Davin, 1976). It is believed by socialists that with private property ownership eliminated, men would no longer control the means to oppress women, and with women regularly involved in jobs, they would meet men as equals (Whyte and Parish, 1984).

In addition, scholars of stratification point out that life chances for individuals and social groups in China are under the distributive power of the state (Zhou, Tuma, and Moen, 1996). Their conclusion applies to the two related processes of job allocation and wage distribution.

Researchers have noted the conspicuous, high participation rate of Chinese women in the labor force compared to other countries. There are few housewives in China (Griffin and Zhao, 1993). Women are encouraged to work since they are important for the construction of the socialist country.

In China, everyone has a right to get a job regardless of gender. At the same time, “Everyone is a member of the work unit” (Norman, Norman and Sheng, 1994). “Danwei is a unique form of organization and is the basic building block in Chinese urban society” (Norman, Norman and Sheng, 1994). The nature of the work unit, or danwei, plays a major role in the lives of urban workers (Norman, Norman and Sheng, 1994).



Government administration is the core of these work units. According to government policy, there are equal opportunities for both men and women in the allocation of jobs, and discrimination against women in the process of allocation is prohibited. (Qian, 1996).

In China, wages serve the goals of creating equity more than functioning as an instrument of motivation. As was the case in the former Soviet Union and other socialist countries, the centralized wage distribution system award people with different performance with the same income. Good workers receive the same wages as poor workers. “The central government sets general policies on wage matters even today. All employees in the state sector receive regular monthly wages under China’s unified wage systems” (Jackson, 1992). However, there are hundreds of wage scales and over one thousand wage grades and rates for different regions, branches of industry, sizes of enterprises and types of work (Jackson, 1992).

In a word, concentration of women in certain jobs in the public sector work units in China does not necessarily translate into low wages. Occupational segregation by sex may explain part of the gender income inequality in China but may not play an equivalent role in China as in other countries. With market mechanisms playing an increasing role in the wage distribution process and the state beginning to decentralize its control over the labor market, it seems likely that occupational segregation by sex will become a larger or even main cause of the gender income inequality in China. In addition, because the sample size of the data set used here is not big enough to allow for analysis of this problem, I will not examine whether sex segregation of occupations has the same effect in China as in other countries in explaining gender income differentials.

In China, occupational segregation by sex may be represented in different sectors. The Chinese labor market is mainly divided into state sectors, collective sectors and private sectors, with the first two called the public sector and the last the private sector. By 1989, there were 2,184,000 private firms with 3,616,000 employees (Zhang, 1995). The figure has largely increased by the end of 90's. As a result of globalization and the deepening of the reform when the state sector is allowed to lay off workers, the private sector is encouraged to accommodate the surplus labor that used to be accepted by the state sector.

A main branch of the private sector is "three capitalist enterprises" which is not only newly emerged but has expanded rapidly. "Businesses that receive foreign investments are known in China as three capitalist enterprises" (Bian, 1994). "Three" refers to the ways that foreign companies make their investments. The first type is Chinese-foreign joint ventures, the stock of which is shared by both Chinese side and the foreign side. The second type is contract businesses, which benefits foreign capital enterprises mainly. The third is foreign businesses, which benefit foreign capital enterprises almost exclusively (Bian, 1994). Making profit is the main purpose of these firms; thus individual abilities are emphasized and rewarded. Since these companies may provide higher salaries than other companies, the 90's saw many college graduates and people having work experience in the public sector already going or transferring to "3 capitalist enterprises." In the 1990s in China, "Private business employees, on average, earned 3.7 times the income of workers in state firms, and workers in foreign-funded enterprises can earn 97 percent more annually than state workers"(Zhang, 1997). The popularity of foreign invested business is manifested through the high enthusiasm of

English learning in China. MBA programs are also increasingly popular. In recent years, thousands of people have applied for enrollment when a foreign university established a program in China even though enrollment has been limited to one hundred or so.

Working in a foreign company is an aim of many Chinese college students after their graduation.

As enterprises choose employees, employees consider the loss and benefits too in seeking a job. Most young couples now adopt a strategy that the husband works in the private sector and the wife in the public sector. This may ensure their sense of security in that the public sector provides the socialist welfare like housing, children's education, medical care, and the private sector provides the high monthly incomes from foreign companies. *If this is true, then when we examine gender, sector, and income, we should find that there are more men than women in the private sector, and that because the private sectors pay much higher than the public sector, part of the gender difference in income will be explained by the fact that women are more likely than men to work in the state sector. We also expect that because in the private sector more gender wage gap exists than in the centralized public sector, the effect of sectors will be greater for men than for women.*

## Chapter 3: METHODOLOGY

### Data Set

The China Housing Survey of 1993 conducted fifteen years after the economic reform is used in the present study. These data were collected in Shanghai and Tianjin, China, two large industrialized cities. The speed of reform in these two cities is moderate in the sense that it is faster than most other cities and lower than the southern cities such as Shenzhen and Guangzhou (Logan, Bian and Bian, 1999). Different kinds of work units of various natures in these two cities provide the setting of a more comprehensive view of the gender difference in income of urban China.

The total sample size for the two cities is 2,096 with 1,054 in Shanghai and 1,042 in Tianjin. The sample was drawn randomly from the neighborhoods of each city.

"Respondents were drawn from a randomly selected set of 125 neighborhoods, with one neighborhood from every subdistrict of the city" (Logan, Bian and Bian, 1999). Only one person in each household filled out the questionnaire. The response rate was nearly 100 percent. According to China Statistical Yearbook, there are about 34.7 percent employed female staff and workers in urban China (Qian, 1996). In this sample, the percent of working women amount for 35.7 percent.

The original study was designed to describe the respondents' housing conditions and residential history as well as family composition and family relations, work and work history, neighbor relations and neighborhood conditions. As its name indicates, the survey mainly focuses on housing. Even so, we may use these data to serve our purpose to study gender inequality in income. The data file provides relevant information on income, job opportunities, relationship with work unit leader, age, sex, education, marital

status, number of children, self-assessed health condition, employment status, and division of housework within the household. It is one of the most complete and thorough data files on gender inequality in China that is available. Since this data set is limited only to cities, the present study is relevant to the issue of gender income inequality patterns in urban areas.

The range of respondents' age is from 20 and above. The mean is 47 and the median is 44. The standard deviation is 13. The range is 71.

The unit of analysis for the data in the original study is the household. This person is referred to in the questionnaire as the respondent. The respondent also answered questions about spouse, children, parents, and parents-in-law. From these data, it is possible to compare the mean of wives' income that is reported by the husband respondents with the mean reported by the female respondents, and the mean of the husbands income provided by the wives respondents with those reported by the male respondents. The high level of agreement of the results of comparison of the means suggests that females accurately report their husbands' income. But husbands' reports of their wives income are not as close to the female respondents' answers of their income. This is probably due to the fact that many Chinese husbands do not take care of their family finances whereas their wives usually take charge of husbands' earnings. That is why wives may accurately know the husbands' income while husbands do not know wives' income.

**Variables:**

Dependent Variable: Respondents' income is measured by respondents' estimation of their own total monthly earnings. I talked with one of the investigators on

the study that generated the data used here, Dr. Yanjie Bian, about the two questions concerning respondents' income in the questionnaire. It was clear from this conversation that there is measurement error in the measure of income used in the present study. My use of this measure, the estimation of the respondent's total monthly income, assumes that Chinese people have a good sense of their total monthly income and that they should remember the average monthly amount of income they receive. Although there is measurement error for this variable, there is no reason to think it differs in direction or magnitude between men and women.

Independent variables:

1) Respondents' gender is coded 0 for females and 1 for males. 39.7% of all respondents are female. Among all working respondents, 35.7% are women.

2) Respondents' age in years is the difference between 93, the year of the survey, and the year of birth of the respondents. Again, the range for age was 20 and above.

3) Respondents' education is measured in eight categories from no formal schooling to graduate school. Since there are differences between 3-year and 6-year elementary school graduates, the elementary school category has been recoded to the approximate mid-point, in years of education; other categories have been recoded to the years needed for graduation, as follows: 0 = no formal schooling; 4.5 = elementary school; 9 = junior high school; 12 = senior high school, technical school and vocational school; 15 = 3 year college 16 = formal college; 18.5 = graduate school.

4) Respondents' health condition is self-assessed and is coded from low to high: 1 = in ill health; 2 = fair; 3 = good.

5) The housework done by each respondent is measured by a series of questions

asking how often the respondent does the following: grocery shopping; shopping for other daily needs; cooking meals; laundry; cleaning house; repair work; take care of parents when they need help; take care of children when they are sick; tutor children; play with kids. The respondents were asked how often they do any of those things: 1 = only in emergencies; 2 = once a year; 3 = several times a year; 4 = once a month; 5 = once a week; 6 = a couple of times a week; 7 = about everyday. The questions regarding parents and children were dropped since there is much missing data on these items. Responses of "not applicable" on the remaining items were coded "0", on the assumption that if, for example, cooking meals was "not applicable" for a respondent, that respondent did not cook meals. A factor analysis was conducted which yielded a single factor as shown in table 1. The Cronbach's alpha of the index is .84.

**Table 1. Factor matrix from principal component analysis of five housework items**

Items	Factor 1
Cook meals	.817
Do Laundry	.809
Do grocery shopping	.789
Clean your house	.785
Shopping for other daily needs	.685
Eigenvalue	3.043
% of variance	60.856

6) Respondents' guanxi is measured by whether the respondents' relatives have administrative positions. The relatives include respondents' spouse, parents and parents in

law. Administrative position is recoded into two categories with No administrative position as a category and Dept super, Division chief, and Bureau director as the other category. Responses of "don't know" were recoded to 0, which indicates that the respondents have no guanxi, on the assumption that if the respondents have guanxi, he or she will know it. The dummy variable is coded as 0 = no; 1 = yes.

7) Work unit sectors are recoded into two categories. 0 = public sectors; 1 = private sectors. Respondents are asked to provide information of their present nature of work units. There are nine categories: Governmental agency; State institution; State enterprise; Collective institution; Collective enterprises; 3-capital enterprise; Private joint management; Individual management; and Stock issuing company. These are then classified into two different sectors -- the public sector and the private sector, with the first six comprising the public sector, and the remaining categories the private sector (0 = public sectors; 1 = private sectors).

### **Analytical Procedure**

The data analysis began with a presentation of means, standard deviations of all the variables used in the analysis. In addition, bivariate correlation was done for all of the variables. Then, regression analysis was conducted to test each hypothesis. I started by analyzing the effect of gender on income with age put into the equation because age is an important contributor to income in China and therefore should be controlled. For all these analysis, only employed people are selected. Respondents' employment status consists of 1) self-employed; 2) temporarily employed; 3) contract worker; 4) contract system worker; 5) permanent employee; 6) retired and working; 7) retired; 8) in school; 9)



looking for job; 10) home maker. The cases of the first six categories are the basis for analysis.

Marital status distinguishes single; married; divorced; remarried after divorce; widowed; remarried after widowed. There is no significant gender difference as marital status is concerned and thus marital status is not included in the analysis.

Then I will see whether these factors in my hypotheses: education, health, guanxi, housework, and sectors have any effect on gender income differences in China. These factors may have different effects for male and female in terms of income. So, the interaction term of gender and these variables will be introduced in order to find out the effect of these factors on income for men and women. Regression analysis is used in the present study to test hypotheses. The income gap between men and women is easy to follow by comparing different models and by comparing the final model with the previous ones.

I will estimate the following equations using regression methods. The tests for each of the above hypotheses will be based on regression analyses of income on the independent and control variables as follows:

**1. Human Capital: Education**

$$\text{Income} = \text{Gender}$$

$$\text{Income} = \text{Gender} + \text{Age}$$

$$\text{Income} = \text{Gender} + \text{Age} + \text{Education}$$

$$\text{Income} = \text{Gender} + \text{Age} + \text{Education} + \text{Gender*Education}$$

**2. Human Capital: Health**

$$\text{Income} = \text{Gender} + \text{Age} + \text{Health}$$

$$\text{Income} = \text{Gender} + \text{Age} + \text{Health} + \text{Gender} * \text{Health}$$

**3. Feminism: Housework**

$$\text{Income} = \text{Gender} + \text{Age} + \text{Housework}$$

$$\text{Income} = \text{Gender} + \text{Age} + \text{Housework} + \text{Gender} * \text{Housework}$$

**4. Social Capital: Guanxi**

$$\text{Income} = \text{Gender} + \text{Age} + \text{Guanxi}$$

$$\text{Income} = \text{Gender} + \text{Age} + \text{Guanxi} + \text{Gender} * \text{Guanxi}$$

**5. Sex Segregation: Sector**

$$\text{Income} = \text{Gender} + \text{Age} + \text{Sector}$$

$$\text{Income} = \text{Gender} + \text{Age} + \text{Sector} + \text{Gender} * \text{Sector}$$

Finally, based on the findings from the above analyses, I will construct a final model including all significant variables using regression analysis.

## Chapter 4: FINDINGS

Means and standard deviations for variables of men and women used in the analysis are presented in Table 2.

**Table 2. Means and standard deviations of variables used in the analysis**

	<u>Mean</u>		<u>Standard Deviation</u>	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
Estimation of monthly income (in yuan)	342.93	304.99	147.44	155.12
Age of the respondent (in year 1993)	43.449	40.441	10.648	9.477
Education (in years)	10.935	10.381	2.992	3.138
Self-reported health condition	2.546	2.642	0.608	0.615
Housework index (How often the respondent does it.)	19.328	28.404	9.562	6.882
Guanxi (Relative's administrative status, Yes=1)	0.183	0.338	0.387	0.473
Sector (Private sector=1)	0.057	0.043	0.231	0.202

The bivariate correlation matrix is presented in Table 3. As shown in the correlation matrix, gender and age are associated. Education is related to income and gender. Health has association with income, gender, age and education. Housework is negatively associated with income, gender and age. Guanxi is negatively associated with gender, age, education and housework. Private sector is associated with a higher income, better health, but negatively related to housework and guanxi.

**Table 3. Correlation matrix for all variables in the analysis**

	1	2	3	4	5	6	7	8
1. Estimation of monthly income (in yuan)	1.000	0.120***	0.004	0.164***	0.177***	-0.094***	0.048	0.254***
2. Gender (male=1)		1.000	0.139***	0.087***	0.064*	-0.447***	-0.174***	0.030
3. Age of the respondent in year 1993			1.000	-0.186***	-0.269***	-0.101***	-0.087***	-0.016
4. Education in years				1.000	0.070**	-0.021	0.138***	-0.013
5. Self-reported health condition					1.000	-0.042	0.027	0.061*
6. Housework (How often the respondent does it)						1.000	0.120***	-0.073**
7. Guanxi (Relative's administrative status, Yes=1)							1.000	-0.150***
8. Sector (Private sector=1)								1.000

\* P <= .05

\*\* p <= .01

\*\*\* p <= .001

Results of the regression analysis are in tables 4 to 9. The regression of income on gender in table 4 shows there is a difference for the mean income of employed men and women. The first model tests whether there is gender income inequality. Gender has a positive effect on the difference of income in urban China. Men generally earn 37.936 yuan more than women. R square is 0.014 which indicates that 1.4 percent of the variation in income can be explained by the difference of gender. As such, model 1 in table 4 confirms the finding that in urban China, there is gender difference in income.

In model 2 of the table, age is added to the regression equation, but since the p value is large, there is no effect of age on the relationship of gender and income. The fact that age has no effect on the income gap of urban people indicates there are changes from the past situation when age was an important determinant of monthly earnings to the present condition that young people began to earn more money.

To test the first hypothesis of the relationship of gender income inequality and education, education is controlled in model 3. The results show that people with higher education are more likely to receive higher income. With one year's increase in education, there is an increase of 7.847 yuan (about 1\$) in monthly earnings. Besides, education has a partial effect on the relationship of gender and income. The mean income gap of men and women is reduced to 32.795 when education is controlled. However, with the same education, women still earn 32.795 yuan less than men. The interaction term of education and gender is introduced to see whether the effect of education is different for men and women. The interaction term is not significant.

**Table 4. Regression of income on gender, age, education and the interaction of gender and education; unstandardized coefficients**

	Model 1	Model 2	Model 3	Model 4
Gender (male=1)	37.936***	38.507***	32.795***	40.976
Age of the respondent in year 1993	--	-0.19	0.286	0.292
Education (in years)	--	--	7.847***	8.333***
Education x gender	--	--	--	0.762
Intercept	304.989	312.665	211.887	206.598
R square	0.014	0.015	0.039	0.039
N	1562	1562	1562	1562

\* p <=.05  
 \*\* p <=.01  
 \*\*\* p <=.001

Table 5 presents the results of regression of income on gender, age, health and the interaction of gender and health. Like in table 1, age has no effect on either the income difference or the relationship of income and gender. Controlling for age, self-reported health condition has a positive effect on income. The healthier one is, the more income one obtains. With one unit increase in health, there was a 45.228 yuan increase in income for the combined sample of men and women. After health is controlled, men and women's income difference is reduced to 29.924. With the same health condition, women still get 29.924 yuan less than men. The unstandardized coefficient of gender in model 3 is not significant. The interaction term of gender and health is not significant either.

**Table 5. Regression of income on gender, age, health and the interaction of gender and health; unstandardized coefficients**

	Model 1	Model 2	Model 3
Gender (male=1)	38.507***	29.924***	-14.656
Age of the respondent in year 1993	-0.19	0.636	0.628
Self-reported health condition	--	45.228***	33.744***
Gender x health	--	--	17.893
Intercept	312.665	167.823	196.431
R square	0.015	0.043	0.045
N	1562	1524	1524

\* P <= .05  
 \*\* p <= .01  
 \*\*\* p <= .001

Table 6 shows the regression of income on gender, age, housework and the interaction of gender and housework. Age fails to be significant again. The variable housework, which is an index of several items, does not seem to be a strong factor leading to the income difference. It is significant at one tail level though. Housework has a weak negative effect on income. With one unit increase in the housework done by the respondent, the income will be decreased for 0.802 yuan. Since the interaction term is not significant at .05 level, the effect of housework is roughly comparable for the income of men and women. Again, the unstandardized coefficient of gender fails to be significant in model 3.

**Table 6. Regression of income on gender, age, housework and the interaction of gender and housework; unstandardized coefficients**

	Model 1	Model 2	Model 3
Gender (male=1)	38.507***	31.310***	60.502
Age of the respondent in year 1993	-0.19	-0.219	-0.255
Housework index (How often the respondent does it)	--	-0.802+	0.05
Gender x housework	--	--	-1.104
Intercept	312.665	336.642	313.763
R square	0.015	0.017	0.017
N	1562	1562	1562

\* p <=.05  
 \*\* p <=.01  
 \*\*\* p <=.001  
 + p <=.05 one tail



The next factor to be considered is guanxi as in table 7. Age is not significant in model 2 and 3. The same regression model is done which considers the impact of guanxi on gender wage difference. As we can see from table 1 and table 2, women have more guanxi than men. The suppressor effect of guanxi made the gender wage gap even larger. With the same amount of guanxi, men's income will be higher than women. One must remember that for purposes of study, guanxi is indexed by the administrative positions of the respondents' spouses, parents, and parents in law. Female respondents' spouses are more likely to be in administrative positions than male respondents' spouses. 22% of female respondents' spouses hold administrative positions. 8.6% of male respondents' spouses hold administrative positions. For the combined sample of men and women, the income of those with guanxi is on average 25.185 yuan more than those who have no guanxi. The interaction term of gender and guanxi fails to be significant.

**Table 7. Regression of income on gender, age, guanxi, and the interaction of gender and guanxi;**

**unstandardized coefficients**

	Model 1	Model 2	Model 3
Gender (male=1)	38.507***	42.218***	39.788***
Age of the respondent in year 1993	-0.19	-0.122	-0.118
Guanxi (Relative's administrative status, Yes=1)	--	25.185**	20.270
Gender x guanxi	--	--	8.993
Intercept	312.665	301.388	302.876
R square	0.015	0.019	0.02
N	1562	1562	1562

\* p <=.05  
 \*\* p <=.01  
 \*\*\* p <=.001

In the regression of income on gender, age, sector, and interaction of gender and sector, a big income difference is found between those who are in the public sector and in the private sector. The mean income gap between these two sectors is 170.947. People in the private sector earn much more than people in the public sector. Part of the gender difference in income is explained by the difference of sectors. Age again is found to not affect income. The interaction term of gender and sector is not significant.

**Table 8. Regression of income on gender, age, sector, and the interaction of gender and sector**

	Model 1	Model 2	Model 3
Gender (male=1)	38.507***	31.541***	31.426***
Age of the respondent in year 1993	-0.19	-0.005	-0.005
Sector (Private sector=1)	--	170.947***	169.2***
Gender x sector	--	--	2.475
Intercept	312.665	300.948	301.024
R square	0.015	0.075	0.075
N	1562	1526	1526

\* p <=.05  
 \*\* p <=.01  
 \*\*\* p <=.001

The step that follows is to get a final model using the regression of income on the factors specified in the study. Since no interaction terms are significant, none of them is included in the final model. The unstandardized coefficients show that the gender income gap has decreased from 38.507 to 19.170. This shows that the factors specified in the hypotheses explain half of the gender difference in income. Gender causes difference in education, health, housework done, guanxi and sector which in turn result in income differences. There may be some other factors that may explain the gender wage gap, or even if there are such factors, they could not explain to one hundred percent of the income difference of men and women. The variable age in table 4-8 is not significant, but in table 9, it is significant. With one year's increase in age, there will be a 1.117 yuan increase in income. The effect of age may be covered by other variables in tables 4-8. This conclusion is an unconfirmed interpretation rather than a demonstrated fact.

**Table 9. Regression of income on gender, age, education, health, housework, guanxi and sector; unstandardized coefficients and standardized coefficients**

	Model 1	B	Beta
Gender (male=1)	38.507***	19.170*	0.061*
Age of the respondent in year 1993	-0.19	1.117**	0.075**
Education (in years)	--	6.84***	0.136***
Self-reported health condition	--	39.875***	0.162***
Housework index (How often the respondent does it)	--	-0.336	-0.022
Guanxi (Relative's administrative status, Yes=1)	--	19.449*	0.055*
Sector (Private sector=1)	--	168.689***	0.246***
Intercept	312.665	89.175	--
R square	0.015	0.12	0.12
N	1562	1488	1488

\* p <=.05  
 \*\* p <=.01  
 \*\*\* p <=.001

## Chapter 5: CONCLUSIONS AND DISCUSSION

### Summary of Findings

The present study has focused on gender income inequality, one of the most important aspects of inequality, in urban China during the period of economic reform, using quantitative method and a sociological perspective. Using data from the China Housing Survey of 1993, this research explored the impact of education, health, guanxi, housework, and sectors on gender inequalities in income. The major finding of this analysis is that none of these factors, by itself, explains gender inequality in income in urban China. In addition, none is the major factor in gender inequality. However, these factors, taken together, do explain half of the gap between men and women in income in urban China.

The findings show that there is a gender income gap between men and women though not very large. The ratio of women's income to men's income in the present study is 89%, while in the U.S., the ratio is only about 74% in 1991 (U.S. Bureau of the Census, p. 412). Thus there is relatively little gender inequality in income in China. Half of that small gap is accounted for by the predictor variables in this thesis.

The hypotheses discussed in chapter 2 suggest that the differences between men and women in human capital, social capital, housework, and sectors in which one works would explain the gender difference in income in China.

Hypothesis 1 stated that education would explain gender differences in income. This hypothesis is concerned with the human capital assumption that human capital plays the key role in determining women's less income than men. It is true that some of the gender difference in income is explained by the difference of education between men and

women. The finding shows that education and gender are positively related. When education is controlled, the income difference between men and women decreases. This suggests that difference in education is an important factor that causes part of the income difference between men and women. However, the effect of education on income was not found to be greater for men than for women.

Hypothesis 2 stated that health would explain gender differences in income. Health is a second aspect of human capital. Findings indicated that, as with education, health reduces the gender income gap, but the effect of health is the same for men and women.

These first two hypotheses support the human capital theory. Since socialism should ideally reward people according to their needs, the strength of human capital factors suggest that market forces are important for income and challenge the traditional idea that knowledge is useless for women.

Hypothesis 3 stated that guanxi should explain gender differences in income. It is a supplementation of the human capital theory considering the specific cultural background of China. Guanxi as social capital is a determinant of many aspects of social and economic life. Guanxi is so embedded in the Chinese culture that its importance cannot be neglected. According to this hypothesis, gender differences in income should correlate with differences in the amount of guanxi that men and women possess. However, an important finding is that women have more guanxi than men. This is probably because women's husbands are more likely to be in administrative positions than themselves. The measurement of guanxi is an index of several relative's administrative positions including the respondent's spouse, father, mother, father-in-law and mother-in-law. It is also probably because women's parents are more likely to be alive as shown by the statistics.

In addition, the effect of guanxi on income does not vary by gender. Therefore, the guanxi factor is not as important a determinant of the gap in gender income as human capital factors.

Hypothesis 4 stated that housework would explain gender differences in income.

However, findings show that housework does not significantly influence income for either men or women, and thus it cannot explain the gender differences in income.

Hypothesis 5 stated that sector segregation would explain gender differences in income.

As expected, the private sector pays much higher than the public sector, and women are more likely to be found in the public sector. Part of the gender difference in income is explained by sector, but the effects of sector are the same for men and women.

Prior to the economic reform of 1978, although Chinese men and women had similar opportunities in the workplace, both men and women were ordinarily unable to freely choose their occupation. The system did not improve Chinese people's income since high income was regarded as the symbol of capitalism. I assume that if Chinese society had remained the same as before the economic reform social and economic status of women and men would have remained unchanged. However, since I have no access to information about income inequality between men and women in Urban China before the economic reform, it is not possible for the present study to ascertain whether gender income gap increased or decreased because of the reform.

The gender gap in income in China is all the more important because it is associated with gender differences in power and privilege within the family. Marx said that the economic foundation determines the superstructure. This holds true within a



family. Women's economic status in most cases heavily influences their status in their families.

The present study suggests that the income inequality between men and women mainly comes from market forces. Market factors are reflected in the effects of education, health, and sector which are the primary areas in which women suffer disadvantages that result in their lower income. This suggests a significant change from the situation after the 1949 revolution and during the period of the culture revolution, when human capital and the free market were strongly de-emphasized.

### **Limitations and Suggestions for Future Studies**

The present study is limited to samples gathered from two large industrialized cities. Though these two cities have a variety of work units and different sectors, the market forces are not the strongest in China. If the nature of the market is the main factor that has impact on the inequality of income of men and women, which in turn leads to other inequalities of men and women, then the present analysis does not reveal the utmost inequality patterns of men and women in income. The regional difference then should be considered for the future studies.

Additionally, the individual factors in the present study are considered as theoretically based and as comprehensively as possible to explain the gender income difference. However, these factors do not explain all of the gender income gap, still half of the income inequality is not explained by these factors. Future research should note other factors that might possibly affect the gender income gap in Urban China. For example, a close examination of the relationship of income and age may be made. One suspect that age does not affect income significantly may be that there is a curvilinear

model instead of a linear model for the relationship of income and age. The other explanation may be that age probably functions in terms of fewer categories instead of as a continuous variable.

The sources of guanxi are multiple. Guanxi may be developed through relatives and friends, even through friends of friends or friends of relatives. Guanxi in the present study is measured only in terms of relatives, not friends. Maybe men have more connections or guanxi out-of-family than women do. 22% of female respondents' spouses hold administrative positions. 8.6% of male respondents' spouses hold administrative positions. In future analysis, a more comprehensive measure of guanxi should be obtained.

I talked with one of the investigators on the study that generated the data used here, Dr. Yanjie Bian, about the two questions concerning respondents' income in the questionnaire. It was clear from this conversation that there is measurement error in the measure of income used in the present study. My use of this measure, the estimation of the respondent's total monthly income, assumes that Chinese people have a good sense of their total monthly income and that they should remember the average monthly amount of income they receive. Although there is measurement error for this variable, there is no reason to think it differs in direction or magnitude between men and women.

The present study does not tap the discrimination against females in the process of job allocation in the public sector or the private sector. As the reform goes deeper, the income difference between men and women is likely to change. Even in the public sector, women face challenges from market forces as primary goal of public sectors become the pursuit of profit. The problem is that public sectors are becoming increasingly

autonomous with less control from the central government. In recent years, more women than men were persuaded to retire early or to stay at home while receiving only a proportion of their regular salary. New data should be gathered to discern these changes that occur to the women work force in the public sector of urban China.

Finally, in the future study, the focus may be shifted from income alone to a combination of income and wealth accumulation.

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### **Vita**

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