

Writing a Senior Honors Thesis:

Trends in Income Distribution in China and Implications on Migrant Workers

Shuhan Zhou

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Abstract

China's income distribution has experienced tremendous changes since the economic reform. Labor economists have reached a consensus that the income inequality has spiked in the decade from 1980s to 1990s while there has been some debate for the following decade in its income distribution trend. Along with the economic reform, the unparalleled enormous internal migration population has become an essential composition in the labor force and been driving the directions in policy making. This paper studies the changes in dispersion of urban income distribution using data from Chinese Household Income Project through density decomposition methodology and its implications on migrant worker through theoretical framework, aiming to provide a fresh perspective on this issue.

Introduction

China's economic reform is intended to replace the existing socialist economy system with a capitalized market economy. Along with the increase in economic growth, improvements will also be seen in productivity, financial investment, income distribution, and this historical reform will benefit individuals in many sectors and levels of economic engagement. Likewise, the more relaxed economic environment will continue to facilitate improvements in labor mobility, both geographically and across occupations. The reform has also accelerated the demand in metropolitan areas for jobs in the service and development sectors, including construction, services, and manufacturing. The hiring standards in these industries are relatively low, and the requisite skills can be developed through short-term training. Because of policy biases that favor urban areas, urban employment often means a higher income level, and residence in such areas also grants

access to better public services and human development opportunities. For these reasons, young adults from rural areas who formerly worked in agriculture flood into the cities in pursuit of better wages than those available through the traditional agriculture commodity exchange. Members of this new urban demographic are customarily called “migrant workers.” According to “2012 National Survey on Migration Workers” undertaken by the National Bureau of Statistics of China, the number of these workers had grown to 26.26 million by the end of 2012, a 3.9% increase over the preceding year. As such, migrant laborers constitute approximately one third of the 78.2 million workers in the national labor force. Liu (1995) also emphasizes the urgency of rural reform, focusing on internal labor migration and stressing the importance reform in achieving social stability as well as the elimination of unemployment and poverty. The social and economic wellbeing of these workers is essential for the economic performance of the country, and meaningful policies must proceed from proper understandings of the implications of current income distribution mechanisms for migrant workers.

The China Household Income Project is conducted approximately every ten years, and its data are widely utilized in labor economics research on China. The last two surveys were conducted in 1995 and 2002, during a period of major economic transition in which the Chinese economy began to exhibit its ongoing rapid growth. This study focuses on labor economics data for the individual level, a reliable information source for examinations of the income distribution alteration that occurred during this transitional period. The present study will utilize data drawn primarily from urban workers to

investigate urban labor market and infer the impact of these changes on the livelihoods of migrant workers.

In pursuit of these goals, I intend to employ the Oaxaca Decomposition and density estimation to answer the following questions: 1) How did the labor market change during these seven years? 2) Did the returns to education or experience in China increase during this period as they have in many other countries undergoing similar transitions? 3) Did Chinese society become more unequal in terms of earnings? 4) What factors determined the more dispersed income distribution that developed during this period? 5) Have these changes been beneficial for migrant workers? 6) Which parts of the labor force were more likely to benefit or be harmed by this transition? 7) What are some suggestions for employees who desire improved living standards and higher earnings?

The structure of the paper is as follows. Section two is literature review; section three is a description and analysis of the data; followed in section four by a critique and reflection. The final section is devoted to conclusions and suggestions for future researchers.

Literature Review

In the previous literature, Khan & Riskin (2005) examines income inequality changes over the three adjacent decades from the 1980s to the 2000s. They find that “The 2002 survey revealed a complex result: inequality of household income distribution somewhat unexpectedly declined, compared to 1995, in both rural and urban China taken separately. In both, the fall was connected to a marked decline in regional (inter-provincial)

inequality. In rural but not urban China, the decrease was broad-based in that a majority of the provinces experienced declining inequality” (Khan & Riskin 2005). Nonetheless, Khan & Riskin (2005) did not explain in any great detail either their methodology or the data utilized to arrive at their conclusion that income inequality diminished in 2002. These authors also admitted in a footnote that their findings on income distribution change could only be regarded as tentative because of their study relied on a small sampling of provinces. Gao & Riskin (2006), on the other hand, come to quite a different conclusion. These researchers offer the opposite assessment of income change from 1995 to 2002 with the assertion that “Urban income inequality increased significantly from 1988 to 1995, and rose again very slightly in 2002. Such a general trend was dominated by the great rise in market income inequality from 1988 to 1995.” Further, Gao & Riskin (2006) attribute their differences with the Khan and Riskin studies to the differing definitions of income employed in the respective studies. Health benefits and other social benefits are included the definition employed by Gao & Riskin (2006) while the income as defined by Khan & Riskin (2005) is constituted merely by compensation from the labor contribution, namely market income: an earning assessment that omits social welfare benefits. In China, urban social benefits on the whole have been distributed more unequally than market income, which makes the increase in inequality of income under the broader definition of Gao and Riskin reasonable. Similarly, Li (2013) believes that China’s sparse government income transfer, which can be regarded as a social benefit, plays an important role in the nation’s high rate of high-income inequality.

Instead of focusing on the results, Wu (2000) claims that the most common methodologies used to measure inequality in the previous literature are the use of Gini

coefficients and price deflators. Nevertheless, this author finds both research methods are problematic. Without detailed information about the computation process, Gini coefficients cannot simply be compared according to their nominal values. As for GDP deflators, regional variations are rarely taken into consideration, and there is no agreed criterion for an official GDP deflator as a common point of reference. Jenkins & Kerm (2004) suggest an alternative approach for research focusing on income distribution trends: a PDF decomposition methodology. This approach assumes, “The change in a density may be decomposed into terms accounting for the effects of changes in subgroup population shares and in subgroup densities,” which is similar in essence to Oaxaca Decomposition method commonly employed in the study of labor economics. One remarkable advantage of decomposition methods is that the results are not dependent on the choice of a specific summary index. Consequently, the results produced by researchers who have selected different indexes are easily compared, which is not the case for methodologies that utilize Gini Coefficients and GDP deflators.

In the data for this study, income includes local subsidies, price subsidies, allowances, and bonuses, as well as living expenses for the unemployed. Since income is averaged into hours, we can regard the real hourly income as the market income, omitting subsidies and cash transfers. The goal of this paper has been to perform a density decomposition analysis on the 1995-2002 CHIP survey and to prove the existence of an increasing income inequality in the market income distribution that has come to characterize the Chinese labor market.

Data Description

For this research, I utilize data collected from two surveys by the Chinese Household Income Project (CHIP) undertaken in 1995 and 2002 to determine the factors responsible for the changes in real hourly income distribution. Among the datasets included in each survey, the “Urban Individual Income, Consumption and Employment Data” is employed specifically to conduct the following analysis. The questionnaires for these two years are comparable. However, the 2002 dataset has a variable “*hukou*,” or household registration record, which provides detailed resident status information of the participants while the corresponding dataset of 1995 does not include any such a variable or similar information. The 1995 dataset only focuses on individuals who already have an urban resident status. In the dataset for 2002, there are four possible values for the *hukou* variable, indicating four different resident statuses, namely the urban *hukou* of the resident city (county), rural *hukou* of the resident city (county), urban *hukou* of non-current-habitat city (or county), rural *hukou* of non-current-habitat city (or county). The share of observations under the first category makes up more than 97% of the survey population, thus we can regard the samples as comparable across the two years in terms of their residential status.

The survey does not require participants to report their hourly wage or income because most people are paid on a monthly or yearly basis and may not be aware of their hourly earnings. Instead, the survey includes a question on gross income and researchers design survey questions to reflect the total working hours in a month or week. Nevertheless, the time measures adopted by these surveys are not consistent over the years, and this may introduce measurement errors into the computation. In 1995, the survey sought the actual number of work hours on an average day and average number of work days per week; consequently, I multiplied the product of these two numbers by 52, the average number of weeks in a given year, to obtain the total working

hours of an individual worker for the year 1995. As a comparison, in 2002, the survey requests as its basic units the working hours on a typical day and the working days per month. Even though the product of these two numbers multiplied by 12, the total number of months in a year, yields the total working hours of the year 2002, a measurement error is still likely due to the differences in measurement scales.

One big flaw of the survey is that total wages are reported for 1995 but for some unspecified reason, the 2002 survey has absolutely no information on wages. Generally, wages are a more accurate measure for labor economics studies than income because income may also contain bonuses, subsidies, and other sources of non-labor earnings; due to the inconsistency of the survey design and the lack of data for year 2002, I have had to choose hourly income as the dependent variable in this paper.

For the communist party membership indicator, in the 1995 survey, participants simply report yes or no to the question whether they are members of the party; but in year 2002, the variable incorporates information on communist youth league membership as well. For the sake of consistency, I have included people in the communist youth league as members of the communist party and recoded the party variable of 2002 as a dummy variable because a considerable number of young people will join the communist party when they reach a certain age, and the youth league can provide workers protection and benefits. Only people who report themselves as working or employed have been selected for this study. Since the reported income is nominal, in preparation for the comparative analysis of the two years, I have deflated them into real income through the equation, $real\ income = nominal\ income * \frac{CPI\ current\ year}{CPI\ base\ year}$; and for reference I chose the year 1994 as the base year. Consumer Price Indexes are collected from

China Data online; since urban residents are the most representative group in this survey, I have selected the Consumer Price Index for urban areas to compute real income.

In order to discard the outliers in labor economics analysis, researchers usually exclude observations that tally wages below minimum wage. Likewise, in this study, workers making less than the minimum wage also are not the main subjects of interest. However, official regulations regarding minimum wage were not established until 2003; thus there is no official guideline for such a minimum requirement in 1995 or 2002. In this case, deleting the bottom 1% is more reasonable than establishing an arbitrary threshold.

The dataset for this study includes a male dummy, employment status, marital status, communist party membership, years of education, years of working experience, ownership of the work place, the sector of the individual's employment, and, lastly, real hourly income. After eliminating missing values, 10140 observations from year 1995 and 6698 observations from year 2002 remain.

Summary of Statistics

We will begin with a summary of statistics for an overview of the data. Table 1 in the appendix indicates that 53% of the participants are male workers; 89% of the employed workers are married; and 26% of them affiliate with the communist party. Among all the workers in the sample, the average educational attainment is 11 years, which is equivalent to completing the 11th grade of high school in the United States. The average years of working experience are 20. The average hourly income is only 3 yuan per hour, while the median is 2.55, which suggests that the hourly income distribution is skewed to the right.

For year 2002, the table shows that 56% of the participants are male workers, about three percentage points higher than 1995. 87% of the employed workers are married, and 26% are

affiliated with the communist party. Among the total population of workers in this study, the average years of education and average years of experience are the same as in 1995. The average hourly income is 4.0 yuan per hour, an increase of 33% compared to 1995. While the median is now 3.13 yuan, an increase of 23% compared to 1995. The difference in the rate of increase between the median and mean values indicates that the hourly income increased more rapidly for people earning above the median. From the t-test for the year 1995 and year 2002, the figures for male workers in the labor force, their years of experience, their total working hours, and the real value of their hourly income are all significantly higher in 2002, while the share of married workers in the labor force decreased. We are happy to see that workers earn more in real value per hour; but at the same time, they must improve their personal qualifications and work longer hours to earn that increase. This is an indication that the labor market is raising its standards and expectations of its workers. Next, I will use four different regression models to predict the influence on real hourly income of individual characteristics and factors relating to the workplace.

Regression Analysis

Four fixed effect regression models listed below are implemented to predict the factors influencing real hourly income change. Ownership and sector are treated as factors in the regression.

Model 1:

$$\begin{aligned} \text{real hourly income} \\ = \alpha + \beta_1 \text{male} + \beta_2 \text{marital} + \beta_3 \text{communist} + \beta_4 \text{educ} + \gamma_1 \text{exp} \\ + \delta_1 i. \text{ownership} + \delta_2 i. \text{sector} \end{aligned}$$

Model 2:

$$\begin{aligned} \text{real hourly income} \\ = \alpha + \beta_1 \text{male} + \beta_2 \text{marital} + \beta_3 \text{communist} + \beta_4 \text{educ} + \gamma_1 \text{exp} + \gamma_2 \text{exp}^2 \\ + \delta_1 i. \text{ownership} + \delta_2 i. \text{sector} \end{aligned}$$

Model3:

real hourly income

$$= \alpha + \beta_1 \text{male} + \beta_2 \text{marital} + \beta_3 \text{communist} + \beta_4 \text{educ} + \gamma_1 \text{exp} + \gamma_2 \text{exp}^2 \\ + \delta_1 i. \text{ownership} + \delta_2 i. \text{sector} + \sigma \text{communist} * \text{educ}$$

Model 4:

real hourly income

$$= \alpha + \beta_1 \text{male} + \beta_2 \text{marital} + \beta_3 \text{communist} + \beta_4 \text{educ} + \gamma_1 \text{exp} + \gamma_2 \text{exp}^2 \\ + \delta_1 i. \text{ownership} + \delta_2 i. \text{sector} + \sigma \text{communist} * \text{exp}$$

Model 1 is a basic linear model with categorical variables for sector and ownership, while Model 2 adds to Model 1 a quadratic form for the experience variable. In Models 3 and 4, interaction terms of the communist membership dummy with education and experience are included, respectively. Please refer to Table 2 and Table 3 for the regression results.

The results demonstrate that the male dummy is significant across all four models and the coefficient maintains a value of 0.2 over the four models, meaning that in terms of ownership and sector male workers make on average 0.2 yuan more per hour than females with the same qualifications in the same working environment. The marital status dummy is only significant in the simple linear model; married workers make on average 0.24 yuan more than their non-married counterparts. It is worth noticing that the significance of marital status disappears once I control experience squared, meaning marital status has less influence on a person's hourly wage than experience. In addition, communist party membership can also bring practical earning increases. As shown in the table, the communist member dummy remains significant across all models, but the magnitude of its effect upon earning fluctuates for each model. Without the interaction term, communist party membership can raise a person's wage by 0.3 yuan. If interactions with experience and education are taken into account, party membership can raise a person's hourly income by as much as 0.47 yuan, which is equivalent to 10% of the mean hourly income for the year 1995. Since the interaction terms are not statistically significant, there is no indication that communist party membership brings a higher wage premium to better-educated

workers or more experienced workers. Overall, education and experience are the main determinants of hourly income.

With the values of the coefficients for experience and experience squared, I can predict that experience contributes to earnings until it reaches the 50–60 years of experience range, an extremely long employment duration that few workers reach. If we assume people join the labor force right after finishing high school and retire at the age of 60, experience will continue adding benefit to one's real hourly income. In this way, people will not retire before the full retirement age because of concern over the decrease in real income that results from their redundant experience. Models two through four predict that one more year of either education or experience can increase earnings by 0.03–0.04 yuan per hour. With this finding, I can state the following hypothesis: given that both kinds of workers will work in the same professional setting and possess exactly the same personal attributes, such as gender, marital status, and party membership, if any given worker decides to leave school and join the labor force immediately, he or she will have no disadvantage compared to his or her peers who remain in school and join the labor force thereafter. However, in the long term, equal returns for education and experience are not healthy for economic growth. Education requires financial investment to cover tuition costs, while working full time generates immediate monetary gains; if an individual is shortsighted, he or she will probably choose an additional year of professional experience over another year of academic preparation. If a significant portion of the workforce chooses this path, then the educational attainment of the population as a whole will remain relatively low, leading to reductions in the technological innovation, research, and development, the main driving forces of the economy.

When it comes to the categorical variable, sector, regression results demonstrate that employees in the social service sector make significantly more than people in farming, husbandry, forestry, and fishery, which are the omitted category in the regression. Other than that, there is no obvious hourly income gap across sectors. Workers in local state-owned enterprises and urban collective work places make on average 0.36 and 0.66 yuan less than people working in central or provincial-level state-owned enterprises. On the other hand, employees at Sino-foreign joint ventures and foreign-owned enterprises are greatly favored in income distribution. Workers from foreign-owned companies can make 4.3 yuan more per hour than they would elsewhere, and this difference is nearly as large as the average income per hour for 1995. These findings correspond to the economic reform policies during the 1990s. Work units are the providers of social welfare, and firms' profit levels directly influence the total wages distributed. Subsequent to the economic reforms, state-owned enterprises and foreign-owned corporations have enjoyed preferential economic policies. Consequently, their profit levels are significantly higher than firms of other ownerships, and they can provide better compensation for their employees. The economic reform has shattered the previous equal socialist economy and replaced it with a diversified market economy.

As for year 2002, males retain their existing advantages; gender wage premiums have even increased from 0.2 yuan to the current level of 0.35 yuan. Similarly, there have been no significant changes in the return for experience. What have changed are the returns to education, which have risen from 0.03 yuan to 0.25 yuan in a mere seven years. Party members no longer earn more, as was predicted in Models 3 and 4. Apart from employees at local state-owned enterprises and urban collectives, self-employed workers earn significantly less than what they would earn at central or provincial-level state-owned enterprises. The difference is as large as

0.88 real yuan per hour for self-employed workers. Both Sino-foreign joint venture and foreign-owned companies can provide their employees with better compensation, with hourly wages advantages of 1.4 yuan and 2 yuan, respectively. However, the additional income advantage of working for a foreign-owned company has shrunk from 3.5 yuan to 2 yuan, or 43%. State share holding companies have also joined this trend of providing better compensation for their employees. The previous variance in pay for identical workers across sectors disappeared in 2002. Compared to the 1995 survey, the 2002 survey uses different codes to represent ownership and sector, deploying two variables in more detailed categories. I use the 1995 code as my criterion and recode 2002 for later comparison analysis.

The above analysis answers the question concerning the factors that influence individuals' real hourly income. The cumulative economic performance of all individual earners comprises the income distribution of the entire labor market, and reflects the overall condition of the economy. In the next part of my analysis, I will focus on the evolution of income distribution from 1995 to 2002, employing density plots to visualize the distribution change. Regression models for both years show that the quadratic form for the experience variable is necessary, but the two interaction terms are not available for use in regressions. Therefore, Model 2 has been selected for the remaining part of my analysis.

Density Estimation

The density plots for 1995 and 2002 inform us that the spread of the 2002 income distribution has increased from 1995 and covers a wider range of values. This means that income gap between the rich and the poor has grown significantly. Income inequality may be decomposed into the changes in worker attributes and the improvement or deterioration in the

returns for these attributes. Hence, the next stage of the analysis is to compare the distributions after decomposition and determine whether worker characteristics or returns for attributes enlarge the gap. Drawing inspiration from the Oaxaca Decomposition, one may multiply the coefficients from the previous regression model for 1995 with the covariates of 2002: namely, $\beta^{1995} * X^{2002}$. The comparison of $\beta^{1995} * X^{2002}$ with the predicted value of real 1995 income from 1995 model, $\beta^{1995} * X^{1995}$ reflects the adjustment in income distribution caused by the change in worker attributes. Similarly, the comparison between $\beta^{2002} * X^{1995}$ and $\beta^{1995} * X^{1995}$ depicts the effect of returns on income distribution for workers' attributes. In order to better compare the four distributions, all data have been centralized at their mean value. See Figure 1.

As indicated in the legend, the 1995 predicted incomes represent the hourly income predicted by the 1995 data. In other words, these values are equivalent to $\beta^{1995} * X^{1995}$. The 1995 data multiplied by the 2002 coefficients represents the hourly income for 1995 predicted by the covariates collected in 1995 and multiplied by the coefficients of the 2002 model, i.e. $\beta^{2002} * X^{1995}$. Similarly, the 2002 predicted income is represented by $\beta^{2002} * X^{2002}$ and “2002 by 1995” represents $\beta^{1995} * X^{2002}$. The standard deviation of the income distribution changes from 0.760 in 1995 to 1.302 in 2002, and the dispersion almost doubles over a seven-year period. The standard deviation of $\beta^{2002} * X^{1995}$ is 1.379, which is even larger than the product of $\beta^{2002} * X^{2002}$. As a comparison, the standard deviation of $\beta^{1995} * X^{2002}$ is 0.788, only slightly larger than the 0.760 of $\beta^{1995} * X^{1995}$. Thus, we can conclude that the wider income distribution of 2002 hourly income results from the coefficients, including the return to education, the return to working experience, and income premiums by gender and communist party membership, as well as the intrinsic difference in compensation across work places.

Yet the β is the vector of a list of elements; if we want to determine specifically which element of the coefficient enlarges the distribution the most, we need to alter the value of one element at a time to separate the individual effect of that single element from the overall effect of the compiled coefficient matrix. After we change just the value of the coefficient for males to the corresponding 2002 value, while leaving the rest of the coefficients as they are, there is very little change to the density plot (as presented in Figure 5). The standard deviation of hourly income distribution changes by 0.028. Next, these exercises are repeated for the remaining variables. Similar findings apply for the marital status and communist party membership dummies as well. In all cases, the standard deviations change very little. The standard deviations for changing the value of the coefficients for the marital status and communist party membership dummies are 0.783 and 0.788, respectively.

The case for the “experience” variable is slightly more complicated because it is included in the regression as a quadratic form. I will first change the coefficient on the linear form and, after that, the quadratic form. Finally, I will change both forms simultaneously. The standard deviation shrinks only slightly with changes in value for the linear form, and the coefficient for experience is smaller in 2002 than in 1995. These two facts taken together indicate that employers no longer value experience as much as in the past, which tends to minimize the disparity between the rich and the poor. Similarly, when the coefficient on the quadratic form of experience is changed to the corresponding value of 2002, the dispersion increases again; however, when both the coefficients on the linear and quadratic forms are changed, the result is very close to when only changing the results for changing only the quadratic. The quadratic form determines the starting age when at which greater experience begins to drag hourly income down.

Thus, it indicates the age at which experience loses its ability to increase earnings is related to earning disparity.

In summary, the evidence presented thus far suggests that China's income structure has become more diverse over the seven-year period as the returns to human capital have risen along with and gender and party membership income premiums. The R squared value has increased for the same model from 1995 to 2002, which means that a larger portion of the income differences can be explained by the selected set of explanatory variables.

Implication

In this section, I will analyze the impact of the current income distribution on migrant workers. The coefficient on the male dummy increases from 0.2 to 0.34 from 1995 to 2002. This trend is beneficial for migrant workers from the household perspective, because males are the main workforce participants and income contributors for migrant families. The superior position of males in the labor market will likely fortify the patriarchal tradition in rural households. Migrant households are expected to have a stronger preference for male infants even after relocation to the city, although male laborers are not preferred in the countryside in farming due to agricultural mechanization. Such traditional values will delay China's feminization process and lead to conflicts between migrant workers and organizations involved in the promotions of women's rights.

The wage premiums of communist party membership keep rising, but this benefit is unlikely to apply to migrants who, on the whole, are not affiliated with the party. Party membership usually begins on level of the local work place, but migrant field workers do not encounter such opportunities while employed in the countryside. However, one implication that may be drawn from this finding is that were migrant workers to join the party through their

existing employment, or through membership in labor unions, the resulting change in their political status might very well bring explicit economic rewards in terms of their real income. Calling attention to such opportunities might provide incentive for their increased engagement in political life and encourage them to fight for their lawful rights through formal institutional channels. Such developments could lead to significant improvements in civil participation greater equality in the exercise of political power. Nevertheless such wage premiums for communist party membership may not apply across all workplaces, and discrimination against migrant laborers may exist within the segments of the party. Consequently, economic rewards for party membership among migrant workers cannot be guaranteed.

The findings in the previous section demonstrate that returns to education are the main cause of the increased income distribution dispersal in 2002. This study's results regarding returns to education are similar to previous findings in the literature. Fang et al (2012) studies the return to education utilizing the compulsory education law passed 1986 as a quasi experiment; Li et al (2015) use twins data and OLS estimate to predict the overall and within household return to education. The above two classic studies in return to education both predict that the return to education will keep rising as China transforms from a socialized planned economy to a market oriented economy. In Dustmann & Glitz (2011), we are told that the "economic success of the immigrant in the destination country is to a large extent determined by her educational background, how transferable these skills are to the host country labor market, and how much she invests into further skills after arrival" (Dustmann & Glitz 2011). Such factors apply equally to migrants within a nation. In China a considerable number of migrant workers only finish middle school, and high school graduations are the exception for this group. The mismatch between these migrants' farming skills and the skills required for work within industry compels

many of them to take jobs requiring few skills or skills that are easily acquired, if they intend to minimize both the duration of unemployment and migration costs. With limited educational attainment and transferrable skills, migrants are less competitive and are very likely to remain at the bottom of the income distribution.

The consistent growth in returns to education not only influences migrant workers but also their decisions regarding education investment for their descendants. In China, school-aged children enter schools classified at the city level by school district and throughout the nation schools vary significantly in their student group composition, teacher quality, and funding resources even within the same district. Nonresident tuition is dramatically higher than the tuition fees for district residents, and often times additional large bribes must to be paid to achieve cross-district enrollment, an “investment” most migrant households cannot afford. What is worse, lacking urban status, the children of migrant workers may not enroll in urban schools, except those built specifically to accommodate the children of migrant workers. But these schools are of inferior quality. Therefore, the restriction of resident status in school enrollment amounts to the *de facto* segregation of migrant children from the children of city workers. Furthermore, in the Chinese educational system, high schools and colleges admit students merely on the basis of their standardized test scores. Consequently, lack of access to reliable education resources and the company of low performing peers reduce the performance of migrant children and impedes their access to high school and college. These deficits in the education of migrant workers’ children significantly affect the next generation, even while the returns to education continue to rise for other segments of the population. Consequently, the income gap resulting from the education disparity between migrant worker families and urban families continues to increase.

The classic migration model predicts a convergence of wages when the labor market of the origin attains equilibrium with that of the destination in terms of demand and supply. However, the findings of this study do not provide empirical support for this theory. Analyses from the existing literature confirm the expanding benefits possible for higher education in terms of real earnings, while at the same time predicting that the education gap between urban and rural areas will continue to grow. As a consequence of these opposed trends, wages will diverge between the rural origins of the migrants in question and their urban destinations.

Discussion

Conventionally, log total income is the dependent variable in this type of study on labor distribution, which makes it inconvenient to compare results of this study to previous ones in terms of magnitude. In actuality, I also have used methodology in this paper to analyze distribution change in log (real) hourly income, real total income and log (real) total income. The standard deviation changes from $\beta^{1995} * X^{1995}$ to $\beta^{2002} * X^{2002}$ are relatively small and difficult to visualize. That's why I have selected real hourly income as the variable of interest of this study. Secondly, an important underlying assumption for this study is that the return to human capital and the income premium of different industries are identical nationwide. However, in fact, the effects can fluctuate from province to province since different sectors act as pillar of economy for different provinces. Future researchers can apply the methodology of this research to individual province and compare the provincial level effects of return to personal attributes on the income distribution.

One noteworthy weakness of this study is that I use data from workers with urban status to predict a labor market composed of both urban and migrant workers. The underlying assumption here is that the characteristics determining real hourly income are the same for these

two types of workers. Had the labor market been segmented into urban and migrant labor markets, the previous findings would become doubtful. Because only a limited amount of data can be extracted for migrant workers from the survey utilized in this study, I was not able to determine the extent to which the changes in the urban labor market resulted from rural-urban migration. This study divides the labor force in urban areas between urban and migrant workers. Future researchers may wish to explore further differentiations within the migrant group and determine whether selection mechanisms for this nationwide migration trend operate positively or negatively, because skill sets vary widely among migrant workers.

Concluding Remarks

This paper developed a PDF decomposition methodology to account for income distribution trends from 1995 to 2002 utilizing data from the China Household Income Project. As such, it is analogous to previous studies based on the decomposition of inequality indices.

I have shown that a change in density may be decomposed into terms representing the effects of workers' attributes to income and the part accounting for the density change in workers' attributes. This study specifically focuses on the changes in the spread of income distribution. I have found that the increasing return to human capital, as well as to the premiums for gender, income, and communist party member income, have all contributed to the greater dispersion of the income distribution in the urban areas of China. The current income distribution mechanism in the urban area gives rise to concerns regarding the educational attainment for the children of migrant workers, gender discrimination within households, as well as for the increasing gap in social and economic well being between the migrant and urban labor forces. One suggestion for the mitigation of such trends might be to apprise migrant laborers about the

nature of these distribution mechanisms to provide an incentive for their increased civic participation.

Table 1: Summary of Statistics

	Mean1995	SD1995	Mean2002	SD2002	T-test (2002-1995)
male	0.53	0.50	0.56	0.50	3.82
marital	0.89	0.31	0.87	0.33	-2.73
communist	0.26	0.44	0.26	0.44	1.20
educ	10.76	2.90	10.82	2.83	1.49
exp	19.51	9.36	20.08	9.64	3.80
ownership	1.98	0.92	4.03	2.88	56.61
sector	5.42	3.68	6.40	3.66	16.87
total working hour	2200.09	405.26	2383.10	651.89	20.51
real hourly income	0.91	0.63	4.01	3.81	66.00

Table 2:Regression Tables for 1995

	(1) real income hour	(2) real income hour	(3) real income hour	(4) real income hour
male	0.0734*** (6.27)	0.0816*** (6.98)	0.0806*** (6.90)	0.0813*** (6.95)
marital	0.151*** (7.40)	0.0559* (2.43)	0.0573* (2.49)	0.0555* (2.41)
communist	0.0838*** (5.85)	0.0830*** (5.82)	0.286*** (5.59)	0.125** (3.08)
educ	0.0332*** (15.66)	0.0341*** (16.11)	0.0395*** (15.88)	0.0341*** (16.12)
exp	0.0201*** (27.86)	0.0431*** (15.81)	0.0437*** (16.03)	0.0424*** (15.22)
exp2		-0.000547*** (-8.74)	-0.000560*** (-8.94)	-0.000520*** (-7.73)
communist*educ			-0.0179*** (-4.13)	
communist*exp				-0.00183 (-1.11)
local publicly-owned	-0.126*** (-9.36)	-0.129*** (-9.61)	-0.130*** (-9.68)	-0.129*** (-9.59)
urban collective	-0.280*** (-14.93)	-0.283*** (-15.15)	-0.280*** (-15.01)	-0.283*** (-15.13)
private enterprise	-0.181 (-1.57)	-0.178 (-1.56)	-0.178 (-1.55)	-0.177 (-1.55)
self-employed business	0.0768 (0.54)	0.0983 (0.70)	0.0947 (0.67)	0.0990 (0.70)
sino-foreign joint venture	0.289*** (5.36)	0.296*** (5.52)	0.298*** (5.56)	0.297*** (5.54)
foreign owned	0.857*** (4.59)	0.870*** (4.68)	0.873*** (4.69)	0.871*** (4.68)
township-village enterprise	-0.0186 (-0.03)	-0.0266 (-0.05)	-0.0286 (-0.05)	-0.0306 (-0.05)
other ownership	-0.00506 (-0.06)	0.00390 (0.04)	0.00851 (0.10)	0.00409 (0.05)
industry	-0.0487 (-1.13)	-0.0577 (-1.35)	-0.0598 (-1.40)	-0.0569 (-1.33)

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	(1)	(2)	(3)	(4)
	real_income_hour	real_income_hour	real_income_hour	real_income_hou
mining	-0.0394 (-0.59)	-0.0449 (-0.67)	-0.0429 (-0.64)	-0.0440 (-0.66)
construction	-0.0451 (-0.85)	-0.0503 (-0.95)	-0.0523 (-0.99)	-0.0494 (-0.94)
transport	0.0727 (1.50)	0.0676 (1.40)	0.0632 (1.31)	0.0684 (1.41)
commerce	-0.0373 (-0.84)	-0.0448 (-1.01)	-0.0478 (-1.08)	-0.0436 (-0.98)
real estate	0.0257 (0.50)	0.0227 (0.44)	0.0212 (0.42)	0.0229 (0.45)
health,social welfare	0.108* (2.18)	0.105* (2.14)	0.101* (2.06)	0.106* (2.15)
education,culture	0.0947* (2.03)	0.0968* (2.08)	0.0930* (2.00)	0.0974* (2.09)
scientific research	0.0560 (1.01)	0.0489 (0.89)	0.0429 (0.78)	0.0499 (0.91)
finance insurance	0.254*** (4.43)	0.253*** (4.42)	0.247*** (4.31)	0.253*** (4.42)
government,social organizations	0.0247 (0.55)	0.0252 (0.56)	0.0235 (0.53)	0.0252 (0.56)
other sector	0.0498 (0.60)	0.0470 (0.57)	0.0443 (0.54)	0.0488 (0.59)
_cons	0.0768 (1.45)	-0.0373 (-0.69)	-0.0980 (-1.75)	-0.0371 (-0.69)
<i>N</i>	10139	10139	10139	10139

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table3:Regression Results for 2002

	(1)	(2)	(3)	(4)
	real_income_hour	real_income_hour	real_income_hour	real_income_hour
male	0.280*** (3.41)	0.294*** (3.58)	0.292*** (3.56)	0.296*** (3.61)
marital	0.400** (2.92)	0.258 (1.71)	0.256 (1.70)	0.228 (1.51)
communist	0.455*** (5.05)	0.478*** (5.28)	-0.00279 (-0.01)	0.152 (0.78)
educ	0.255*** (17.10)	0.254*** (16.99)	0.241*** (13.66)	0.253*** (16.96)
exp	0.0733*** (15.18)	0.113*** (6.27)	0.113*** (6.24)	0.112*** (6.17)
exp2		-0.000975* (-2.29)	-0.000958* (-2.25)	-0.00108* (-2.52)
communist*educ			0.0399 (1.38)	
communist*exp				0.0157 (1.87)
SOE at central/provincial level	0.0232 (0.14)	0.0237 (0.14)	0.0265 (0.16)	0.0262 (0.16)
Local SOE	-0.252 (-1.68)	-0.247 (-1.64)	-0.245 (-1.63)	-0.244 (-1.62)
Urban Collective	-0.880*** (-4.60)	-0.885*** (-4.63)	-0.888*** (-4.65)	-0.885*** (-4.63)
Private Firm	-0.222 (-0.99)	-0.216 (-0.96)	-0.219 (-0.97)	-0.212 (-0.94)
Self-Employed	-0.780*** (-4.21)	-0.764*** (-4.12)	-0.781*** (-4.20)	-0.772*** (-4.16)
Sino-foreign joint venture	1.498*** (4.56)	1.517*** (4.62)	1.514*** (4.61)	1.525*** (4.64)
Foreign company	2.010*** (3.69)	2.033*** (3.73)	2.035*** (3.74)	2.028*** (3.72)
State share-holding company	0.580* (2.33)	0.584* (2.34)	0.585* (2.35)	0.584* (2.34)
Other share-holding company	0.00245 (0.01)	0.00311 (0.02)	0.00614 (0.03)	0.00622 (0.03)

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	(1)	(2)	(3)	(4)
	real_income_hour	real_income_hour	real_income_hour	real_income_hour
Rural private enterprise	-0.386 (-0.17)	-0.446 (-0.20)	-0.433 (-0.19)	-0.513 (-0.23)
Rural individual enterprise	-2.039 (-1.73)	-2.054 (-1.74)	-2.048 (-1.73)	-2.060 (-1.75)
Other ownership	-0.743** (-2.75)	-0.730** (-2.71)	-0.736** (-2.73)	-0.724** (-2.69)
Farming	-1.585* (-2.10)	-1.586* (-2.10)	-1.584* (-2.10)	-1.590* (-2.10)
Mineral	-2.447*** (-3.29)	-2.450*** (-3.30)	-2.454*** (-3.30)	-2.456*** (-3.31)
Manufacturing	-2.248*** (-3.32)	-2.242*** (-3.31)	-2.242*** (-3.31)	-2.246*** (-3.32)
Supply Facilities	-0.875 (-1.24)	-0.867 (-1.23)	-0.873 (-1.24)	-0.867 (-1.23)
Construction	-1.445* (-2.05)	-1.428* (-2.02)	-1.430* (-2.03)	-1.433* (-2.03)
Geological Prospecting	-1.244 (-1.56)	-1.231 (-1.55)	-1.233 (-1.55)	-1.232 (-1.55)
Transportation	-1.201 (-1.75)	-1.193 (-1.74)	-1.189 (-1.73)	-1.197 (-1.75)
Wholesale, retail	-2.249*** (-3.31)	-2.236** (-3.29)	-2.232** (-3.28)	-2.251*** (-3.31)
Finance and Insurance	-0.688 (-0.97)	-0.674 (-0.95)	-0.672 (-0.94)	-0.684 (-0.96)
Real Estate	-0.770 (-1.02)	-0.765 (-1.01)	-0.753 (-0.99)	-0.766 (-1.01)
Social Services	-2.188** (-3.22)	-2.173** (-3.20)	-2.170** (-3.19)	-2.178** (-3.20)
Social Welfare	-1.165 (-1.68)	-1.146 (-1.65)	-1.144 (-1.65)	-1.144 (-1.65)
Education and Culture	-0.546 (-0.80)	-0.515 (-0.75)	-0.517 (-0.75)	-0.516 (-0.75)
Scientific Research	0.260 (0.35)	0.282 (0.38)	0.284 (0.39)	0.282 (0.38)
Government Agents	-1.263 (-1.85)	-1.250 (-1.83)	-1.256 (-1.84)	-1.258 (-1.84)

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	(1)	(2)	(3)	(4)
	real_income_hour	real_income_hour	real_income_hour	real_income_hour
Other Sector	-1.484*	-1.471*	-1.471*	-1.484*
	(-2.06)	(-2.05)	(-2.05)	(-2.06)
_cons	1.244	1.040	1.184	1.155
	(1.76)	(1.46)	(1.65)	(1.62)
<i>N</i>	10104	10104	10104	10104

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 1: Density Plots of Four Models

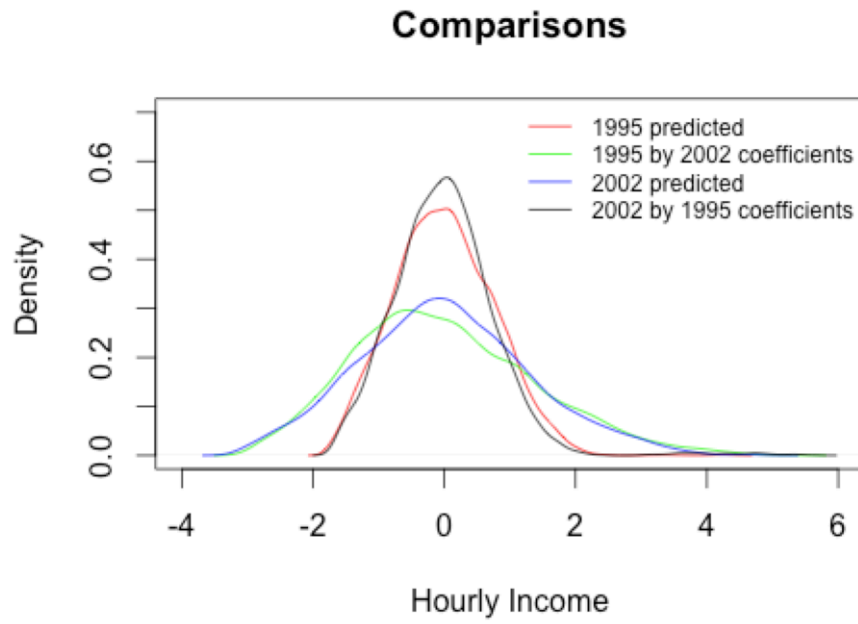


Figure 2: Density Plot of $\beta^{1995} * X^{1995}$ and $\beta^{2002} * X^{2002}$

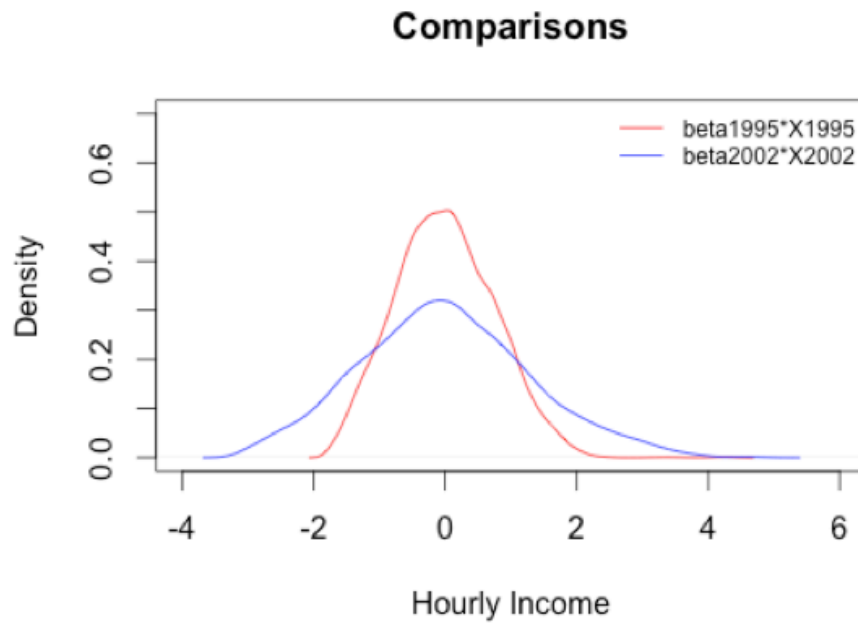


Figure 3: Density Plot of $\beta^{1995} * X^{1995}$ and $\beta^{2002} * X^{1995}$

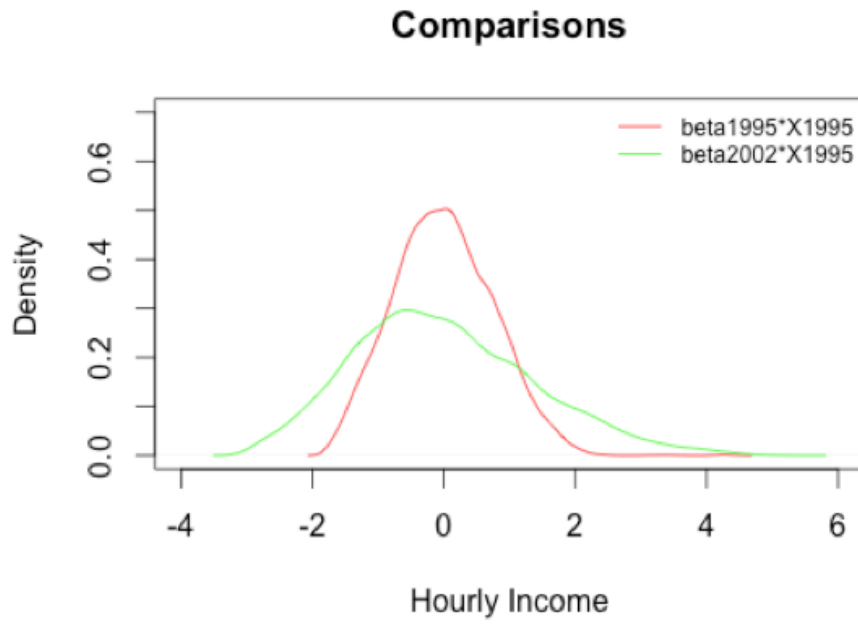


Figure 4: Density Plot of $\beta^{1995} * X^{1995}$ and $\beta^{1995} * X^{2002}$

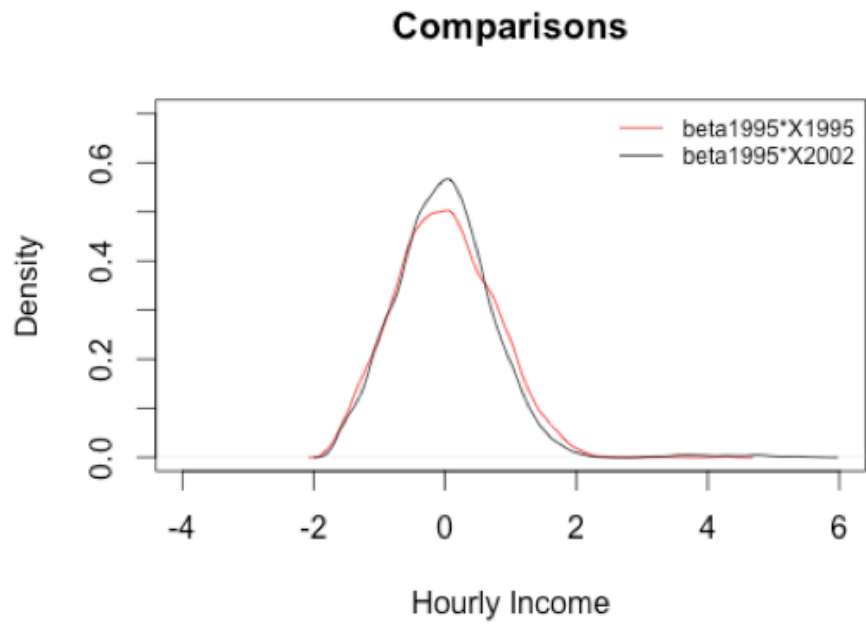


Figure 5: Density Plot of $\beta^{1995} * X^{1995}$ and $\beta^{1995*} * X^{1995}$ only changing male coefficient

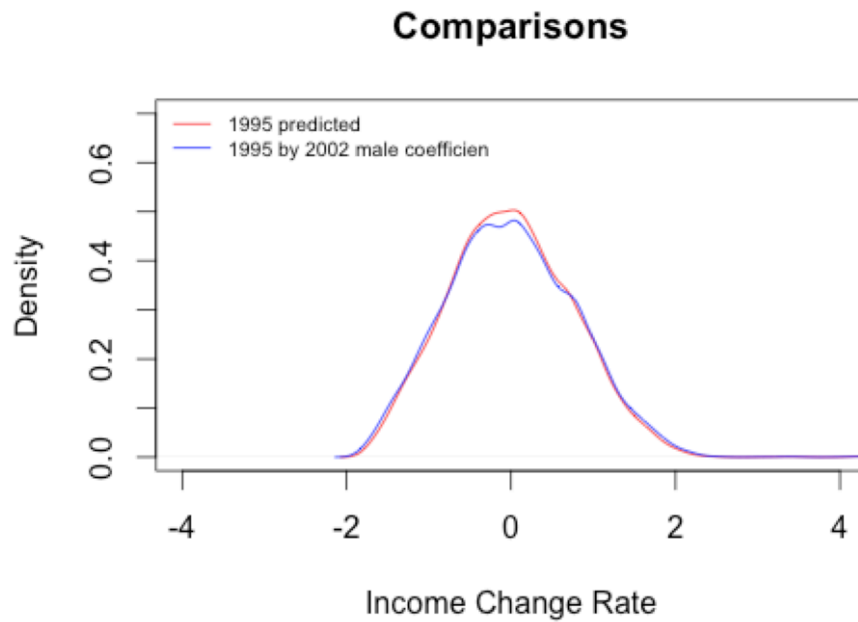
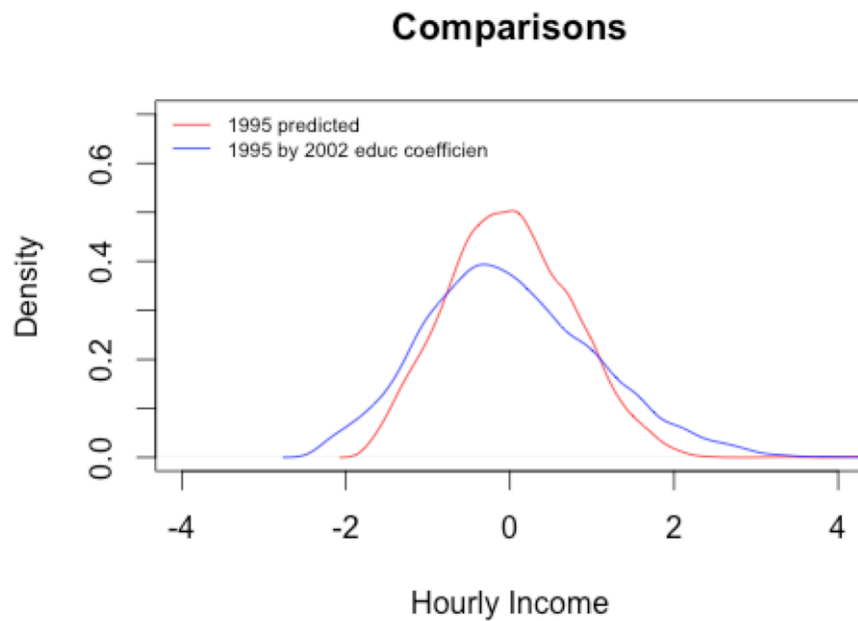


Figure 6 Density Plot of $\beta^{1995} * X^{1995}$ and $\beta^{1995*} * X^{1995}$ only changing educ coefficient



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