

# Labor Migration and Income Inequality in China

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This paper studies labor migration and income distribution in Urban China. Using the datasets of China Urban Labor Survey (CULS) 2000 and 2005, it analyses the structural change of urban labor market and its impact on employment and income distribution.

The paper mainly answers five questions: (1) How many rural migrant workers working in urban informal sector? (2) What kind jobs are the migrant workers doing? (3) How large is the wage difference between urban workers and rural migrant workers and what are the impacts of the wage difference on urban income distribution? (4) What is effect of the labor market changes on urban income inequality?

## I. Introduction

Labor market reform is one of the essential components of China's Reform and Opening-up policy. With gradual introduction the market mechanism to labor allocation in both rural and urban areas, the labor market has been functioning better and better than before.

We can find some stylized facts in the labor market development: the labor market is more integrated across regions, between rural and urban areas, and across economic sectors with various ownerships; the returns to human capital keep increasing, which implies that productive workers get better pay; the employers are more responsive to the factor prices, including wages; and most importantly, on institutional aspect, the Chinese labor market is less

discriminatory than before, which is evidenced by abolishing some previous barriers that limited labor mobility and employment.

Meanwhile, with the changes in the labor market, the income inequality has been an issue drawing more and more attention. Although how serious the inequality is remains as a question, it is clearly viewed that many aspects of labor market transition are connected with the inequality changes. For such a reason, it will be helpful to understand the inequality and its determinants in contemporary China if we can disentangle those factors of labor market development and find out their directions and magnitudes to inequality changes.

The recent labor market development is characterized the following aspects: an

increasing flow of rural to urban migration, informalization, and strict regulations. Each of these changes may have effect on inequality. In this paper, we are going to discuss these changes and try to analyze their impacts on the inequality using a household survey data. The paper is organized as follows. Section 2 describes the main changes in the Chinese labor market recently. Section 3 explores links of those changes with inequality. Section 4 provides some empirical evidences based on a household survey. Section 5 draws some conclusions.

## II. Labor Migration and Urban Labor Market Change

China has witnessed labor market development in the past three decades. As an essential component of economic transition, China evolved to a labor market through gradual reforms, as the reforms were in other areas. Labor market mechanisms were firstly introduced in rural China by allowing farmers to make labor allocation decisions, which in turn lead to labor mobility from rural to urban areas and across regions. When China started restructuring the economy of State Owned Enterprise (SOEs) and experienced some years of labor market dislocation, the governments tends to relax their direct control on labor allocation in urban economy. Instead, the

market mechanism was recognized in hiring and firing decision and wage determination, as evidenced by the 1994 *Labor Law*. Most migrant workers and the urban unemployed from SOEs entered informal sectors in urban labor market, which leads to a trend of informalization. Meanwhile, symbolized by the 2007 Labor Code, a series of labor market regulations were taken in order to achieve a more regulated labor market.

### 1. How Many Migrant Workers in Urban China?

In the early reform period – namely from early 1980s through mid 1990s, the employment of rural and urban China expanded mainly through the transformation of farmers from agricultural to non-agricultural work. Job creation by township and village enterprises (TVEs)<sup>1)</sup> and massive labor migration from rural to urban sectors are most impressive, unique and worldwide-recognized as the “China miracle”. In the urban area, China started the reform of employment allocation system which induced an increasing of new entrants into the labor market as well as reduced a part of job allocation the government planning. This laid a starting point for labor market development later on.

In 1980s, there was only a small amount of labor migration. The composition of migration flow was dominated by

craftsman who moved within rural areas. With increasing labor productivity in agriculture, rural labors began to move out of rural areas in growing numbers. According to estimations made by MOA (2001), rural migrants were only 2 million in 1983 but reached 30 million by the end of 1980s. The economic booming after 1992 encouraged migration further. Rapid economic growth in coastal areas attracted more and more rural labors from other parts of China to seek off-farm job vacancies.

From 2000, NBS started collecting the information of migrants in rural household survey, so we can get a continuous series of the size of migration based on these consistent sampling surveys. As Table 1 shows, the total number of migrants has kept growing and reached 136 million in 2007, suggesting that China is experiencing an unprecedented large migration flow in history. It is obvious

that migrant workers have had a substantial role in urban labor market. In 2007, migrant workers accounted for 46.5 percent of total urban employment.

## 2. Is China Facing Problem of Labor Shortage?

As the results of demographic transition, declining participation rates, and fast economic growth, China is approaching to the turning point in the labor market, the end of the era of unlimited labor supply. In coastal areas, the most developed regions in China, shortages of both skilled and unskilled workers have been widely reported in recent years. An indication of labor shortages is the rise of average wages. After being constant for decades, average wages for migration workers started rising up from 2003. According to our surveys of migration workers, in 2006 the wages of migration workers increased more than 10 percent than the previous year (Cai, 2007). The

Table 1 Migrant Workers and Urban Employment

Year	Migrant Workers (million)	Urban Employment (million)	Ratio (1/2, %)
2000	78.49	212.74	36.9
2001	83.99	239.4	35.1
2002	104.7	247.8	42.3
2003	113.9	256.39	44.4
2004	118.23	264.76	44.7
2005	125.78	273.31	46.0
2006	132.12	283.1	46.7
2007	136.49	293.5	46.5

Sources: The size of the migrant workforce from National Bureau Statistics (NBS), various years (a). *Yearbook of Rural Household Survey*, China Statistical Press. Data on urban employment are from NBS, various years (b). *Yearbook of Labor Statistics in China* (various years), China Statistical Press.

survey conducted in 2749 villages of rural China indicated that three out of four villages exhausted their young human resources (Cai, 2007).

Demographic data in rural areas also confirm this trend. Looking at the age profile of rural migrants, it is easy to find that only a very limited number of those below 30 years old, are working in agriculture sector. Considering that agriculture labor productivity is low in China due to the land tenure<sup>2)</sup>, agriculture still requires a large amount of labor input. In addition, older workers in rural areas have relatively less years of schooling and are more difficult to reallocate in non-farm sectors than young generations.

However, the argument of a turning point is quite controversial as both academics and the public opinion find hard to believe the existence of a labor shortage while existing large amount of labor stock in China. To further defend this argument a precise analysis on rural population is needed. When calculating the possible migration flows from agriculture, the previous studies have often used aggregated data and predicted the number of migrants by deducting estimated labor for agriculture. One of the vital drawbacks of the estimation is that it calculates the surplus number without considering the heterogeneity among

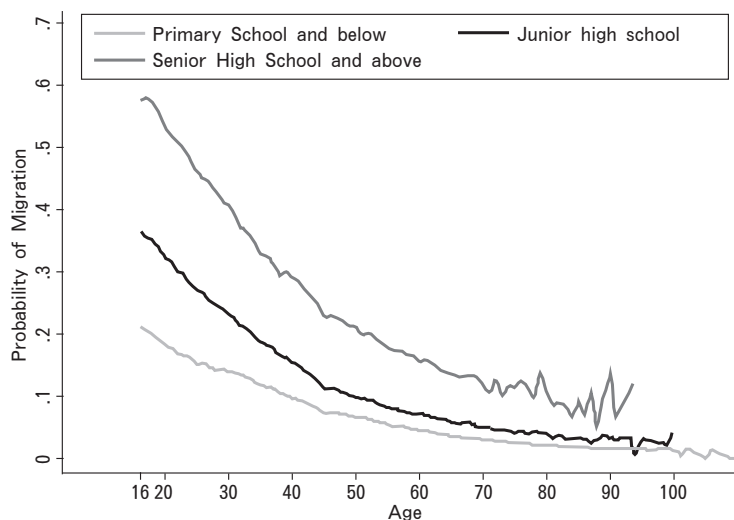
individuals. In fact, given the disparities in terms of human capital, age, experience, household composition, and the local conditions in sending places, the propensity of migration varies from person to person.

The advantage of individual level data from a national representative sample survey is to capture individual disparities by predicting each individual's migration probability. For that purpose, a Probit model has been used where the dependent variable is whether migrating more than 6 months and the regressive variables are education, health status, gender, experience and its square term, and dummies for provinces. Based on the predicted probability, we can get the average probability of migration for each group categorized by age or education. As Figure 1 displays, the probability of migration varies among different education groups, and it declines as age increasing in each group. We can find out that the migration probability for people with low education level and aged at 40 and above are particularly low.

### 3. Who Migrate?

As Table 2 shows, the workers those remaining in agriculture and having a low probability to work off-farms are the oldest with the lowest human capital. The predicted number of labor available for non-agricultural industries sums up 43.5 million (last column).

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Source: authors' calculation based on the 1% population sampling survey in 2005.

**Figure 1 Predicted Probabilities by Age with Different Level of Human Capital**

**Table 2 Rural Labor Forces and Migration Probability**

Age and Education Group	Number of labor (million)	Predicted Probability	Predicted Migrants (million)
16-20	<b>17.16</b>	-	<b>4.97</b>
Primary School or below	4.44	0.189	0.84
Jr. High School	12.03	0.315	3.78
Sr. High School or above	0.69	0.505	0.35
21-30	<b>50.08</b>	-	<b>11.18</b>
Primary School or below	15.39	0.142	2.18
Jr. High School	32.24	0.248	7.99
Sr. High School or above	2.46	0.410	1.01
31-40	<b>88.96</b>	-	<b>13.44</b>
Primary School or below	39.45	0.109	4.31
Jr. High School	46.69	0.178	8.29
Sr. High School or above	2.82	0.298	0.84
41-50	<b>76.48</b>	-	<b>8.29</b>
Primary School or below	39.86	0.078	3.10
Jr. High School	30.52	0.123	3.76
Sr. High School or above	6.10	0.235	1.43
50 and above	<b>93.7</b>	-	<b>5.69</b>
Primary School or below	76.3	0.053	4.04
Jr. High School	15.51	0.084	1.30
Sr. High School or above	1.88	0.182	0.34
<b>All</b>	<b>326.39</b>	-	<b>43.57</b>

Source: authors' calculation from 1% population sampling survey in 2005.

Because rural-to-urban migration was initiated by large scale surplus labor in rural areas, it generated two effects of transition and development. The first is a resources reallocation effect – namely the transformation of workforce from low productivity (agricultural) sector to high productivity (secondary and tertiary) sectors alone contributed 21 percent to the overall GDP growth rate during the reform period (Cai and Wang, 1999). The second is income effect – namely while the wage rate of migrant workers had not increased much, the enlargement in total number of migrants has enhanced the total income of rural households as a whole. As a result, labor migration has been an effective way to both poverty reduction and narrowing the income gap between rural and urban areas.

#### 4. Is There a Competitive Relationship between Migrant Workers and Urban Workers?

The reform program termed “activating the system of permanent employment” initiated in 1987 touched upon the core system of the “iron rice bowl”, began revising the legacy of traditional labor policies under the planning system. The legal basis of this reform is *Temporary Regulations on Labor Contract System of State-owned Enterprises* issued by the administration in 1986<sup>3)</sup>, with which all state-owned enterprises are required to

recruit new workers based on voluntary contract with them. Under the newly introduced labor management, workers currently working at an enterprise were to be re-chosen and contracted based on their performance and efforts. With this reform workers began to aware that there is a risk to be unemployed due to overstaffing, shirking and misbehavior, though the state asked enterprises not to dismiss workers from enterprises at the time.

China’s state-owned enterprise reform started in early 1980s and was characterized as to decentralize power and to Leave partial profits to enterprises. Each step of the reform has implied more rights, with which SOEs can make decision on labor employment – namely as the state gradually grants autonomy to enterprises, the managers of SOEs can legally select and dismiss workers, and determine and adjust compensation in accordance by enterprise’s profitability and worker’s performance. Through this change of institutional environment and with increasing competition pressure on enterprises, employment has become more and more market-oriented and the “iron rice bowl” gradually had been broken.

At the early stage of labor policy reforms, the more or less relaxation of labor regulations and granting of employment autonomy to enterprises were

only motivated by the challenges to solve the problems caused by massive increase of urban labor force — returned sent-down youth and new school graduates and to improve incentives of enterprise workers. However, since there existed soft-budget constraint in urban enterprises, their managers had no sufficient motivation of utilizing labor market as a distributor of resources. Only when SOEs began to face stronger outside competition in 1990s, the relaxed regulations on labor allocation and the increase of autonomy of employment have become stimulus to the labor market development.

First, as competition from non-state sectors sharpens and comparative advantage changes, numerous SOEs became profit-loss-makers and were forced to lay off their redundant workers and the state is unable to continue taking care of all those layoffs. This led the labor market starts work. Secondly, the massive flows of rural labor to the cities, on the one hand, bring a shock to urban workers, since the latter are not capable of competing with migrant counterparts who have advantages with low pay and disciplinary works<sup>4)</sup>. Furthermore, the urban non-state sectors, by employing low cost migrant workers, give pressures on the SOEs. In sum, the increased competition has deepened the reform of labor policy thus pushed forward the labor

market development.

Due to the downturn of macroeconomy and rapid industrial structural change, many SOEs, which lost their comparative advantage and competitiveness, have been unable to fully utilize their production capacity since the late 1990s. As a response to this difficult situation, SOEs managers are forced to exercise their autonomy of disposing workers and thus a hundred of thousands urban workers have lost their jobs in recent years. In China today, unemployment takes two forms — explicit unemployment and lay-off (*xiagang*). With *xiagang*, workers lost their work but contain connection with their former employees and receive a certain amount of subsidies.

The severity of unemployment problem, as a double-edged sword, has induced two policy intentions. First, urban governments strengthen their protection for urban workers. Given the responsibility of local governments for political stability, with a strong motivation of averting any potential social tension, urban governments have enacted various policy measures deterring labor market development. For instance, urban governments intervene enterprises' matters of employment adjustment and sometimes directly restrain enterprises from laying off workers regardless what situation an enterprise is in. To protect urban workers from competition with migrant workers,

the governments issue discriminatory employment regulations against migrants working in urban sectors by restricting jobs that migrant workers can take up and imposing heavy charges for hiring migrants in urban sectors (see Cai et al., 2001). Secondly, being aware of failure of planned allocation of labor force, the governments began to take advantage of labor market to solve the problems of employment and reemployment. As a result, small sized non-state enterprises and service sector, which used to be artificially depressed by government, are encouraged both politically and financially.

This helps China's employment structure be diversified. In 1978 when the eco-

nomie reform was about to begin, nearly 80 percent of urban laborers were employed in state sector, and the state and collective sectors almost employed all urban workers. The two sectors domination of employment had remained until 1990s when non-state sector began to enhance its share of employment in the whole economy. Since then, things have changed dramatically – in 2001, employment shares of state and collective sectors dropped to 32 percent and 5.4 percent, respectively, while that of non-state sector increased substantially.

In practice, urban employment has been always growing since the reform started and it reached 283 million in

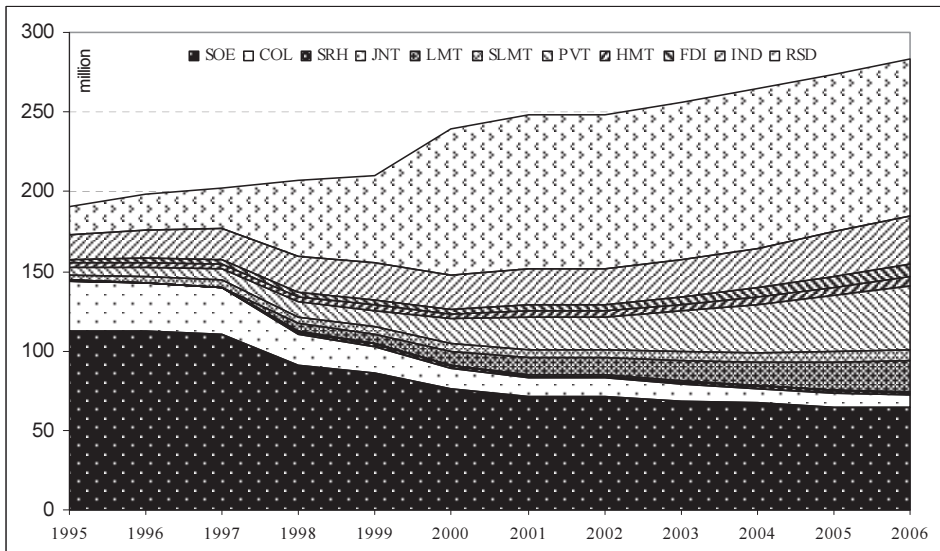


Figure 2 Changes in Employment Structure

Note: SOU – State-owned Units, COL – Collective-owned Units, SRH – Share-holding Cooperative Units, JNT – Joint Ownership Units, LMT – Limited Liability Corporations, SLMT – Share Holding Corporations, Ltd., PVT – Private Enterprises, HMT – Units with Funds from Hong Kong, Macao and Taiwan, FDI – Foreign Funded Units, IND – Self-employed Individuals, RSD – Residual.

Source: NBS, 2007



2006, 13 million more than the previous year. As shown in Figure 2, the residual of employment, namely the informer employment, reached 98.6 million urban employees in 2006, and the number is more than the sum of state and collective employment and accounts for 34.8 percent of urban total employment. Understanding the gap and its sources helps us know the trend of informal employment in urban labor market.

### III. Informal Employment and Wage Difference

#### 1. Rural Migrant Workers and Urban Informal Employment

Statistically, the residual between total and unit employments appeared in 1990. Prior to that very year, figures of urban employment were collected through all production units with independent accounts and registered individual enterprises. Currently, official statistics on employment come from two statistical systems. The gap between total and sectoral summation of employment comes from the multifariousness of statistical sources and it is more diversified and allocated through new channels, mostly through market forces.

Therefore, there are two main components of informal employment. One of them is the migrant workers from rural areas, and the other is those who lost

their previous jobs in SOEs. Using the 2005 1% Population Sampling Survey data, which is national representative, we may observe the whole picture of informality for both migrant workers and local residents. We categorize three types of workers in urban labor market, local workers, rural migrant workers, and urban migrant workers. In contrast, most rural migrant workers (65.4%) work informally while the proportion of urban migrant workers is 29.8 percent. Table 3 presents the outcomes calculated from the data by various groups of people with different characteristics.

As Table 3 indicates, for migrant workers, the proportion of workers in informal sector increases as age rises, which implies that the older the migrant workers are, the more disadvantaged they are. The informality-age profile is different for local workers: as age increases, the share of workers in informal sector decreases first and then increases. Education plays the same role for both migrant and local workers: the educated workers are less possible to work in informal sectors.

As Table 3 shows that most of migrants in urban labor market worked in the informal sectors. Considering that migration workers have already accounted for a fairly large share of employment in urban labor market

evidenced by Table 1, China needs to pay more attention to this group of people for decent work. When comparing with those workers with urban *hukou*, rural migration workers are more disadvantaged in urban labor market in terms of earnings, working intensity, and social security.

Furthermore, the labor demand and supply situation in China has changed much in recent years. With the sustainable and rapid economic development and population age structure changes, China has ended the era of unlimited labor supply. Structural labor shortage have emerged in costal areas first and then spread to inland provinces. This has cre-

ated good opportunities to protect lawful rights and interests of labors.

Under this circumstance, in order to protect lawful rights and interests of labors better, a series of regulations and laws on China's labor market have been issued since the end of the 1990s, which include Wage Guideline System (1999), Minimum Wage Regulations (2004), *Employment Contract Law (2008)*, *Employment Promotion Law (2008)* and *Labor Disputes Mediation and Arbitration Law (2008)*. These regulations and laws can basically be seen as the more detailed and revised version of *1994 Labor Law*. The contents of *1994 Labor Law* is very comprehensive. However, the regulations

Table 3 Informality in Non-Agricultural Sectors (%)

	Rural Migrant Workers	Local Workers	All Workers
All	65.4	52.5	52.6
<b>By Age Group</b>			
20 and below	59.6	79.8	68.8
21-30	60.2	53.6	51.9
31-40	69.8	51.3	52.5
41-50	74.2	47.5	48.2
51-60	76.6	51.2	51.5
61 and above	78.3	71.3	70.3
<b>By Education</b>			
Primary School and below	80.0	82.9	81.7
Junior High School	65.5	69.2	67.4
Senior High School	50.4	35.4	36.8
College and above	26.0	7.1	8.2
<b>By Gender</b>			
Male	66.5	52.9	53.1
Female	64.0	51.9	51.9

Source: authors' calculation from 2005 1% sampling survey.

of the law on many aspects are not that detailed. The newly issued regulations and laws after 1990s have been much more detailed than the *1994 Labor Law*. Furthermore, many new issues have emerged, and these new regulations and laws are mainly used to resolve these new issues.

## 2. Informal Employment and Wage Difference

It is widely discussed that a widening income inequality has been taking place in China since the reform and opening up. Unfortunately, there are few empirical evidences that are based on national representative survey and reliable statistical methodology to describe the trend in the past three decades. As an exception, Ravallion and Chen (2007) indicated that, using Rural Household Survey (RHS) and Urban Household Survey (UHS) conducted by National Bureau of Statistics, the overall inequality had kept growing in the first two decades since the reform.

Although the RHS and UHS are the best data to analyze the income inequality in China, it is worth noting that some changes in the labor market are not captured by the surveys and this gives bias to the estimation. The most pronounced factor is the rural to urban migration. As noted in Table 2, migrant workers accounted for 46.5% urban

employment in 2007 and became indispensable component in the urban labor market. Considering that more and more migrant workers move to urban areas with their families, the actual size of floating population in urban China would be even bigger.

RHS or UHS, are not well adjusted to this structural transition. National Bureau of Statistics modified the definition of residents as those living in a place more than 6 months in the year, which implies that most rural migrant worker and their families are defined as urban residents in population data. Meanwhile, migrants who are living out of countryside more than half year are not defined as rural residents anymore. In that case, surveys based on hukou registration system have bias in two ways. On the one hand, long-term migrants who earn high income in rural areas are excluded in the RHS; on the other hand, they are not effectively included in the UHS, which may up-bias the urban residents' income estimation on average

When the size of migration was relatively small, the sampling strategy would not bias the estimation on income inequality very much. For example, according to the estimation by the Ministry of Agriculture, there were about 30 million migrant workers by the

end of 1980s, which is equivalent to 3.5% of total rural population at that time. However, the ratio of rural migrant workers to rural population went up to 18.6%. Considering that the family migration has been more widespread than in the 1990s, the ratio is just a lower bound.

The Missing income of long-term migrant households brings insufficient information and distortion on actual income in urban households. Based on data provided by NBS (2006), in 2005, disposable per capita income of urban households was 10, 493 Yuan, whereas the net income per capita of rural households was only 3255 Yuan. However, according to CULS survey, per capita income of rural-to-urban migrant households was 8368 Yuan, equivalent of 2.6 times per capita income of rural households and 80 percent of that of urban households. Although we can hardly claim a disappearance in rural urban

income gaps, the huge magnitude of the migrant population undoubtedly serves to reduce the rural-urban income gap. Obviously, income inequality could be kind of exaggerated if the substantial middle income group is ignored.

Under a dual economy, wage rates for unskilled workers, like migrant workers, persist at a subsistence level until the expanding modern sector exhausts the surplus labor. This has been the case in China till the beginning of 21st century. As a consequence of labor shortage, the competition for labor inevitably lead to a rise of wages in the modern sector and in agriculture, and the relationship between wage rate and productivity in agriculture became close to what was expected.

As we have already mentioned, in 2003, a shortage of migrant workers occurred in the Pearl River Delta region. Since then, the phenomena spread to the

Table 4 Wage Increase in Urban Labor Market

	Migrants (NBS)		Migrants (MOA)		Local Workers	
	Nominal	Real	Nominal	Real	Nominal	Real
2001	644	644.0	-	-	903	896.7
2002	659	665.7	-	-	1031	1041.4
2003	702	702.8	781	774.0	1164	1153.6
2004	780	755.9	802	776.4	1327	1284.6
2005	861	821.3	855	841.5	1517	1493.1
2006	946	889.0	953	938.9	1738	1712.3
2007	1015a	912.8	1060	1014.4	2078	1988.5

Note: "a" is the average monthly earnings for the first three quarter in 2007.

Source: urban local wages are from China statistical Abstract in 2008, and migrants wages are from Statistical Report of NBS and Research Center of Rural Economy, MOA.

Yangtze River Delta region, and even to the provinces in central China, where migrant laborers are generally sent out. This trend has however been suspended by the current financial and international crisis. These labor shortages resulted in growing average wage for migrant workers after being constant for almost a decade. As Table 4 presents, the average wages of migrants and local workers have grown in recent years, both in nominal and real terms.

Attaining the *Lewisian* turning point of labor migration will tend to equalize individual incomes. Before urban economic restructuring in the mid-1990s, the wage rates in formal sectors in SOEs, were set by institutional factors rather than by market forces. Meanwhile, in the informal sectors in which most migrant workers are employed, wage is deter-

mined by supply of and demand for labor. With unlimited labor supply from agricultural surplus, the wage rates for migrant workers had been kept constant for a long time even in nominal term. Although the incomes migrants earned in the urban labor market were still higher than in agriculture and contributed to poverty reduction in rural China, income inequality increased between migrant workers and those employed in formal sectors.

Figure 3 displays migrant workers' wage changes by education attainment in the past few years. We found that in 2003 the wage gap between skilled and unskilled workers was quite substantial and the gap converged in the following years. Because labor shortage was more pronounced among low-skilled workers with junior high school, they had the

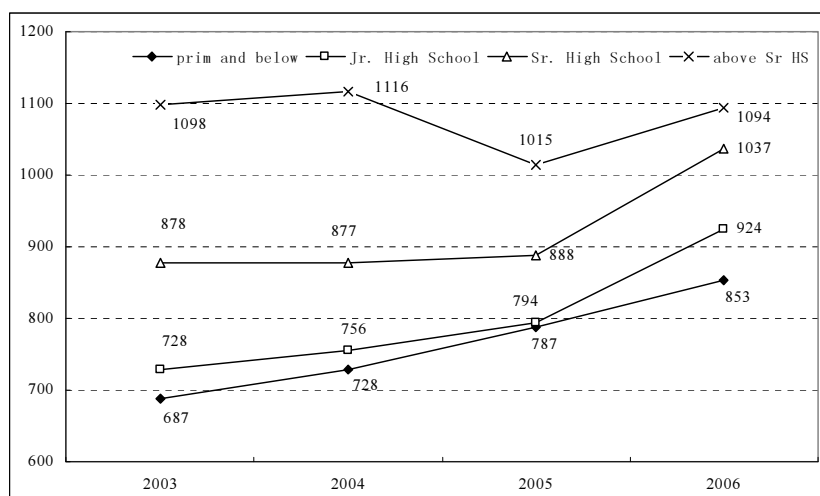


Figure 3 Wage Trends of Migrant Workers by Education Attainment

Source: Author's calculation from RCRE data.

most significant and stable wage increase with an annual growth rate of 9%. Similarly, workers whose education attainments are primary schooling or below, the annual growth rate was 8.1%. Wage rising of low-skilled workers implies that labor shortage is not a transitory or structural phenomenon but is caused by the imbalance between aggregated demand for and supply of labor. As a result, this trend is helpful to narrow the income gaps between migrant workers and those who worked in formal sectors.

### 3. Informal Employment and Income Disparity

During the period of serious labor market dislocation, labor market informalization helped reduce poverty by increasing the size of total employment. But, the role of informal employment on income generation has been different

from the changing situations of labor market. During the early stage of economic restructuring, there were three groups of labor market participants: the unemployed, the informal workers, and the formal workers. Compared to the unemployed, informal workers generated some income which had a positive effect on poverty reduction.

When the unemployment rate declines, the income distribution curve will shift to the right, as the left part of Figure 4 shows, the effect of informal employment on income generation will not be as obvious as before. Of course, because of the relatively fixed (absolute) poverty line that is determined by subsistence expenditure, earnings from informal work are still helpful for poverty reduction although they are not good income generators any more (Cai, et. al, 2006).

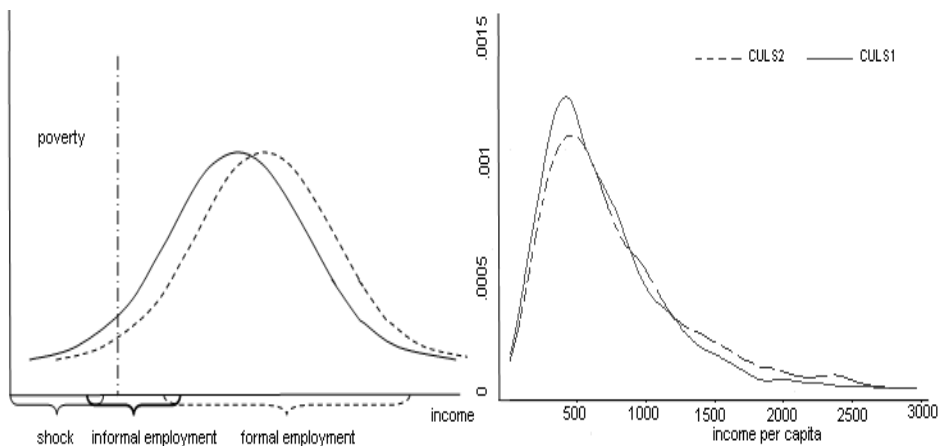


Figure 4 Impacts of Informal Employment on Income and Poverty

Considering that migrant workers accounted for a large share of informal employment, it is of importance to make use of urban labor market to provide income sources for those migrants. Working even in informal sector, migration workers enhance their productivity compared to primary sector. According to the statistics from NBS (2007), wage income accounted for 38.3 percent of average net income in rural households in 2006. In some typical migrants sending provinces the ratio is even higher (45.6 percent in Chongqing and 42.8 percent in Hunan). Therefore working in the informal sector is an essential income generator for rural residents.

#### 4. The impact of Social Policies

In addition to active labor market programs initiated in the 1990s, China has been reforming the social benefit system after the labor market dislocation. In recent years, a host of social assistance programs are implemented in the urban labor market. Since these programs are directly targeted low income group with income transfer, it is reasonable to believe that they are helpful to reduce income inequality.

In urban areas, the on-going reforms on social benefit system have already made some good results in terms of the social protection for vulnerable groups. At the very beginning, the policies

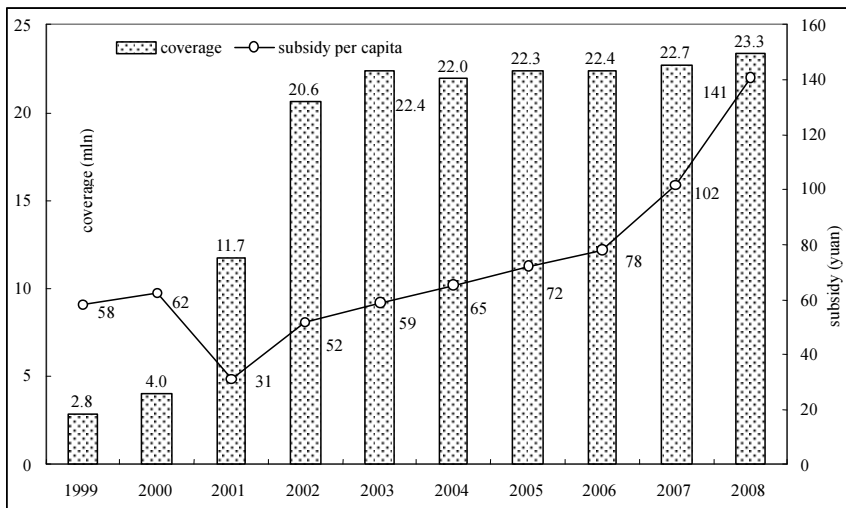
attached closely with employment status were mainly used to target the employees suffering from the labor market shocks. When urban poverty emerged, the Chinese government initiated a social assistance program, Minimum Living Standard Allowance (*dibao*), to support the urban poor people. Gradually, the *dibao* program has become the main instrument against urban poverty.

During the urban labor market dislocations, unemployment takes two forms — explicit unemployment and lay-off (*xiagang*). With *xiagang*, workers lost their work but keeping connection with their former employees and receive a certain amount of subsidies. Reemployment Centers<sup>5)</sup> that are established in all SOEs with the requirement of government are responsible to pay laid-off workers' pension insurance and basic living allowance, which was shared by governments at central and local levels, enterprises and part of unemployment insurance funds. Therefore, the *xiagang* subsidy was the first form of social transfers to deal with the labor market dislocations. It is obvious that subsidizing the laid-offs was a temporary program since it only covers the workers who previously worked in SOEs and the employer could not fully fire the workers through *xiagang* program. The number of workers covered by *xiagang* program peaked at

In 1999 the Chinese government enacted *Regulations on Unemployment Insurance* in order to transfer the *xiagang* subsidy to unemployment insurance. From 2000, the government tends to protect the unemployed through unemployment insurance, rather than *xiagang* subsidy. In 2004, there were 16 provinces removed the Reemployment Centers, which means that the laid-offs would get support from unemployment insurance. In 2005, the Ministry of Labor and Social Security (MOLSS) required that all provinces would close the reemployment centers by the end of the year and cover the unemployed through unemployment insurance program. In 2007, the MOLSS claimed that the transformation from support workers from *xiagang* subsidy to unemployment insurance had been done by 2006 (MOLSS, 2007). therefore, since the mid-1990s, un-

employment insurance has become the second social assistance program.

Unlike *dibao* and unemployment insurance that are employment related, *dibao* program directly targets the poors no matter what their employment status were. In 1993, Shanghai was the first city introducing the *dibao* program that support the poors whose income below the official poverty line. Central government positively evaluated Shanghai's experiment. In the next year, the Ministry of Civil Affair proposed to extend Shanghai's experince to other urban areas of China. All cities and the towns where county government located were required to set up the program since 1999. In 2003, the Ministry of Civil Affair claimed that in 2002, *dibao* program has covered all urban poors whose income are below the local *dibao* line. As



Source: Ministry of Civil Affair, *Statistic Report of Civil Affair*, various years.

Figure 5 the coverage and transfer of *dibao*: 1999-2008



figure 1 shows, the number of the poor covered by *dibao* increased dramatically since 1999 and has been stable since 2002. In 2008, 22.33 million urban residents were covered by *dibao* program and the average per capita *dibao* transfer is 141 yuan. However, the *dibao* program has been implemented based on locality of hukou, which means that migrants have been excluded from the program despite of inclusion of them in the urban population statistics.

#### IV. An Empirical Analysis of Labor Migration and Income Inequality

##### 1. Data Explanation

This paper employs an unique dataset collected by Institute of Population and Labor Economics in 5 big cities, Shanghai, Wuhan, Shenyang, Fuzhou, and Xian. The two round surveys are referred to China Urban Labor Survey (CULS), which investigated both the sampled households and individuals. In particular, migrants were sampled in each round of survey.

CULS1 was done in 2001. For urban household sample frame, proportional population sampling approach was used to sample an average of 15 households in each of 70 neighborhood clusters, by making use of the 2000 Population Census data to sample clusters and households. On average 10 households were interviewed in each community,

with additional 5 for spares. For migrant sample frame, the 2000 Census was firstly used to sample 60 communities. Once a neighborhood was selected, the administrative records of the neighborhood committee were used to construct a sample frame of all registered migrants in the neighborhood. In each city, 700 urban households and all individuals in the households who are aged 16 and above were surveyed, and 600 individual migrants were surveyed.

CULS2 was conducted in 2005. A similar sampling strategy was applied; the sample size was a bit different. In each of 5 cities surveyed in CULS2, 500 urban households and all individuals in the household were investigated. For migrants, not only the sampled individual but their families were covered. This change increased the individual sample size of migrants.

##### 2. Measuring Urban Inequality

According to the household survey data, we look at the income inequality changes after transfer and over time respectively. The labor income inequality reflect the effects of labor market outcomes, including employment, wages, and informality, etc., while the income transfer reflects the impacts of social policies.

Table 5 presets inequality indicators including percentile ratio, general

entropy, Gini coefficient, and Atkinson index. The changes of those indicators between 2001 and 2005 indicated that the disparity between high income group and low income group increased. For example, the ratio of top 10 percent to bottom 10 percent increased from 6.32 to 6.82. However, we can not simply judge whether this trend is good or not before going through the labor market changes causing the trend. We will explain it by the following decomposition.

The role of social policy is obvious to reduce the inequality. By calculating the so-called equity-sensitive average income, we may observe how the social assistance programs affect the inequality. In Table 5, the Atkinson Index is more strongly correlated with the extent of poverty. With increasing risk aversion parameter, society attaches more weight to income transfers at the lower end of the distri-

bution and less weight to transfers at the top. For such a reason, we may find that the Atkinson index has a significant decline when applying the risk aversion parameter to 2 that is typically used value of risk aversion parameter. For CULS1, the Atkinson index at 2 of was 0.65 before income transfer and declined to 0.53 after income transfer. In the case of CULS2, the index was 0.52 and 0.46 respectively. Most the changes of income transfer could be attributed to *dibao* transfer.

### 3. A decomposition of the Inequality

To further look at the impacts of labor market changes on inequality, we decompose the inequality based on the regression on per capita income of urban households. We group the factors affecting income inequality as household demographics, human capital, sectoral effects, informality, regional factors, and others

Table 5 Income Inequality of Urban Households

	CULS1		CULS2	
	Labor Income	After Income Transfer	Labor Income	After Income Transfer
p90/p10	6.326	6.407	6.818	6.164
GE(-1)	0.932	0.552	0.551	0.379
GE(0)	0.289	0.276	0.280	0.260
GE(1)	0.275	0.265	0.263	0.254
GE(2)	0.430	0.382	0.339	0.330
Gini	0.387	0.387	0.391	0.384
A(0.5)	0.128	0.125	0.125	0.120
A(1)	0.251	0.241	0.244	0.229
A(2)	0.651	0.525	0.524	0.431

Note: Income transfer includes payment for laid-off, unemployment insurance, and *dibao* (Minimum Living Standard Guarantee) transfer for the poor households

Table 6 Regression Result of Household Income Per Capita

Log of Income Per Capita	CULS1		CULS2	
	coefficients	t	coefficients	t
Household size	-0.07	-5.57	-0.11	-5.97
Ratio of adult workers to household size	0.46	4.95	0.64	5.59
Percentage of male workers to total family labor force	-0.21	-4.42	-0.27	-4.15
Percentage of female workers to total family labor force	-0.10	-2.3	-0.24	-3.66
Average age of adult members	0.02	13.77	0.02	17.08
Percentage of members with college and above education	0.90	17.94	0.85	18.23
Percentage of members with senior high school	0.40	9.46	0.19	5.05
Agriculture	0.52	2.42	0.22	1.56
Mining and Manufacturing	0.39	3.03	0.16	4.08
Construction	0.61	3.91	0.26	4.15
Transport	0.60	4.95	0.19	4.94
Financial Services	0.73	4.83	0.29	5.91
Other Services	0.49	3.97	0.11	2.94
Ratio of wage employment with contract	0.05	1.07	0.08	1.17
Ratio of wage employment without contract	-0.04	-0.57	-0.06	-0.82
Ratio of self-employment	-0.01	-0.24	-0.16	-2.18
Average health status of family members	0.08	6.11	0.05	4.68
Ratio of members with party membership	0.37	7.81	0.32	6.68
Wuhan	-0.55	-10.1	-0.61	-17.38
Shenyang	-0.62	-11.23	-0.66	-18.85
Fuzhou	-0.25	-4.89	-0.27	-8.04
Xian	-0.68	-12.57	-0.66	-19.28
_cons	5.51	43.86	7.55	59
Adj-R <sup>2</sup>	0.41		0.54	
No. of obs.	3426		2449	

Note: Based on the above regression results, we may decompose the income inequality index by source. The methodology proposed by Gary Fields (2002) is applied. Table 7 displays the decomposition results. We are interested in both the share of certain group of factors and its changes over time.

(residuals). Table 6 presents regression results based on the two rounds of household survey. Most variables are statistically significant.

### (1) Demographics

Demographic variables reflect the

working capacity of the households, i.e., the extent the households use labor market. During the period of labor market dislocations, income disparities between family with and without labor forces could be small because even the households with rich human resources

were unable to take advantage of them. When labor market recovered, the income gaps between those two groups of households increased. Therefore, we can see an increased contribution of demographic variables to income inequality.

### (2) Human Capital

The returns to human capital reflected how labor market functions. It is common to see the increasing returns to human capital in a well functioning labor market (Acemoglu, 2002). Although the trend could enlarge the income gaps between well educated and less educated workers, one can not propose policies to stop the trend. As Table 7 presents, the returns to human capital explain about one seventh of total income inequality among urban households in both years, which is the largest contributor to income inequality in 2001 and the third largest in 2005. In such a case, when discussing the increasing income inequality in China, we may aware that some factors are positive during the development procedure of labor market although it might cause inequality increasing. Furthermore, the ideal policy here is to equalize the opportunities of human capital accumulation rather than to hold back returns to human capital.

### (3) Informality

The effects of informalization on income inequality are mixed. On the one

hand, the unemployed or the laid-offs can get employed and make earnings in informal sectors. This employment effect could reduce the overall income inequality by increasing the incomes of low income group. On the other hand, when labor market booms, the wage growth in informal sectors could be slower than that in the formal sectors. In such a case, the informalization might increase income gap between formal and informal sectors and the overall inequality. Due to these two opposite directions, the contribution of informality to overall inequality is relatively small.

As shown in Table 7, when the labor market dislocation in 2001, the employment effects was obvious, the informalization contributed only 0.45 percent to overall income inequality. In 2005, the income effect outweighed the employment effect more significantly and the share increased to 1.93.

### (4) Sectoral Effects

When we inquire household income inequality, we may find that the inter-sector effects do not contribute as much as human capital does. In 2001, the sector differentials explained about 6.2 percent of the inequality among urban households and the share slightly dropped to 5.8 percent in 2005.

Table 7 Decompositions Based on Income Per Capita Regression

	CULS1	CULS2
<b>Demographic</b>	<b>9.67</b>	<b>16.47</b>
Household size	1.18	2.27
Percentage of male workers to total family labor force	0.7	0.64
Percentage of female workers to total family labor force	0.26	0.62
Average age of adult members	2.69	2.95
Ratio of adult workers to household size	4.84	10.09
<b>Human Capital</b>	<b>14.92</b>	<b>14.62</b>
Percentage of members with college and above education	9.79	11.02
Percentage of members with senior high school	1.1	0.05
Average health status of family members	0.9	1.3
Ratio of members with party membership	3.13	2.25
<b>Sectors</b>	<b>6.21</b>	<b>5.82</b>
Agriculture	0.16	0.04
Mining and Manufacturing	0.32	1.09
Construction	0.2	0.36
Transport	1.09	0.52
Financial Services	1.21	1.83
Other Services	3.23	1.98
<b>Informality</b>	<b>0.45</b>	<b>1.93</b>
Ratio of wage employment with contract to labor forces	0.09	1.52
Ratio of wage employment without contract to labor forces	0.68	0.04
Ratio of self-employment to labor forces	-0.32	0.37
<b>Regional</b>	<b>9.67</b>	<b>15.28</b>
Wuhan	3.04	7.29
Shenyang	4.4	3.77
Fuzhou	-1.33	-2.02
Xian	3.56	6.24
<b>Residual</b>	<b>59.08</b>	<b>45.8</b>
<b>Total</b>	<b>100</b>	<b>100</b>

#### (5) Regional Factors

Regional disparities play a role in overall income inequality. The regional factors explained 9.7 percent of overall inequality in 2001 and 15.3 percent in 2005. This means that a balanced development across regions could serve to reduce the income inequality at micro-level.

#### V. Conclusions

In this paper we described some changes in the Chinese labor market recently and probed their influences on income inequality. By taking advantage of household survey data, the impacts of some changes on income inequality are analyzed empirically.

The decomposition of income inequality based on regression analysis on income per capita indicates that labor market changes have had some significant impacts on income inequality, which accounted for 41 percent of overall inequality in 2001, and 54 percent in 2005. For such a reason, it is reasonable to believe that, if China is approaching to a labor market with focus on equity, labor market outcomes will be helpful to hold back the trend of increasing income inequality.

However, we know that, not all contributors of inequality from labor market should be contained. For instance, the disparities of human capital explained one seventh of income inequality, which showing that the labor market functions well. Income policy aimed to reduce the income inequality is to equalize the opportunities of human capital accumulation rather than to hold back the returns to human capital.

One question remains in this paper is that to what extent the rural-urban migration affects the overall inequality? For such a concern, combination of surveys of migrants and urban residents is necessary and that will be our further work in the future.

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**Notes**

- 1) TVEs are industries owned by townships and villages. At the early stage of the reform and they were the main forces driving the rural industrialization in 1980s and 1990s. In 2007, the employment in TVEs reached 150.9 million.
- 2) The rural land is collectively owned and the farmers have the rights to cultivate, which leads to the average size of each farm is very small.
- 3) In the same year, China issued other relevant documents such as Temporary Regulations on Dismissal of Lawbreaking Worker in State-owned Enterprises, Temporary Regulations on State-owned Enterprises Workers, Temporary Regulations on State-owned Enterprises Recruitment of Workers, Temporary Regulations on Laid-off Workers of State-owned Enterprises, and so on. The issue of these documents signaled that the reforms of urban labor policies comprehensively started.
- 4) Studies show that there is only a small overlap between migrants' and urban workers' jobs because of the existing institutional

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segmentation, therefore migrants actually are not direct competitors of their counterparts in the cities (see for example (Solinger, 1999) and (Cai, 2000), chapter 6).

- 5) Shanghai was the first provincial city to establish Reemployment Centers in 1996.

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