Wage inequality of Chinese rural-urban migrants between 2002 and 2007

Zhong Zhao
Zhaopeng Qu

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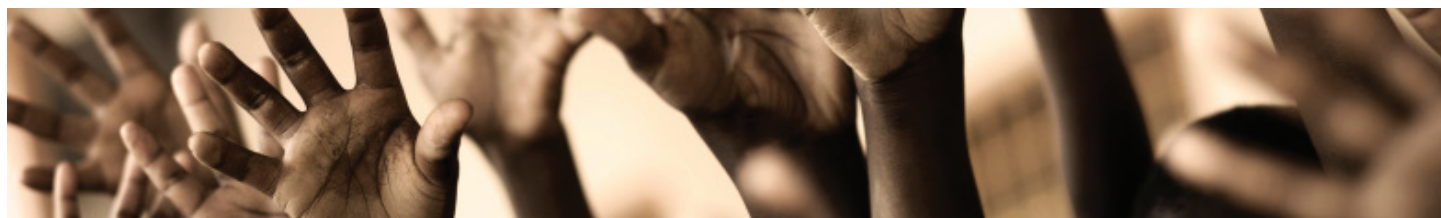
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Abstract

The paper studies the levels and changes in wage inequality among Chinese rural-urban migrants from 2002 to 2007. We use the Chinese Household Income Project dataset and the Rural to Urban Migration in China dataset to construct a unique dataset that allows us to document changing wage inequality among migrants and among urban natives between 2002 and 2007. We find that wage inequality among migrants decreased significantly between 2002 and 2007, whereas it increased among urban natives during the same period. Our results show that the high-wage migrants experienced slower wage growth than middle- and low-wage migrants, a primary cause of declining inequality among migrants. We used distributional decomposition methods, and find that the overall between-group effect (coefficient effect) dominates in the whole wage distribution of the migrants, which means that the change in returns to the characteristics (education and experience) play a key role, but on the upper tails of the wage distribution, the within group effect (residual price effect) dominates which implies that the unobservable factors or institutional barriers do not favor the migrants at the top tail of the wage distribution.

Authors

Zhong Zhao
Renmin University of China and
Institute for the Study of Labor (IZA)
Beijing, China

Zhaopeng Qu
Nanjing University
Nanjing, China

Acknowledgements

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I.   Introduction

Since 1988, rural-to-urban migration has become an important social and economic phenomenon in China. Along with the rapid economic growth and after China joined the WTO in 2002, more and more of the rural population has been joining this exodus to the cities, in search of a better life. According to the National Bureau of Statistics of China (NBS), there were around 140 million rural-to-urban migrants (hereafter referred to as "migrants") in 2008.

This phenomenon has attracted significant attention from academics, the public and both the central and local governments. Despite the general recognition that it is important to have a better understanding of these migrants in China, data limitations means that this group is almost invisible in most Chinese official statistics.[1]

Another important social phenomenon during this period has been the widening income and wage distributions in urban China, one of the most remarkable shifts in the structure of labour compensation in the Chinese labour market since economic reform began in China in 1979.

Increasing inequality and large scale rural-urban migration are two of the most important phenomena in contemporary China. Numerous studies cover both of these issues. Many also cover Chinese rural-urban migration. Other researchers focus on the migration decisions, including Hare (1999 and 2002) and Zhao (1999 and 2003), and yet others examine the impact of migration on the source communities (e.g.,Taylor, Rozelle and de Brauw, 2003;Du, Park and Wang,2005; and de Brauw and Giles,2008). Another group of studies focus on labour market segregation between urban natives and migrants in terms of wages, welfare and other aspects, as done by Meng and Zhang (2001), Knight and Yueh (2008), Demurge et al (2009) and Deng and Li (2009). These papers find that migrant workers work more hours and receive less pay than urban natives. This gap is only partially explained by differences in their work-related characteristics and can mostly be attributed to the differing returns to endowments and other unobservable factors, generally assumed to be "discrimination" or "labour market segmentation" in China.

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[1] The National Bureau of Statistics in China had previously conducted household surveys based on theHousehold Registration System, i.e. the *hukou system*. Migrants were not covered in this framework until recently. However, official Chinese government labor statistics (e.g. on unemployment, wages and social security), continue to completely overlook migrants.

Numerous papers have been produced on inequality in China. For example, Gustafsson and Li (2002), Morduch and Sicular (2002) and Benjamin, Brandt and Giles (2005) investigate inequality in rural China. Knight and Song (2003) study the urban inequality over 1988-1995, Tsui (1993) and Kanbur and Zhang (1999) examine regional inequality in China, Knight and Song (1999) and Sicular et al (2007) investigate the urban-rural income gap and Ravallion and Chen (2007) provide a comprehensive study on inequality and poverty in China. Many more studies can be found, such as those by Zhao et al(1994), Zhao, Li and Riskin (1999) and Li, Sicular and Gustafsson (2008), all of which use China Household Income Project (CHIP) data, in addition to other research foundin a journal symposium.[2]

Income inequality has generally been on the rise in China since 1979.Even though it has been widely observed and extensively examined by researchers; data limitations mean that most studies overlook inequality among migrants. The unequal income distribution is a hotly debated topic in Chinese news media, policy circles and academia. The Chinese government is continues to promote development towards a "harmonious society," making it a major goal of the government to curb ever-increasing inequality. However, the picture of inequality in China is incomplete in the absence of good information on the state of inequality among the 140 million migrants; any policy discussion and formulation must therefore take this group into consideration. To fill this gap in the literature, this paper investigates the levels and changes in wage inequality among migrants between 2002 and 2007. A deeper understanding of this phenomenon could be important for both academic and policy making purposes.

To our knowledge there are only few studies related to our paper. One is Zhu (2002), which links migration behaviour and income inequality in China. Another related study is Kanbur and Riskin(2008),who use the migrant section of the 2002 wave of the CHIP, a survey that specifically aimed to document inequality among migrants in 2002.[3]Their paper provides evidence that inequality among migrant households was greater than inequality among both rural and urban households in 2002. Their study focuses on inequality at the national level, so they do not dig deeper into this finding. The fact that they only have one cross-sectional datasetfrom2002 limits the scope of their study, making it impossible for them to investigate the changes in inequality among migrants over time. Qu and Zhao (2011) observe that wage inequality continued to increase

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[2] Also see the published papers in the symposium on Chinese inequality in the December 2006 issue of the *Journal of Comparative Economics*.

[3] It could be the first time in the national wide survey that covered the migrant people. See Li, S., T. Sicular, and B. Gustafsson (2008) and the data section of this paper for details of this survey.

among urban natives between 2002 and 2007, whereas wage inequality among migrants decreased over the same period; they do not provide further analysis on their findings.

The main objectives of this study are to examine the evolution of wage inequality among migrants between2002 and2007, to compare inequality among migrants with that among urban natives and to investigate the sources and causes behind these trends.

Following the classical human capital theory proposed by Mincer (1974), a wage distribution can mostly be explained by variables linked to a standard human capital model, such as education and experience. However, many studies show that residual wage inequality within a group of workers with the same level of education and experience explains most of the growth in overall wage inequality, including Juhn, Murphy and Pierce (1993) and Autor, Katz and Kearney (2005). Several studies on wage inequality in urban China, such as those by Xing and Li (2012) and Meng et al (2012), also show that observable skills such as education and experience only explain 30%of wage dispersion in urban China. Residual wage inequality among migrants could be even greater than in other countries because China has experienced a rather long period of institutional segmentation between rural and urban labour markets as a result of the *hukou* household registration system. While the *hukou* system is getting smaller, it still affects migrants in many ways and hampers their assimilation in urban China. Even if migrants had the same level of education and working experience as their urban counterparts, migrants are unlikely to obtain overall remuneration that is comparable to urban natives. In other words, residual inequality among migrants is higher because it reflects major unobservable institutional factors which may significantly impact migrant wages.

We follow Autor, Katz and Kearney (2005) to decompose changes in inequality into a between-group price effect, a within-group residual price effect and a labour force composition effect. We perform this decomposition across the income distribution, allowing us to determine which component dominates changes in wage inequality during our period of study.

The following are a number of key findings emerging from our study. First, both migrants and urban natives enjoyed significant wage increases between 2002 and2007.[4] The average monthly wage respectively rose by 61.59% and 62.31%among urban natives

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[4] All wages in this paper are deflated to 2002 price level by provincial level CPI..

and migrants, while the increases in mean hourly wages were about 58.46% and 70.09% for urban natives and migrants. The wage gap between the two groups narrowed because migrant wages grew faster.

Second, migrant wages did not increase uniformly across the wage distribution. High-wage migrants experienced slower wage growth than middle- and low-wage migrants, which we interpret as "glass ceiling" effects for migrants. This is one of the main reasons that inequality among migrants decreased significantly.

Last but not least, our decomposition shows that between-group differences in education and experience dominate across much of the migrant wage distribution, where as residual within-group effects dominate at the higher end of the wage distribution. The importance of the residual effect among higher-income migrants suggests the presence of unobservable factors or institutional barriers which impede these migrants.

The remainder of the paper is organized as follows. Section II describes the datasets used in the paper. Section III documents the structure of wages, along with the level and changes in inequality between 2002 and 2007 among migrants, then compares migrants with urban natives. Section IV introduces the decomposition method proposed by Autor, Katz and Kearney(2005). Section V presents the main decomposition results and discussions. Section VI concludes the paper.

II.   The CHIP and the RUMiC data; descriptive statistics

2.1.   The CHIP and the RUMiC data sets

The data in the paper come from two different sources. The first is the CHIP data et collected by the Institute of Economics of the Chinese Academy of Social Sciences with the support of the NBS in 1988, 1995 and 2002. Although each wave of the CHIP has very large samples in both urban and rural areas, the 1988 and 1995 waves did not cover migrants living in cities; the 2002 version also surveys migrants in 28 cities across12 provinces.[5]

The second dataset comes from the Rural-Urban Migration in China (RUMiC) research program, conducted by an international team headed by researchers at the Australian

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[5]An observed individual is defined as a migrant if he or she is registered as a rural resident and has been living in the urban area for more than 6 months. For the details about the CHIP and the new section of the survey covering migrants, refer to Li et al (2008).

National University and with cooperation from Chinese scholars. The RUMiC aims to obtain a representative panel dataset on rural-urban migrants in China. The first wave (collected in 2008) covers 5000 migrant households living in 15 cities in 10 provinces in China,[6] in addition to rural and urban samples. Much like the CHIP, the rural and urban RUMiC surveys are also supported by the NBS.

Both surveys record detailed household information from the respondents, such as income and expenditures, demographic characteristics, and work and employment information. We only use the urban and migrant samples in this paper, and construct a single repeated cross-section of data from these two sources. The final dataset covers migrants living in cities as well as urban natives in the same cities as the migrants.

It is important to note that only those migrants with a fixed residence were sampled in 2002. Migrants living in a dormitory or workplace such as a construction site were not included in the 2002 sample. The 2007 sample covered migrants living in a dormitory or workplace, so we have to exclude these observations to make the 2007 sample comparable to the 2002 sample.[7]

Comparability is not a problem in the urban sample, since the CHIP and RUMiC survey teams both carried out their urban surveys with the help of the NBS and drew their observations from the NBS sampling frame.

2.2. Selection of the sample and summary statistics

The urban and migrant samples used in this study are from the same seven cities in 2002 and 2007: Hefei, Zhengzhou, Wuhan, Wuxi, Guangzhou, Chongqing and Chengdu. We further restrict the sample to manage 16-60 and women aged 16-55, in line with the official male and female retirement ages. For the wage structure analysis, we retain employed individuals with a positive wage.[8]

Refer to Table 1, on pages 20-21

Table 1 presents summary statistics on individual characteristics, work related variables, and wage information for both migrants and urban natives in 2002 and 2007. The table clearly shows that the migrants earn much lower wages than urban natives in both

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[6] For the details about the RUMiC, please see Meng et al (2010).
[7] We assume that our sample may represent most migrants in the population. Our finding that high-wage migrants experienced slower wage growth than middle- and low-wage migrants leads us to believe that this left-censoring in our sample will not have an important effect on our main results.
[8] We calculate the unemployment rate of migrants, but the number is quite small and is nearly the same in both periods, so we only analyzed the working sample.

years. Wages increased significantly for both groups over this 5-year period: urban natives saw average monthly wages increase from 1168.39 to 1887.99 Chinese yuan, while the corresponding increase among migrants was from 868.68 to 1182.54 Chinese yuan; hourly wages also increased among both urban natives (from 6.74to 10.68yuan per hour) and among migrants (from 3.21to 5.46yuan per hour). Average weekly working hours for urban natives was 43.2 in 2002 and 44.64 in 2007. Average weekly working hours among migrants was very high in 2002 at 71.88 hours per week, a figure that decreased substantially to 64.81 hours per week in 2007. Since migrants work more hours than urban natives, we feel it is preferable to measure earnings on an hourly basis.

In terms of gender, the percentage of females among the employed is similar between urban natives (43%) and migrants (46%). Migrants tend to be younger, although both groups were younger in the 2002 sample than in 2007. The average age of migrants was is 34.97 in 2002 and 32.56 in 2007; the average age of urban natives was 41.3 in 2002 and 39.11 in 2007.

This table (p.20-21) also shows that migrants were more likely to be married and to be a minority in 2002.[9] The percentages of married individuals and of minorities remained quite stable among urban natives remain over 2002-2007, while both of these percentages decreased among migrants during this period.

In terms of education, it is not surprising to find that migrants have less schooling than urban natives, although both groups saw significant increases in education levels between 2002 and 2007. The table also presents self-reported health status. The trend differs for these two groups: 91% of migrants reported being in good health in the 2002 sample, a share that declined to 85% in 2007; this figure increased among urban natives, from 65% in 2002 to 78% in 2007.

Finally, table 1 summarizes information on work related variables, such as the type of labour contract, sector of activity and the firm's type of ownership. The share of migrants with a permanent or long-term labour contract is very low, while self-employment is much more common among migrants. There are also significant differences between migrants and urban natives in terms of the sector of activity and the ownership type of firms employing these individuals.

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[9] The higher marriage rate in the migrant sample reflects the fact that we only include the migrants with a fixed resident place in our analysis.

III.   Wage structure and inequality

Table 2 (p. 22) describes overall (monthly and hourly) wage inequality among urban natives and among migrants in 2002 and 2007. Monthly wages among urban natives and migrants both increased sharply, by about 62%, over the 5-year period. When looking at average hourly wages, the increase is much less among urban natives (58%) than among migrants (70%).

Refer to Table 2, on page 22

Table 2 also shows what happened to wage inequality over the 5-year period using the Kuznets ratio at the 90[th]and 10th percentile of wages. This approach yields the very interesting result that the migrant and urban native segments of the population experienced very different changes in inequality over this period. All measures of wage inequality among urban natives rose except at the lower end of the distribution. This evidence is corroborated by recent several studies on urban wage inequality in China, including Meng (2012) and Ge and Yang (2012). The opposite trend exists among migrants, as indicated by declining age inequality over this time frame.

We calculate a separate Gini coefficient and Theil index for both migrants and urban natives in 2002 and 2007. These results are presented in table 3 (p. 23), and confirm the diverging trends with respect to wage inequality among these two groups. For example, the Gini coefficient for monthly urban wages increased by 0.02 from 2002 to 2007, but decreased by 0.05 for migrants during the same period. If we use hourly wages to calculate the Gini coefficient, the diverging inequality trends are even more pronounced: this Gini coefficient increased by 0.02 for urban natives and decreased by 0.09 for migrants. The Theil index shows similar results.

Refer to Table 3, on page 23

Figure 1 (p. 28) details changes in the logs of hourly and monthly wages across the entire wage distribution for both migrants and urban natives. The log of migrant wages increases by more than that of urban natives except at the higher end of the wage distribution. The fastest wage increases among migrants in this period are found in the middle of the wage distribution, where as wage increases among urban natives take on a roughly "U" shape curve along the wage distribution.

Refer to Figure 1, on page 28

This U-shaped curve indicates that urban wages grew faster in the bottom and top quantiles. When comparing wage increases among migrants and urban natives, we

witness a "glass ceiling" effect for the migrants, which we will investigate in more detail later in this paper.[10] Basically, relatively well-off migrants benefited less during this period. This is one of the main reasons that inequality has decreased significantly among migrants.

As for urban natives, wage growth has been fastest at the bottom of the distribution, but wage growth is also higher at the top of the distribution than in the middle. Inequality among the urban natives in our sample thus increased.

3.1.   Inequality across groups

The above descriptive statistics demonstrate that wage inequality increased among urban natives and decreased among migrants. These statistics only pertain to the overall wage distribution and do not tell us much about within-group differences or between-group differences by education and experience levels. Mincer (1974) shows that these factors are very important in the wage equation. Lemieux (2006) and Autor, Katz, and Kearney (2005) show the importance of exploring these two factors in order to understand changing inequality in the United States. Table 4 (p.24) gives us a first look at this issue by examining wage changes by experience and education level.

Refer to Table 4, on page 24

Panel A of the table shows a very interesting pattern: more experienced urban natives see smaller wage increases. This implies that the situation of the younger cohort is improving faster than that of the older cohort. The pattern among migrants, however, is not so clear.[11]

We document wage changes by level of education in panel B of table 4. It shows that migrant wages increased by more than those of urban natives in every educational group, except for those who have not completed primary schooling.

The most obvious things we can see in table 4 is that wage inequality increased significantly across groups by education and experience. Inequality within these groups

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[10]In the literature of labour economics, especially with respect to gender pay gaps, a "glass ceiling effect" often refers to a phenomenon where people, especially women, are unable to achieve promotions beyond a certain level. We borrow the term "glass ceiling effect" to describe the similar phenomenon observed among Chinese migrants.
[11]One issue with this table is that we use potential experience, which probably is not a good measure for migrants. So we also include results based on years since first migration for migrants. Our results suggest that migrants with 3-5 years of migration experience have the biggest wage increase (about 96%).

could also be important. It reminds us to investigate the residual inequality which can be attributed within narrowly defined education and experience categories.

3.2. Residual inequality

To measure the unexplained residual factors behind inequality within the migrant and urban native groups, we follow Autor, Katz, and Kearney (2005), and begin by estimating the Mincerian wage equations for the two groups:

$$\ln W_{iu} = \alpha + S_{iu} + E_{iu} + E^2_{iu} + R_{iu} + \varepsilon_{iu}$$

Where W_i is the log hourly wage of individual i, S_i is the schooling level of i, E_i, and E_i^2 are the potential experience and its square of the individual i, and R_i is a vector of city dummies to control for regional differences in China. The subscripts u and r refer to urban natives and migrants.

Refer to Table 5, on page 25

Table 5 presents the results of the Mincerian wage equations for migrants and urban natives in 2002 and 2007. The human capital variables (education and potential experience) have large coefficients for both migrants and urban natives.

The groups differ in their returns to schooling during over 2002-2007.This rate decreased for urban natives and increased for migrants over the period, indicating a convergence in the returns to education for migrants and urban natives. A similar pattern appears with respect to returns to experience. These two findings suggest that the price of human capital in the Chinese labour market is increasingly governed by the one price rule.

Refer to Table 6, on page 26

Table 6 presents measures of income inequality for migrant and urban natives in 2002 and 2007. Residual inequality in table 6 and overall inequality in table 2 (p.22) exhibit a similar trend. In other words, inequality decreased among migrants and increased among urban natives. The magnitude of change is considerably less, implying that unobserved factors do not have a major effect on inequality because the changes in residual inequality only account for a small share of the changes in overall inequality among migrants.

IV. **Analytical Framework:**
Autor, Katz and Kearney distributional decomposition

To understand the factors behind wage changes among migrants and urban natives, we can begin by referring to a standard analytical framework found inOaxaca (1973) and Blinder (1973). This allows us to decompose the increase in hourly wages over this 5-year period into *price effects* (resulting from changes in coefficients) and *endowment effects* (resulting from changesinthe characteristics of the migrants).

We should mention that the standard Oaxaca-Blinder decomposition is based on sample means. Since our goal is to analyze changesin inequality rather than changes in average wages, we need a tool to analyze the entirewage distribution. We opted for a quantile decomposition method, such as the one proposed by Machado and Mata (2005) (hereafter "MM"). We also wish to account for residual inequality, calculated using an extended version of MM developed by Autor, Katz and Kearney (2005) (hereafter "AKK"). Specifically, in this paper, we use the AKK method to partition changes in the wage distribution into three components: the coefficients on median wages capture changes in returns to endowments, the residual captures unobserved within-group factors and education and experience variables are also included to reflect changing labour market conditions on the supply side between 2002 and 2007.

A number of other approaches have been used toaccount for the entire wage distribution when analyzing wage inequality, such as the JMP method proposed by Juhn, Murphy and Pierce (1993) and the DFL method developed by Dinardo, Fortin and Lemieux (1996). The MM and AKK methods have four advantages when constructinga "counterfactual" distribution. First, the "predict" or "counterfactual" distribution based on MM method should be more "accurate" because it allow the estimated coefficients to be varied over quantiles through applying a quantile regression while the coefficients in JMP method cannot be like that because it is estimated by an OLS regression. Second, under the convenient partial equilibrium assumption, MM method can be used to study the effect of changing both composition (endowment) and coefficient (price) on distribution of wages. Third, the MM method can be easily extended to study the residual inequality and readily provides a "uniform and consistent" treatment of both overall inequality and residual inequality. Forth, the JMP and DFL approaches are both naturally builtinto the MM quantile model. Last but not least, the AKK method isa very natural extension of MM which accounts for the residual. Please see Autor, Katz and Kearney (2005) for more details on the advantages of the AKK approach. These advantages lead us to primarily base our analysis on the MM and AKK approaches.

We will now describe our application of the AKK method. Let $Q_\theta(w|x)$ for $\theta \in (0,1)$ denote the θth quantile of the distribution of the log of wage (or income) given the vector of covariates x. The quantile regression equation is thus

$$Q_\theta(w|x) = x'\beta(\theta),\qquad(1)$$

and the unconditional quantile distribution is

$$\hat{w} = X\hat{\beta}'(\theta).\qquad(2)$$

Following Autor, Katz and Kearney (2005), we refer to the vector of coefficients estimated at the 50th quantile (the median) as $\hat{\beta}^b(\theta) \equiv \hat{\beta}(50)$; this vector provides us with a measure of between-group inequality. We define within-group inequality as the difference between the estimated coefficient vector $\hat{\beta}(\theta)$ and the median coefficient vector $\hat{\beta}(50)$ as follows:

$$\hat{\beta}^w(\theta) \equiv [\hat{\beta}(\theta) - \hat{\beta}^b(\theta)] \text{ for } \theta \in (0,1)\qquad(3)$$

In summary, the distribution of wages can be seen as a function of three components: the distribution of covariates (labor force composition), $g(x)$, the vector of between-group prices, and the matrix of within-group (residual) prices. We thus define the wage distribution as

$$f_t(\hat{w}_t) \equiv f(g_t(x), \hat{\beta}_t^b, \hat{\beta}_t^w)\qquad(4)$$

Now we can use this unconditional distribution to construct counterfactual data points and then quantify these three groups of factors in each quantile.

Firstly, the overall change in wages by quantile between 2002 and 2007 is

$$\Delta Q_\theta = Q_\theta(f_{2007}(w)) - Q_\theta(f_{2002}(w)) =$$

$$Q_\theta\left(f(g_{2007}(x), \hat{\beta}_{2007}^b, \hat{\beta}_{2007}^w)\right) - Q_\theta\left(f(g_{2002}(x), \hat{\beta}_{2002}^b, \hat{\beta}_{2002}^w)\right)$$

Secondly, the change in wages by quantile between 2002 and 2007 resulting from changes in human capital (education and experience) is:

$$\Delta Q_\theta^x = Q_\theta\left(f(g_{2007}(x), \hat{\beta}_{2002}^b, \hat{\beta}_{2002}^w)\right) - Q_\theta\left(f(g_{2002}(x), \hat{\beta}_{2002}^b, \hat{\beta}_{2002}^w)\right)$$

Thirdly, the increase in the price of human capital on the labour market between 2002 and 2007 leads to the following change in wages, by quantile:

$$\Delta Q_\theta^b = Q_\theta \left(f\left(g_{2007}(x), \hat{\beta}_{2007}^b, \hat{\beta}_{2002}^w\right) \right) - Q_\theta \left(f\left(g_{2007}(x), \hat{\beta}_{2002}^b, \hat{\beta}_{2002}^w\right) \right)$$

Finally, increases in unobserved factors, possibly driven by factors inherent to rural and urban labour markets, are defined as leading to the following changes in wages between 2002 and 2007, by quantile:

$$\Delta Q_\theta^w = Q_\theta \left(f\left(g_{2007}(x), \hat{\beta}_{2007}^b, \hat{\beta}_{2007}^w\right) \right) - Q_\theta \left(f\left(g_{2007}(x), \hat{\beta}_{2007}^b, \hat{\beta}_{2002}^w\right) \right)$$

The total observed change is the sum of this decomposition:

$$Q_\theta = \Delta Q_\theta^x + \Delta Q_\theta^b + \Delta Q_\theta^w$$

This equation specifies the change in wages as resulting from three factors: the increase inhuman capital (education and experience), the rising market price ofhuman capital and the increase of unobservablefactors.

The results of the decomposition can be sensitive to the selection of the reference group. To overcome this problem we use the weighted average of 2002 and 2007 as a point of reference for each of the decompositions.

V.   Empirical results[12]

5.1.   Overall decomposition

Figure 2 (p.29) shows the main results of the AKK decomposition. Wage changes among migrants (panel A) vary across the wage distribution. Although wages increased across the entire distribution, migrants in the median and lower quantiles enjoyed faster wage growth. Urban natives saw wages rise fastest at the extremes of the income distribution.

Refer to Figure 2, on page 29

The between-group (median) effect of migrant education on their wages dominates the other two effects, although the size of this effect appears off somewhat along the wage distribution. The second important contributor is migrant composition, a factor whose importance increases along the income distribution. The within-group (residual) effect is negative, and is only relevant in the top quantiles. This suggests the presence of

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[12]All of our results are computed by the statistical software, Stata with 11th version.

unobservable factors or an institutional barrier (such as a glass ceiling) which negatively impacts the highest earning migrants.

Among urban natives, the between-group effect (panel B) explains much of the change in wages. Labour force composition and within-group effects play a very minor role, although their impacts are more important at the extremes of the income distribution.

Figure 3 (p.30) shows migrant and urban native wages in 2002 and 2007, and illustrates possible factors behind the related wage gap using a AKK decomposition. In 2002, the between-group effect and differences in the composition of urban natives and migrants both play an important role. Stated differently, differences in the level and rate of return of the endowment between migrants and urban natives both contribute significantly to the wage gap. The between-group effect becomes even more important in 2007.

Refer to Figure 3, on page 30

We obtain some interesting results using the AKK distributional decomposition method, but our analysis is based on a full sample of migrants and urban natives. Given the major differences in characteristics generally observed between migrants and urban natives in China, it seems natural to construct comparable groups to control for these differences. To achieve this, we apply the Rosenbaum and Rubin (1983) propensity score matching approach to produce a new matched sample to ensure that migrants and urban natives are comparable with respect to the observed variables.[13] More specifically, when carrying out propensity score matching to construct a comparable sample, we match the migrant sample to the urban sample through one-to-one matching without replacement, and only keep the observations in the common support.[14] All the variables in table 1 (p.20-21) - other than migration experience - are used in the matching process.

Refer to Figure 4, on page 31

Figure 4 shows the AKK decomposition resultsfrom this matched sample. The pattern and the magnitudeof each component are generallysimilar to those seen in figure 3.The between-group effect still dominatesthe other two effects for both migrants and

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[13] Zhang, Meng and Wang (2010) also apply propensity score matching method to control for observable differences when they study assimilation of Chinese rural to urban migrants.
[14]The common support of the matching is shown in Appendix Figure 1, on page 34.

urban natives, i.e. the coefficient effect is the most important contributor to the migrant-urban native wage gap.

5.2.   Interpretations

How did inequality among migrants decrease between 2002 and 2007? The main reason is that wage gains among migrants at the higher end of the wage distribution were lower over this period, thereby compressing the wage distribution among migrants. This is similar to the "glass ceiling" effect in the gender literature. Figure 5 (p.32) is produced using a matched sample from the propensity score matching, and highlights the importance of "glass ceiling" effects for migrants.

Refer to Figure 5, on page 32

Remember that all the observed characteristicsin the matched sample are comparable for migrants and urban natives. Figure 5 shows that wage growth was similar for migrants and urban natives at the bottom and middle of the wage distribution between 2002 and 2007, whereas wage growth among higher earningmigrants is considerably lower than among urban natives. This reflects the fact that, although urban labour markets in China are highly competitive in lower skilled positions, significant institutional barriers against migrants still existin position which require more advanced skills, or which in any case receive higher pay (as may occur in state monopolized sectors and industries).

Refer to Figure 6, on page 33

A potential issue can be seen in figure 5 : migrants and urban natives at the same percentile of wages within their respective groups earn a different level of wages, a situation that is commonly found in China. Namely, the median wage is much higher among urban natives than among migrants. We overcome this potential shortcoming, as seen in figure 6 (p.33), which presents the results when wages rather the percentile of wages are used on the horizontal axis. This allows us to compare wage growth between migrants and urban natives who were at the same wage level in 2002. The general pattern in figure 6 is similar to that in figure 5, in that migrants and urban natives at the lower end of the wage spectrum experienced a similar rate of wage growth rate between 2002 and 2007. Meanwhile, the highest earning migrants experienced much slower wage growth.

Moreevidence of the "glass ceiling" effect appears in Qu and Zhao (2011). Using the same data as in this paper, they find that the Duncan Segmentation Index between migrants and urban natives in China urban labor market decreased among the least educated (middle school and below), but not among the mosthighly educated (high school and above) between2002 and 2007.[15]

Our results also provideindirect evidence for the incomplete substitutability of migrants and urban natives. Specifically, the substitutability is mostly at the top of the wage distribution, while the complementation only exists in the middle and lower wage groups on the wage distribution of migrants.

Besides the "glass ceiling" effect, minimum wages are another institutional factor driving the changing wage structure among urban natives. Table 7 (p. 27) shows the 2002 and 2007 minimum wages in the sampled provinces. The minimum wages increased significantly between 2002 and 2007 in all 7 provinces, with increases ranging from 45% to 124%. The related wage growth was concentrated among low-wage urban natives. Table 7 also presents city-level average monthly wages for urban natives and the percentage of urban natives in our sample earning less than the minimum wage. A considerable share of urban natives earned less than minimum wage: this share ranged from 4% to 12% in 2002 and from 2% to 10% in 2007, representing a decline in the percentage of urban natives earning less than the minimum wage. The increase in the minimum wage and the decrease in the incidence of wages under the minimumboth help to explain the relatively faster rate of wage growth among urban natives at the lower end of the wage distribution. It is also worth noting that, prior to2008, migrants were not covered by minimum wage protection.[16]

Refer to Table 7, on page 27

VI.   Policy implications and concluding remarks

The paper studies the level and change in wage inequality among Chinese rural-urban migrants between 2002 and 2007. We use the Chinese Household Income Project dataset and the Rural to Urban Migration in China dataset to construct a dataset which allows us to document basic facts about the wage structure of migrants and urban

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[15] For example, Qu and Zhao (2011) find that the Duncan Index has decreased from 0. 44 to 0.34 for middle school education group, but has increased from 0.45 to 0.46 for college and above education group from 2002 to 2007.

[16] China enacted its labor contract law in 2008, and the law requires employers to provide the same labor protections for urban natives and migrants; labor protection and minimum wages continue to be less strictly enforced for migrants.

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natives in 2002 and 2007. Wefocus on changing wage inequality among migrants over time. We find that wage inequality among migrants has decreased significantly.We also observe an increase inwage inequality among urban natives between 2002 and 2007. Using distributional decomposition methodsto investigate the change of wage distribution among migrants between 2002 and 2007, we find that the overall between-group effect tends todominate, except at the higher end of the wage distribution, where the within-group effect dominates.

The above findings highlight the importance of education and experience. Currently, segmentation between rural and urban populations means that migrants and other rural people are much less educated than urban natives. This disparity in education is one of the most important sources of overall inequality in China. The lower educational level of migrants also hampers technological innovation in China and creates a shortage of skilledworkers in the Chinese manufacturing sector. A policy targeting reduced educational disparities between rural and urban populations will be highly beneficial.

Furthermore, we identify two factorsbehind the different patterns of wage inequality among migrants and among urban natives:a "glass ceiling" effect for high-earning migrants and a minimum wage effect for low wage urban migrants.The "glass ceiling effect" compresses the migrant wage distribution, reflecting the fact that, although the Chinese urban labour is highly competitive at the lower end of the wage spectrum, significant institutional barriers continue to limit migrants' ability to enter highly skilled and highly paid positions, such as in state monopolized sectors and industries or public administrations.

This situation highlights the importance ofunderstanding the roots ofinequality before formulating policy recommendations. Although the Chinese public and the government both tend to view increases in inequality negatively, our findings suggest that the particular case of decreasing wage inequality among migrants between 2002 and2007 is no cause for celebration, since it largely results from the presence of a "glass ceiling" which limits migrant access to more highly paid positions.

References

AutorDand L. Katz.1999. "Changes in the Wage Structure and Earnings Inequality" in .*Handbook of Labor Economics*, 3A, pp.1463–1555.

Autor, D, L. Katz and M. Kearney.2005. "Rising Wage Inequality: The Role of Composition and Prices."*Working paper no. 11628*, National Bureau of Economic Research, Cambridge, Massachusetts.

Benjamin, D., L. Brandt and J. Giles.2005. "The Evolution of Income Inequality in Rural China."*Economic Development and Cultural Change*, 53, pp. 769–824.

Blinder, A. S.1973. "Wage Discrimination: Reduced Form and Structural variables." *Journal of Human Resources*, 8, pp. 436–455.

deBrauw, A. and J. Giles. 2008. "Migrant Labor Markets and the Welfare of Rural Households in the Developing World: Evidence from China." World Bank Policy Research Working Paper No. 4585.

Demurger, S., M. Gurgand, S. Li and X. Yue.2009. "Migrants as Second-class Workers in Urban China?A Decomposition Analysis."*Journal of Comparative Economics*,37, pp. 610–628.

Deng, Q. and S. Li.2010. "Wage Structures and Inequality among Local and Migrant and Urban Workers,"In *The Great Migration: Rural-Urban Migration in China and Indonesia*, eds. XinMeng, Chris Manning, Shi Li and TadjuddinNoer Effendi. Edward Elgar Publishing Ltd.

DiNardo, J., N. Fortin, and T. Lemieux.1996. "Labor Market Institutions and the Distribution of Wages, 1973–1992: A Semi-parametric Approach." *Econometrica*, 64, pp. 1001–1044.

Du, Y., A. Park, and S. Wang.2005. "Migration and Rural Poverty in China."*Journal of Comparative Economics*,33, pp. 688–709.

Ge,S., and D. Yang.2012. "Changes in China's Wage Structure."IZA Discussion Paper No.6492.

Gustafsson, B. and S. Li.2002. "Income Inequality Within and Across Counties in Rural China, 1988 and 1995."*Journal of Development Economics*, 69, pp. 179–204.

Hare, D. 1999. "'Push' versus 'Pull' Factors in Migration Outflows and Returns: Determinants of Migration Status and Spell Duration among China's Rural Population." *Journal of Development Studies* 35:3,pp. 45-72.

Hare, D. 2002. "The Determinants of Job Location and Its Effect on Migrants' Wages: Evidences from Rural China." *Economic Development and Cultural Change* 50:3,pp. 557-579.

Juhn, C., K. Murphy, and B. Pierce.1993. "Wage Inequality and the Rise in Returns to Skill."*Journal of Political Economy*, 101, pp. 410–442.

Kanbur, R. and K. Riskin.2008. "Growth and Distribution of Household Income in China Between 1995 and 2002," in S. Li, T. Sicular and B. Gustafsson (2008) *Research on Income Distribution in China III*. Beijing Normal University Publishing Group: Beijing.

Kanbur, R. and X. Zhang.1999. "Which Regional Inequality?The Evolution of Rural-Urban and Inland-Coastal Inequality in China from 1983 to 1995."*Journal of Comparative Economics*, 27, pp. 686–701.

Knight, J. and L. Song.1999. "The Rural–urban Divide: Economic Disparities and Interactions in China." Oxford University Press: Oxford and New York.

Knight, J. and L. Song.2003. "Increasing Urban Wage Inequality in China."*The Economics of Transition*, 11:4, pp. 597–619.

Knight, J. and L. Yueh.2009. "Segmentationor Competition in China's Urban Labour Market."*Cambridge Journal of Economics*, 33:1, pp. 79–94.

Lemieux, T. 2006. "Increasing Residual Wage Inequality: Composition Effects, Noisy Data, or Rising Demand for Skill?" *American Economic Review*, 96, pp. 461-498.

Li, S., T. Sicular, and B. Gustafsson.2008.*Research on Income Distribution in China III*.Beijing Normal University Publishing Group:Beijing.

Machado, J. and J. Mata.2005."Counterfactual Decomposition of Changes in Wage Distributions Using QuantileRegression."*Journal of Applied Econometrics*, 20, pp. 445–465.

Meng, X., C. Manning, S. Li, and T. N. Effendi.2010.*The Great Migration: Rural-Urban Migration in China and Indonesia*.Edward Elgar Publishing Ltd.

Meng, X., K.Shen and S.Xue.2012."Economic Reform, Education Expansion, and Earnings Inequality for Urban Males in China:1988–2009." *Journal of Comparative Economics*, forthcoming.

Meng, X., and J. Zhang.2001."The Two-Tier Labor Market in Urban China."*Journalof Comparative Economics*, 29, pp. 485–504.

Morduch, J. and T. Sicular.2002."Rethinking Inequality Decomposition, with Evidence from Rural China."*Economic Journal*, 112, pp. 93-106.

Oaxaca, R. 1973."Male-female Wage Differentials in Urban Labor Markets." *International Economic Review*, 14, pp. 693–709.

Ravallion, M. and S. Chen.2007."China's (uneven) progress against poverty."*Journal of Development Economics*, 82, pp. 1–42.

Rosenbaum, P. and D..Rubin.1983."The Central Role of the Propensity Score in Observational Studies for Causal Effects."*Biometrika*, 70, pp. 41–55.

Qu, Z. and Z. Zhao.2011."The Evolution of Chinese Rural-Urban Migrants Labor Market from 2002 to 2007."IZA Discussion Paper No. 5421.

Sicular, T., X. Yue, B. Gustafsson and S. Li. 2007."The Urban-Rural Income Gap and Inequality in China." *Review of Income and Wealth*, 53, pp. 93–126.

Taylor, E, S. Rozelle and A. de Brauw.2003."Migration and Incomes in Source Communities: A New Economics of Migration Perspective from China." *Economic Development and Cultural Change* 52, pp. 75–101.

Tsui, K. 1993."Decomposition of China's Regional Inequalities."*Journal of Comparative Economics*,17, pp. 600–627.

Xing C. and S. Li.2012."Residual Wage Inequality in Urban China, 1995–2007."*China Economic Review*, 23,pp. 205-222.

Zhao, R., K. Griffin, S. Li and L. Zhu.1994.*Studies of Income Distribution in China*. Press of Chinese Social Sciences:Beijing.

Zhao, R., S. Li and C. Riskin.1999.*Re-studies of Income Distribution in China*. China Economics and Finance Press:Beijing.

Zhao, Y. 1999."Leaving the Countryside: Rural-to-Urban Migration Decisions in China."*American Economic Review*,89:2,pp. 281–86.

Zhao, Y. 2003. "The Role of Migrants Networks in Labor Migration: The Case of China." *Contemporary Economic Policy*, 21, pp. 500–511.

Zhang, D., X. Meng and D. Wang.2010."The Dynamics Change in Wage Gap between Urban Residents and Rural Migrants in Chinese Cities." PEP PMMAWorking Paper 2010-03.

Zhu, N. 2002."The Impacts of Income Gaps on Migration Decisions in China."*ChinaEconomic Review*,13, pp. 213–30.

Tables and figures

Table 1. Descriptive Statistics in 2002 and 2007

	Urban Natives				Migrants			
	2002		**2007**		**2002**		**2007**	
Variable	Mean	Std. Dev.	Mean	Std.Dev.	Mean	Std. Dev.	Mean	Std.Dev.
Monthly earnings	1168.39	871.9	1887.99	1871.42	868.68	1182.54	1409.96	1223.72
Hourly earnings	6.74	5.39	10.68	11.62	3.21	5.1	5.46	4.53
Working hours per week	43.2	11.93	44.64	11.12	71.88	19.86	64.81	19.67
Male	0.56	0.5	0.54	0.5	0.55	0.5	0.57	0.5
Age	41.03	9.25	39.11	9.7	34.97	8.07	32.56	9.61
Education (year)	11.58	2.83	12.2	3.62	7.89	2.7	8.97	2.66
Experience (potential experience)	23.45	10.32	20.95	11.17	21.08	9.24	17.59	10.79
Migration experience					7.2	5.16	7.63	6.21
Married	0.89	0.31	0.89	0.31	0.94	0.24	0.74	0.44
Minority	0.01	0.12	0.01	0.1	0.04	0.21	0.01	0.09
Education level								
Less than primary school	0	0.06	0	0.07	0.1	0.3	0.06	0.23
Primary school	0.02	0.13	0.03	0.17	0.22	0.41	0.14	0.35
Middle school	0.21	0.4	0.2	0.4	0.51	0.5	0.55	0.5
High school	0.45	0.5	0.37	0.48	0.16	0.36	0.2	0.4
College and above	0.32	0.47	0.4	0.49	0.02	0.12	0.04	0.2
Health status								
Good	0.65	0.48	0.78	0.41	0.91	0.28	0.85	0.36
Normal	0.31	0.46	0.2	0.4	0.07	0.26	0.14	0.34
Bad	0.04	0.19	0.02	0.13	0.01	0.1	0.02	0.13
Contract type								
Permanent	0.42	0.49	0.36	0.48	0.01	0.07	0.06	0.23
Long term temporary	0.26	0.44	0.39	0.49	0.05	0.21	0.26	0.44
Short term temporary or no contract	0.25	0.43	0.17	0.38	0.26	0.44	0.31	0.46
Self-employed	0.06	0.23	0.07	0.26	0.67	0.47	0.36	0.48
Others	0.02	0.14	0.01	0.07	0.02	0.14	0.02	0.13

Table 1... **Descriptive Statistics in 2002 and 2007 (Continued)**

	Urban Natives				Migrants			
	2002		**2007**		**2002**		**2007**	
Variable	Mean	Std. Dev.	Mean	Std.Dev.	Mean	Std. Dev.	Mean	Std.Dev.
Industry								
Mineral ,Manufactory and Construction	0.33	0.47	0.23	0.42	0.15	0.35	0.22	0.42
Electricity, Gas, Transportation and IT	0.11	0.31	0.18	0.38	0.03	0.18	0.04	0.19
Sales and Hotel	0.13	0.34	0.15	0.36	0.46	0.5	0.52	0.5
Finance, Estate, Health and Education	0.19	0.39	0.21	0.4	0.05	0.22	0.05	0.22
Service	0.14	0.35	0.17	0.37	0.25	0.43	0.17	0.37
Government and Public Administration	0.11	0.31	0.08	0.27	0.06	0.24	0	0.04
Ownership								
State Owned and State Controlled	0.63	0.48	0.51	0.5	0.08	0.27	0.04	0.2
Collective	0.06	0.24	0.02	0.15	0.04	0.2	0.01	0.09
Private	0.05	0.21	0.12	0.32	0.07	0.26	0.3	0.46
Individual	0.05	0.22	0.12	0.33	0.72	0.45	0.47	0.5
Foreign and Joint Venture	0.03	0.18	0.05	0.22	0.01	0.08	0.09	0.28
Other Shared	0.07	0.26	0.09	0.29	0.02	0.15	0.06	0.23
Others	0.1	0.3	0.09	0.28	0.05	0.22	0.04	0.19
City								
Wuxi	0.09	0.29	0.08	0.27	0.18	0.38	0.11	0.32
Hefei	0.08	0.27	0.21	0.41	0.13	0.34	0.14	0.35
Zhengzhou	0.12	0.33	0.13	0.33	0.12	0.32	0.16	0.36
Wuhan	0.17	0.38	0.15	0.36	0.14	0.35	0.14	0.35
Guangzhou	0.17	0.38	0.15	0.36	0.14	0.34	0.14	0.35
Chongqing	0.22	0.41	0.16	0.37	0.15	0.36	0.18	0.38
Chengdu	0.14	0.34	0.11	0.31	0.15	0.35	0.13	0.33
Number of observations	1880		2311		1324		2102	

Table 2. Overall Inequality in 2002 and 2007

	Urban Natives			Migrant		
	2002	2007	Growth (%)	2002	2007	Growth (%)
Monthly Earnings						
Mean	1168.39	1887.99	61.59	868.68	1409.96	62.31
Ratio of 90th to 10th percentile	5.38	5.45	1.3	3.75	3.28	-12.53
Ratio of 90th to median	2.21	2.39	8.14	2.31	1.92	-16.88
Ratio of median to 10th percentile	2.43	2.28	-6.17	1.63	1.7	4.29
Hourly Earnings						
Mean	6.74	10.68	58.46	3.21	5.46	70.09
Ratio of 90th to 10th percentile	6.13	6.26	2.12	4.8	4.4	-8.33
Ratio of 90th to median	2.32	2.6	12.07	2.4	2.18	-9.17
Ratio of median to 10th percentile	2.65	2.41	-9.06	2	2.02	1

Table 3. The Inequality Indices for Urban Natives and Migrants in 2002 and 2007

	Urban Native				Migrant		
	2002	2007	Change		2002	2007	Change
Monthly wage							
Gini coefficient	0.36	0.38	0.02		0.36	0.31	-0.05
Theil index	0.22	0.26	0.04		0.32	0.2	-0.12
Hourly wage							
Gini coefficient	0.38	0.4	0.02		0.43	0.34	-0.09
Theil index	0.25	0.32	0.07		0.43	0.21	-0.22

Table 4. **Wage across Experience and Education Groups, 2002-2007**

	Panel A: Experience Group					
	Urban Native			Migrant		
Experience	2002	2007	Growth (%)	2002	2007	Growth (%)
	Hourly Earnings					
0-10 years	5.65	11.15	97.3	3.18	5.45	71.4
11-20 years	7.03	12.37	76	3.35	5.85	74.6
21-30 years	6.7	9.98	49	2.9	5.23	80.3
30-40 years	7.14	9.24	29.4	3.64	5.08	39.6
Total	6.75	10.72	58.8	3.21	5.46	70.1
	Monthly Earnings					
0-10 years	997	2,047	105.3	767	1,312	71.1
11-20 years	1,211	2,177	79.8	912	1,511	65.7
21-30 years	1,151	1,729	50.2	841	1,439	71.1
30-40 years	1,257	1,619	28.8	905	1,346	48.7
Total	1,171	1,893	61.7	869	1,410	62.3
	Panel B: Education Group					
	Urban Native			Migrant		
Education Level	2002	2007	Growth (%)	2002	2007	Growth (%)
	Hourly Earnings					
Less than primary school	2.56	7.12	178.1	2.03	3.94	94.1
Primary school	4.27	8.27	93.7	2.74	4.83	76.3
Middle school	5.31	8.21	54.6	3.43	5.61	63.6
High school	6.15	9.5	54.5	3.77	5.51	46.2
College and above	8.68	13.15	51.5	4.12	7.49	81.8
Total	6.74	10.68	58.5	3.21	5.46	70.1
	Monthly Earnings					
Less than primary school	454	1,653	264.1	610	1,213	98.9
Primary school	905	1,475	63	783	1,373	75.4
Middle school	948	1,458	53.8	930	1,418	52.5
High school	1,069	1,683	57.4	939	1,395	48.6
College and above	1,475	2,317	57.1	1,037	1,770	70.7
Total	1,168	1,888	61.6	869	1,410	62.3

Table 5. **Mincerian Wage Equations for Urban Natives and Migrants, 2002-2007**

	Urban natives		Migrants	
	2002	2007	2002	2007
Male	0.134***	0.017	0.230***	0.217***
	[0.028]	[0.027]	[0.034]	[0.023]
Education	0.032***	0.016***	0.01	0.013***
	[0.005]	[0.004]	[0.006]	[0.003]
Experience	-0.000***	-0.000***	-0.000***	-0.000***
	[0.000]	[0.000]	[0.000]	[0.000]
Experiences Squared	0.101***	0.047***	0.028***	0.037***
	[0.006]	[0.004]	[0.008]	[0.005]
Hefei	-0.333***	0.028	-0.493***	-0.487***
	[0.067]	[0.054]	[0.060]	[0.045]
Zhengzhou	-0.377***	-0.170***	-0.200***	-0.771***
	[0.060]	[0.059]	[0.062]	[0.043]
Wuhan	-0.291***	-0.145**	-0.318***	-0.496***
	[0.056]	[0.057]	[0.058]	[0.044]
Guangzhou	0.455***	0.579***	0.100*	-0.182***
	[0.056]	[0.057]	[0.059]	[0.044]
Chongqing	-0.152***	-0.151***	-0.326***	-0.589***
	[0.054]	[0.056]	[0.058]	[0.042]
Chengdu	-0.172***	-0.272***	-0.404***	-0.426***
	[0.059]	[0.061]	[0.057]	[0.045]
Constant	-0.017	1.337***	0.709***	1.406***
	[0.103]	[0.094]	[0.123]	[0.071]
Number of observations	1880	2311	1324	2102

Table 6. Residual Inequality for Urban Natives and Migrants in 2002 and 2007

	Urban Natives				Migrant		
	2002	2007	Growth (%)		2002	2007	Growth (%)
			Hourly Earnings				
Ratio of 90th to 10th percentile	5.26	5.69	8.17		4.35	4.06	-6.67
Ratio of 90th to median	2.23	2.39	7.17		2.22	2.07	-6.76
Ratio of median to 10th percentile	2.36	2.38	0.85		1.96	1.97	0.51
			Monthly Earnings				
Ratio of 90th to 10th percentile	4.57	4.97	8.75		3.69	3.42	-7.32
Ratio of 90th to median	2.11	2.28	8.06		2.08	1.99	-4.33
Ratio of median to 10th percentile	2.16	2.18	0.93		1.77	1.72	-2.82

Table 7. Minimum Wages of the Sampled Provinces: 2002 and 2007

(Chinese yuan per month)

| Province (City) | Monthly Minimum Wage | | | Monthly Average Wage[a] | | Below Minimu Wage (%)[b] | |
| | 2002 | 2007 | Growth (%) | 2002 | 2007 | 2002 | 2007 |
				Urban natives	Urban natives	Urban natives	Urban natives
Anhui (Hefei)	370	560	51.35%	1279.96	1794.44	8.00%	10.00%
Chongqing (Chongqing)	320	580	81.25%	945.2	1862.81	10.00%	2.00%
Henan (Zhengzhou)	290	650	124.14%	820.68	1528.48	8.00%	6.00%
Hubei (Wuhan)	400	580	45.00%	954.25	1537.42	12.00%	4.00%
Guangdong (Guangzhou)	510	850	66.67%	1897.08	3426.02	4.00%	2.00%
Jiangsu (Wuxi)	460	850	84.78%	1056.48	1624.59	5.00%	3.00%
Sichuan (Chengdu)	340	580	70.59%	1064.24	1620.64	8.00%	7.00%

Source: a & b are calculated by the authors using data from CHIP and RUMiC.

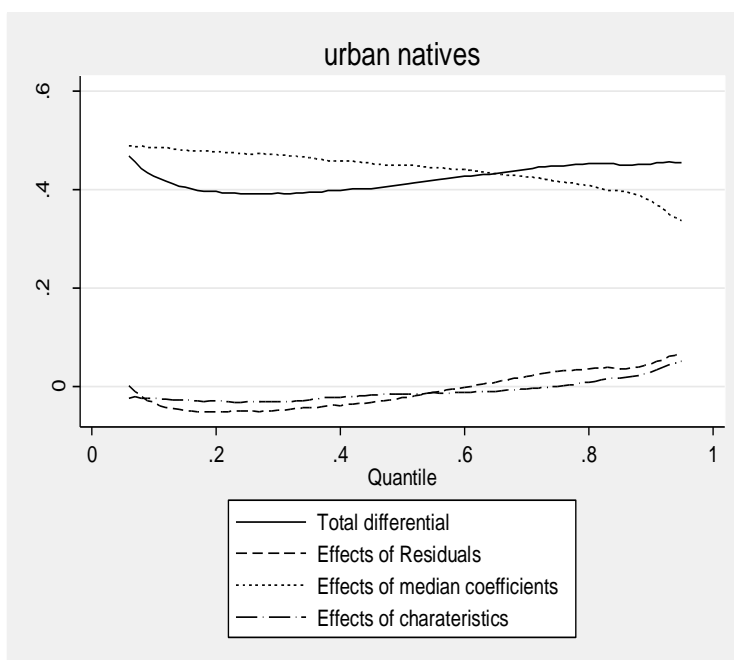**Figure 1.** Changes in logarithm of earnings for migrants and urban natives by percentile, 2002-2007
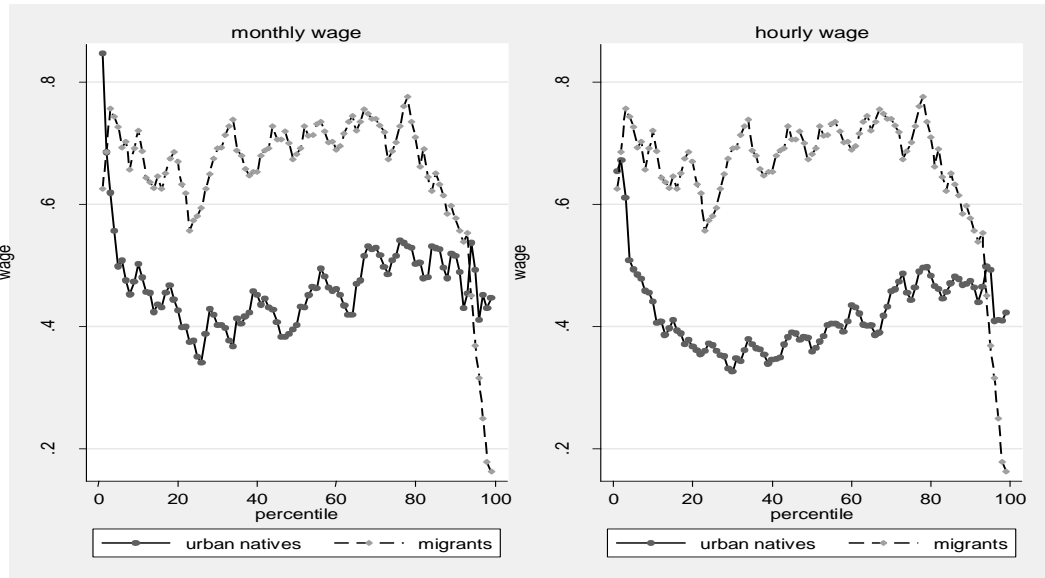
Figure 2. AKK decompositions wage from 2002 to 2007

Panel A. Migrants
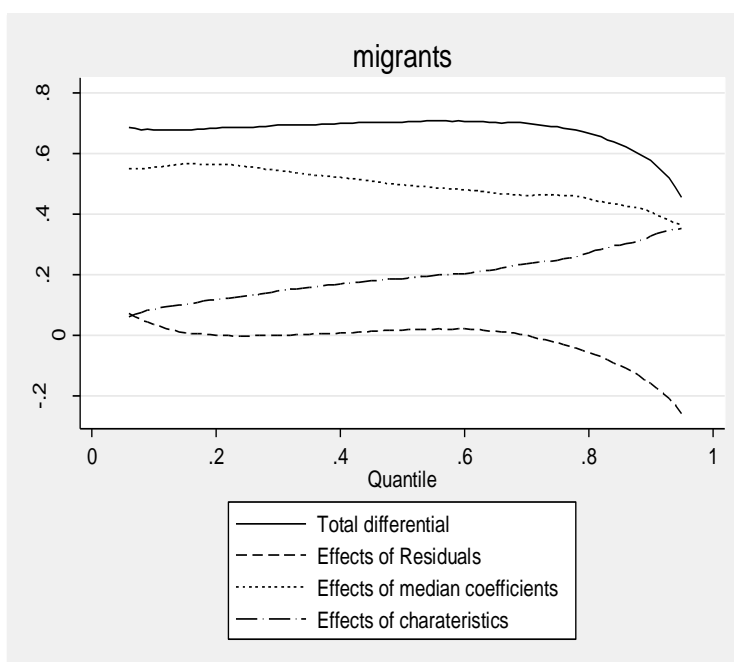
migrants

Panel B. Urban natives

urban natives

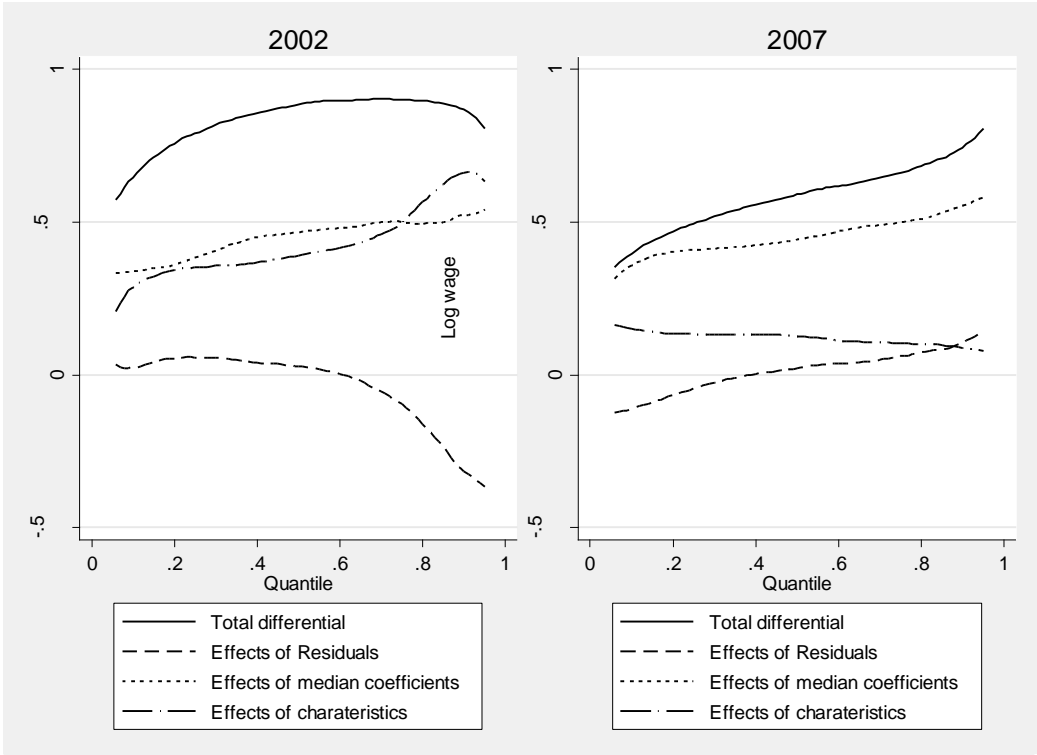**Figure 3**. AKK Decompositions Wage Gap betweem Migrants and Urban Natives: 2002 to 2007

Figure 4. AKK Decompositions Wage Gap between Migrants and Urban Natives
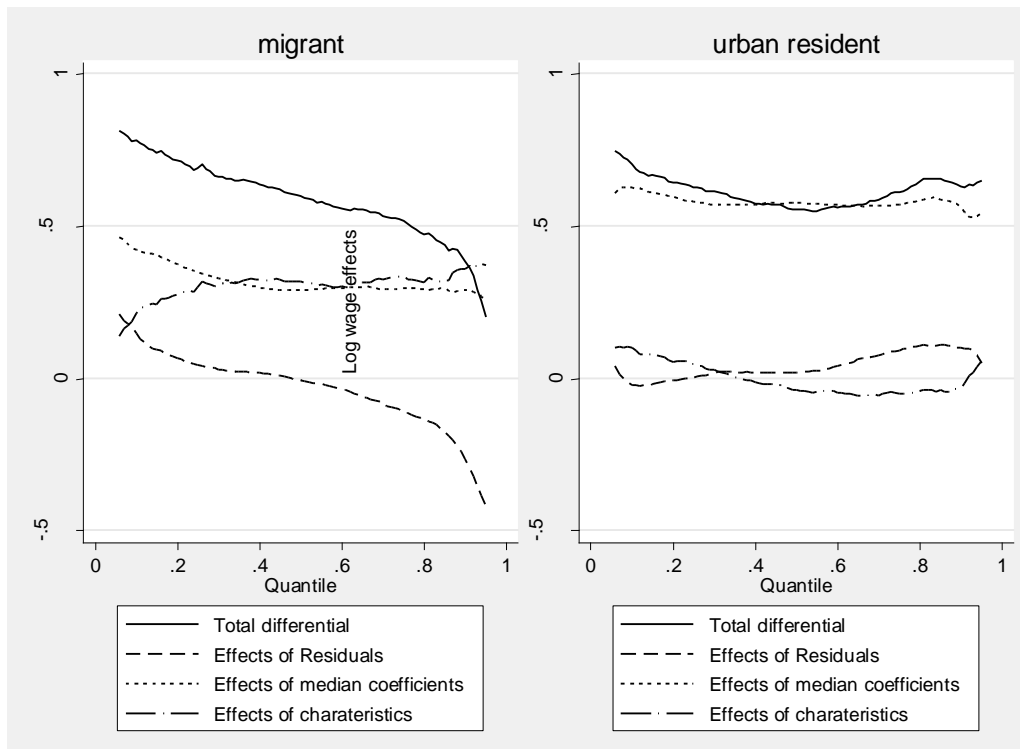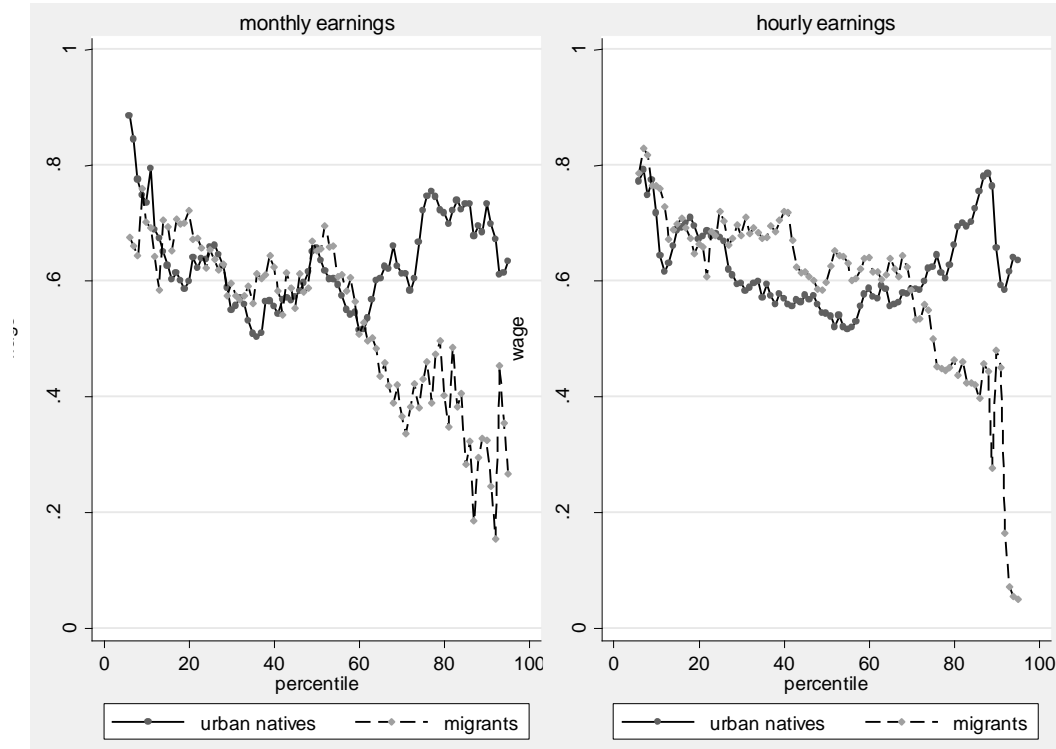for Comparable Samples: 2002 to 2007

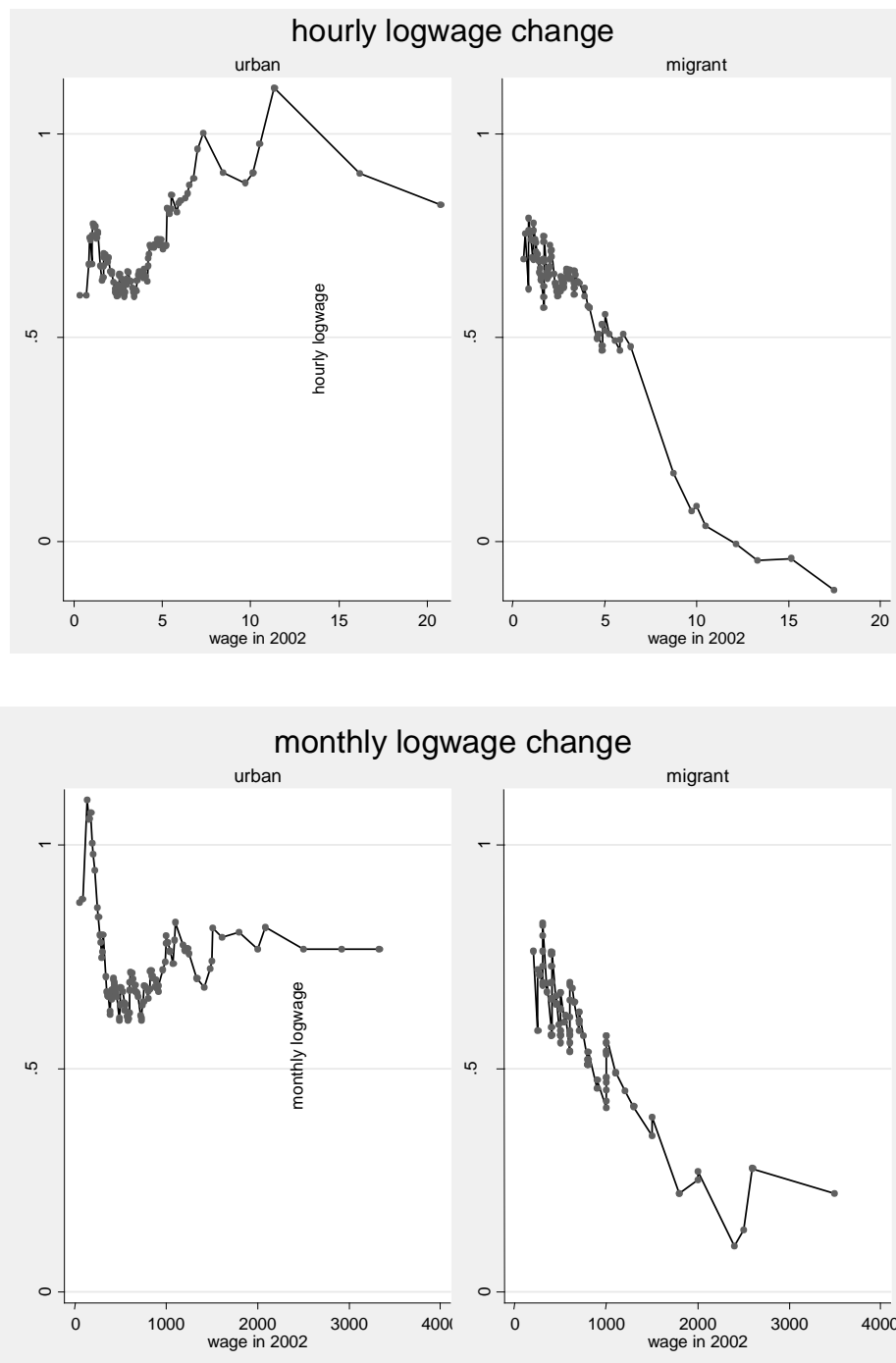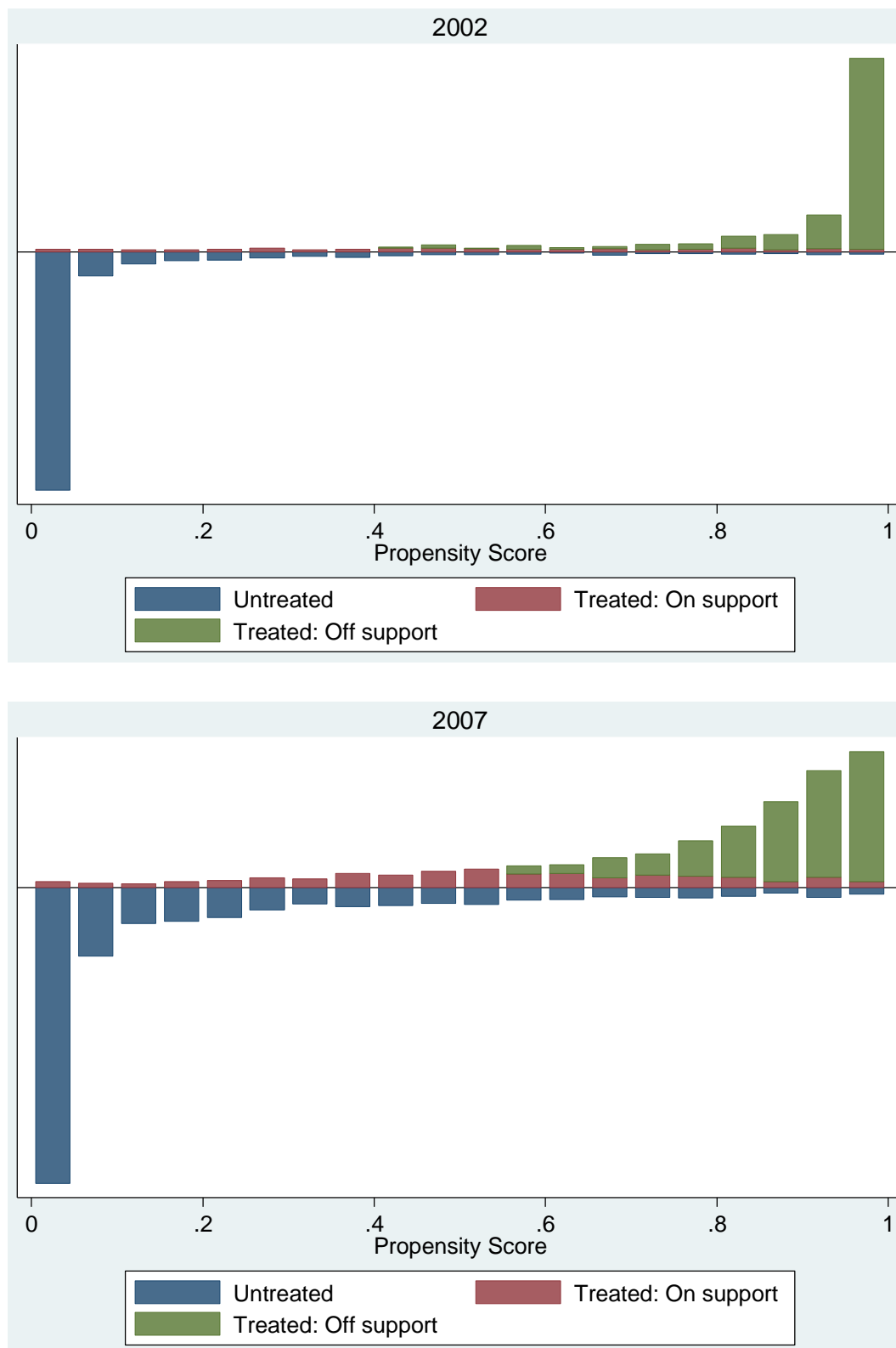**Figure 6. Changes in Logarithm of Wage for Migrants and Urban Natives by Percentile, 2002-2007 for Comparable Samples (By Wage Level)**

Figure 1. Common Support of Propensity Matching

Note: Treated group refers to migrants and untreated group refers to unban natives.