

Registration Status, Occupational Segregation, and Rural Migrants in Urban China

Zhang Zhuoni, City University of Hong Kong
Xiaogang Wu, HKUST

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1. Introduction

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- Occupation is a central concept in the study of social stratification in modern societies.
 - Sociologists often regard occupations as the “reward packages” (structural factors) that could have an independent effect on labor market inequalities.
 - Why do some occupations pay more than others?
 - Neo-Weberian theory of social closure: social and legal barriers around certain occupations raise the rewards of their members (positional inequality).



Occupation and Earnings Inequality

- Between-occupation inequality: because occupations are differentially rewarded, unequal “access” to occupations could be an important source of inequality among different social groups (e.g., gender, race, or immigration status).
- Within each occupation, workers may also be paid unequally, based on their observed and unobserved individual attributes (within-occupation inequality).
- The distinctive roles played by the membership in these social groups in restricting access to occupational opportunities and differential pay within the same occupation **remain subtle** to a large extent.



For Two Reasons ...

- On the one hand, the legal regulations in labor markets in western countries prohibit open discrimination against certain groups solely on the basis of gender, age, race, or national origins.
- On the other hand, the differential access to certain occupations may have resulted from different preferences among social groups.
- Hence, the literature has mainly focused on pay penalty within specific occupations to infer the existence of wage discrimination against a disadvantaged group—measured by the unexplained earnings gap after taking the individuals' characteristics into account.



The Chinese Household Registration System

- Differing from other characteristics that draw group boundaries, the *hukou* divides Chinese citizens and serves virtually as an administrative control of “access”. It controls both the migration of farmers to cities and the job opportunities available to them once they get there.
- Whereas the first “access” control has been relaxed as regional economic inequality resulting in large-scale internal migration from inland villages to coastal cities, the second “access” hurdle evidently remains a major issue in China’s urban labor markets.
- Migrants tend to concentrate in physically demanding, low-skilled, and potentially hazardous sectors in which urban locals are reluctant to work.



Segregation or Wage Discrimination?

- Whereas many previous studies have revealed the earnings disadvantages of rural migrants in urban labor markets and pointed to the institutional barriers associated with the *hukou* system in China, few have explicitly differentiated between the roles played by **segregation and social exclusion** on the basis of *hukou* status and by **direct wage discrimination** in the labor markets.
- Using data from mini-census 2005, we contribute explicitly examining how occupations moderate the linkage between the *hukou* status and earnings differentials between rural migrants and local urban workers in China.



2. Background



- The household registration (*hukou*) system and floating population in China since economic reform in 1978.
 - The *hukou* system has served as an important administrative means for the state to deal with demographic pressures in the course of rapid industrialization since the 1950s.
 - The government control on population migration has been weakened; geographic mobility, particularly from rural to urban areas, became much easier than before.
 - However, a sizable percentage of migrants continue to be denied the rights and benefits of citizenship simply because they do not have a local *hukou*.



The Second-Class Citizens in China: Peasant Workers (Mingong)

- The size of the “floating population”, which consists of migrants who have resided at the place of destination for at least 6 months without local hukou status, reached 144 million in 2000, and 147 million in 2006 (about 11 percent of China’s national population—predominantly rural farmers from inland areas—are on the move across counties for better economic opportunities).
- Among all economic disadvantages faced by rural migrants, the earnings disparities between this group and urban local workers have received much attention from scholars and policy makers.
- According to a study in 2006, rural migrants earn only 68 percent of what their urban counterparts earn, despite the fact they work eight hours more each week.



Where Do the Disadvantages Come From?

- No consensus: lack of local urban *hukou*? Inequality between those with a local urban *hukou* and those without may be derived from two sources: the differential access to high-paid jobs and the individual variability within the same jobs.
 - rural migrants are paid less mainly because they have poor productivity-related attributes, e.g., low educational qualification and lack of relevant working experience, limiting their chances of securing better-paid jobs;
 - the stigma of being without a local *hukou* (“a second-class citizen”) may lead to unequal pay for rural migrants in urban labor markets, even though they hold similar jobs to urban workers.
 - E.g., Meng and Zhang (*Journal of Comparative Economics*, 2001): wage discrimination.

Two Mechanisms through Which *Hukou* Plays a Role



- **Segregation effects:** *hukou* status plays an indirect role and workers are sorted into different occupations and sectors based on their *hukou* status and other characteristics. Because rural migrants tend to concentrate in lower-paid occupations and sectors, they earn less than urban workers on average.
- **Discrimination effects:** employers tend to reward workers within the same occupation based on their *hukou* status, and the lack of an urban *hukou* status is the direct cause of rural migrants' earnings disadvantages in urban labor markets.



Critiques of Meng and Zhang 2001

- The data were restricted to Shanghai and outdated.
- The sample size was small so occupations are classified into only 4 categories, not allowing them to distinguish between the contribution of occupational segregation and that of wage discrimination within an occupation to earnings inequality.
- The “within-occupation” (broad classification) inequality could be essentially “between-occupation” inequality if occupations are classified in a more detailed way.
- In addition, segregation between rural migrants and local workers takes place across employment sectors, which were not considered in their analysis.



Our Research Questions

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- To examine the commonly observed earnings inequality between rural migrants and urban local workers and adjudicate between two competing explanations for the sources of rural migrants' earnings disadvantages.
 - The large sample size in mini-census also allows us to remove the effects of different occupational distributions and individuals' characteristics and to employ the propensity score matching method to assess the causal effect of rural migrant status on the earnings gap between the two groups.



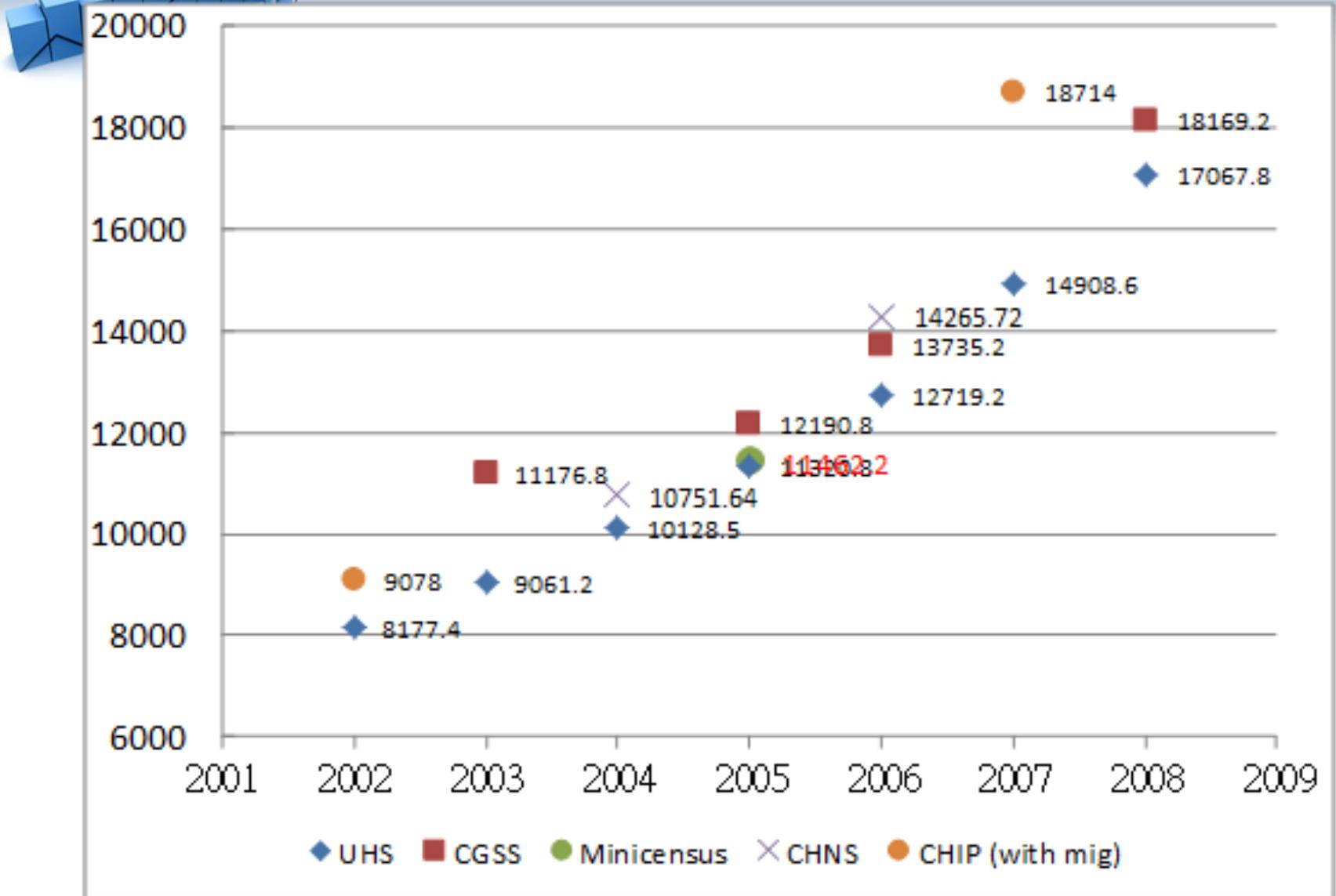
3. Data and Variables



- Sample data from 2005 national 1% population sample survey in China:
- detailed information on occupation (2-digit) and for the first time also information on earnings, work unit sector, working hours, and fringe benefits, in addition to hukou status, place of *hukou* registration, current place of residence, education and other demographic characteristics.
 - Restrict to adults aged 16 to 60 in urban areas (N= 119,675).
 - Dependent Variable: monthly work Income/hourly wages (logged).



Comparing Annual Income from Different Data Sources





Key Independent Variables



- Key independent variable, defined based on hukou registration status, the place of registration, and the place of residence
- Rural migrant worker vs. urban local worker (N1=15,996, N2=28661).

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Table 1. Urban Population by Migrant Status and *Hukou* Characteristics, China 2005 (Aged 16-60)



	Migrants		Local Residents
	<i>Hukou</i> registration place		
	<u>Rural areas</u>	<u>Urban areas</u>	
<u><i>Hukou</i> status</u>			
Rural <i>hukou</i>	17.3% (945)	0.8% (978)	27.3% (550)
Urban <i>hukou</i>	1.0% (1182)	11.1% (1609)	42.6% (1134)
Subtotal	18.3%	11.9%	
Total	30.2%		69.9%

Notes: N= 119,675. All percentages are cell percentages of the total population (aged 16-60) . Average monthly earnings are reported in parentheses (unit: RMB *yuan*)



Other Independent Variables



- Occupation (5 broad and 68 detailed categories).
- Work unit sector: government agencies/state institutions, public enterprises, private enterprises (including self-employed).
- Education, gender, marital status, age, employment status, working hours per week, county of residence.



Analytical Strategies

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- First present descriptive statistics for rural migrants and urban local workers and compare their labor market characteristics and earnings.
 - then employ linear regression models with county-level fixed effects to examine the earnings disparities between rural migrants and urban residents;
 - further decompose the earnings gap between rural migrants and urban local workers into two components: a within-occupation component and a between-occupation component.
 - Finally, employ propensity score matching methods to further identify the causal effect of *hukou* status on earnings attainment in urban China.



4. Descriptive Statistics and Empirical Results

Table 2. Descriptive Statistics of Rural Migrants and Local Workers in Urban China

	Rural Migrants	Urban Locals
Education		
Primary school and below	19.6	4.7
Junior high school	61.9	29.1
Senior high school and above	18.5	66.2
Occupation		
Manager	1.6	4.9
Professional	3.2	24.7
Clerk	3.6	15.9
Sales & service worker	34.9	26.4
Manual worker	56.7	28.1
Work Unit		
Governmental agencies/state institutions	1.5	27.4
Public enterprises	9.0	34.4
Private enterprises	89.6	38.2
Working hours per week	55.2	45.8
	(13.2)	(10.4)
N	15996	28661

Note: Percentages, means and standard deviations



Table 3. Average Monthly Earnings of Rural Migrants and Urban Locals (Unit: *yuan*)

	Rural migrants (R)	Urban locals (U)	Ratio (R/U)
Governmental agencies/state institutions	846 (500)	1329 (852)	0.64
Public enterprises	1022 (576)	1172 (910)	0.87
Private enterprises	965 (754)	1052 (1295)	0.92
Full sample	968 (737)	1169 (1066)	0.83
T-test for full sample	$\Pr(T_m < T_u) = 0.0000$		
N	15996	28661	



Regression Results

**Table 4. Determinants of Log Monthly Earnings in Urban China, 2005
(County Fixed Effects Models, Ages 16-60)**

Dependent variable: log(monthly earnings)	1	2	3	4
Rural migrants	-0.119** (0.007)	-0.077** (0.007)	-0.054** (0.007)	-0.450** (0.033)
Work Unit (governmental agencies/state institutions omitted)				
Public enterprises			-0.121** (0.008)	-0.130** (0.008)
Private enterprises			-0.217** (0.009)	-0.247** (0.009)
Interactions				0.352** (0.035)
Public enterprises× Rural migrants				0.420** (0.033)
Private enterprises× Rural migrants				
Female	Yes	Yes	Yes	Yes
Married	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes
Occupation		Yes	Yes	Yes
Employment status		Yes	Yes	Yes
Working hour		Yes	Yes	Yes
Constant	6.089** (0.036)	6.009** (0.048)	6.188** (0.049)	6.194** (0.048)
N	44,657	44,657	44,657	44,657
R ²	0.186	0.251	0.262	0.265
Number of county	2,418	2,418	2,418	2,418

Standard errors in parentheses ** p<0.01, * p<0.05



- the varying net effect of rural migrant status may result from the **imbalanced distributions** of attributes such as **occupation** between rural migrants and urban local workers (Figures 1 and 2).

- Methods disentangle the effect of **migrant status** from that of imbalanced distributions of **observable characteristics**
 - Decomposition methods
 - Propensity score matching method

Figure 1. Kernel Densities of ISEI Scores for Urban Local and Rural Migrant Workers in China, 2005

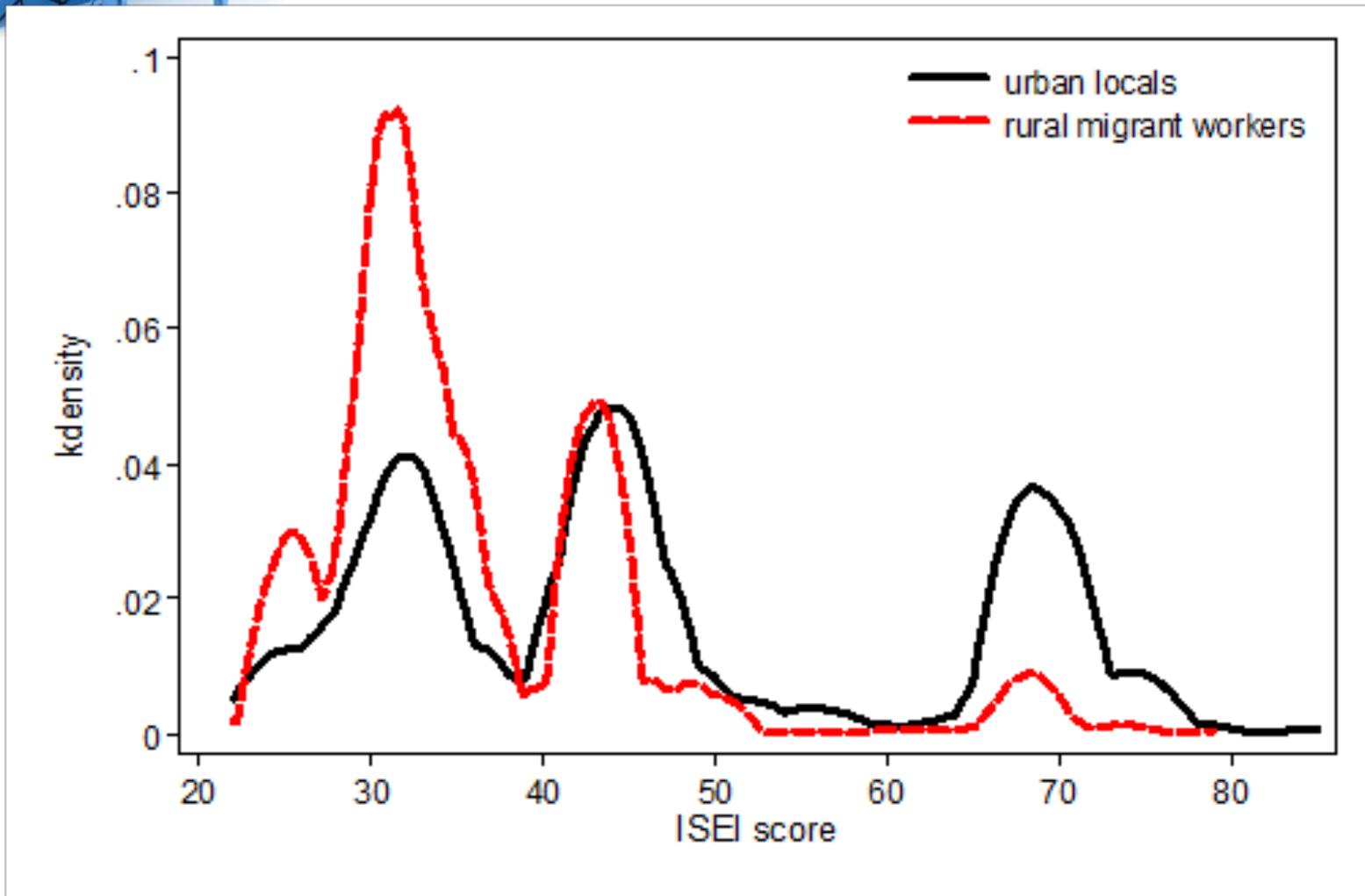
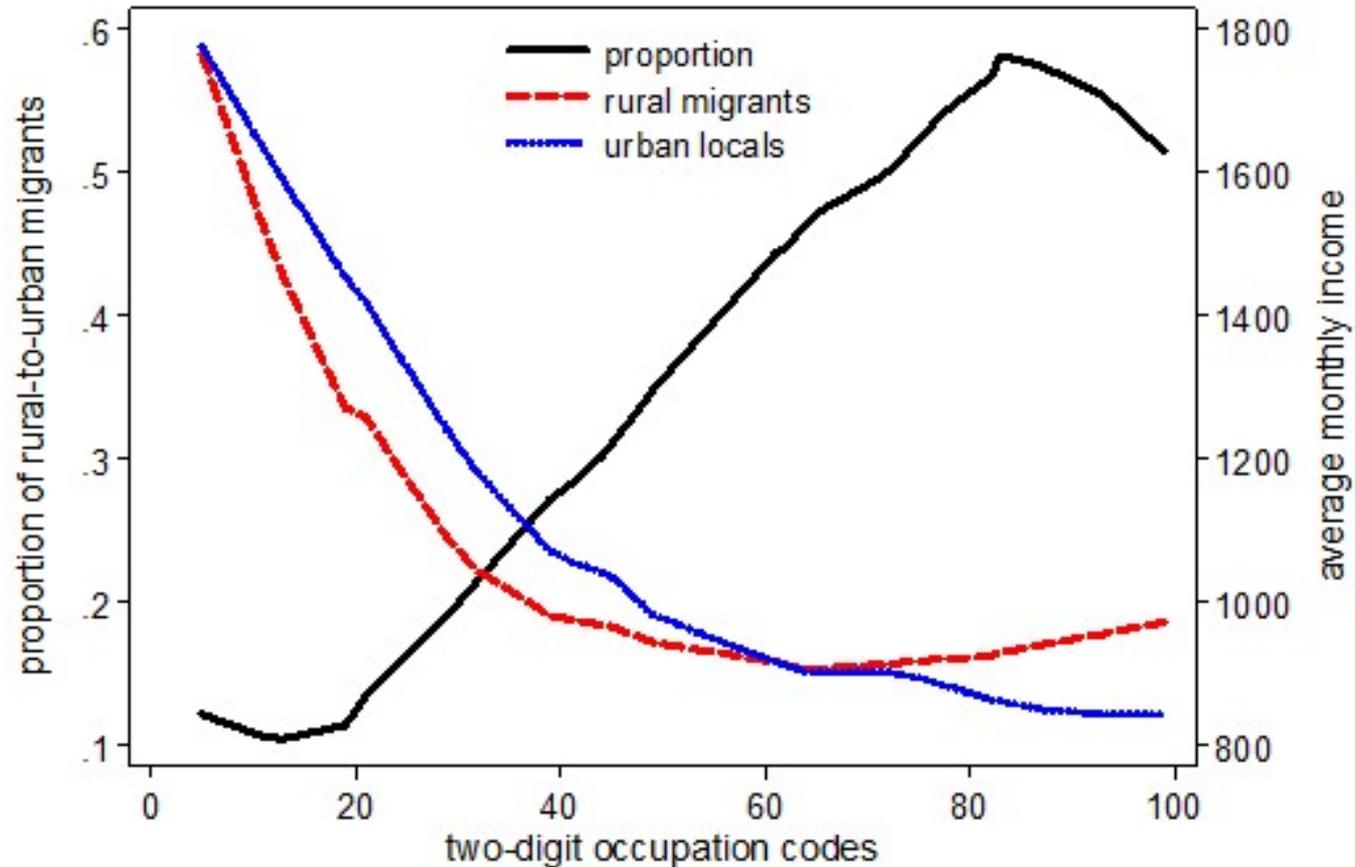




Figure 2. Proportion of Rural Migrant Workers, and Average Monthly Earnings of Rural Migrants and Urban Locals in China, 2005



Note: the larger the codes, the lower the corresponding occupation ranks in the occupational structure



Occupational Segregation Index



- The dissimilarity index (Duncan and Duncan 1955): 0.45 overall; 0.57 in governmental agencies/state institutions, 0.42 percent in public enterprises, and 0.32 in private enterprises.
- These figures suggest that the two groups concerned were most segregated in government agency/state institutions and the least segregated in the private sector.
- Occupational segregation seems to be an important mechanism in creating the overall earnings inequality between rural migrants and urban locals.



Decomposition method

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- A method proposed by Brown *et al.* (1980)
 - Allow earnings equation coefficients to vary across occupations to disentangle within vs. between-occupation earnings gaps.

$$\begin{aligned}\bar{W}^U - \bar{W}^R &= \sum_j P_j^R \hat{\beta}_j^U (\bar{X}_j^U - \bar{X}_j^R) + \sum_j P_j^R \bar{X}_j^R (\hat{\beta}_j^U - \hat{\beta}_j^R) \\ &+ \sum_j \bar{W}_j^U (P_j^U - \hat{P}_j^R) + \sum_j \bar{W}_j^U (\hat{P}_j^R - P_j^R),\end{aligned}$$

Left: In(earnings) gap: *urban - rural migrants*

Right:

1st: within-occupational earnings gap (explained)

2nd: within-occupational gap (unexplained)

3rd: between-occupational gap (explained)

4th: between-occupational gap (unexplained)



Table 5. Decomposition Results of Earnings Differentials between Local Workers and Rural Migrants in Urban China, 2005

	Log monthly earnings	% of subtotal
Total earnings differential	0.1174	
Within-occupational	-0.0826	100
Explained	0.0528	-64
unexplained	-0.1355	164
Between-occupational	0.2000	100
Explained	0.1503	75
unexplained	0.0497	25
Total explained	0.2031	
Total unexplained	-0.0858	

Note: positive: urban locals earn more; negative: rural migrants earn more.



Interpreting Results

- 
- the commonly observed lower earnings of rural migrants is due to the **occupational segregation** in urban labor markets.
 - Occupational segregation is mainly due to the effect of **observed characteristics** including gender, marital status, education, and age.
 - Education: most important (arguably at the root of virtually all forms of inequality)
 - Rural migrants poorly educated.



Interpreting Results



- To narrow the earnings gaps: lower the barrier of access to better occupations for rural migrants.
- Also, to alleviate occupational segregation: improve their educational attainment (qualifications and skills)
 - related to the considerable rural-urban divide in education
 - a series of complex problems that associated with the sharp social and institutional divides between rural and urban China.



Results from Alternative Methods (Matching)



- allows us to summarize all the differences between two groups (the treatment and the control group) with a single dimension: the propensity scores.
- Propensity score: conditional probability of being in the treatment group, given the observed covariates.
- Treatment group: rural migrants; control group: urban locals.



Strategy of Estimation



- estimate propensity scores based on observed covariates
- stratify the propensity scores
- match rural migrants and urban locals across the propensity score strata
- use the difference in mean earnings in the matched samples within each stratum to obtain an estimate of the average treatment effect on the treated (ATT).
- Similarly, by three types of work units (sectors).

Table 6. Propensity Score Matching Results of Hourly Income by Type of Work Unit in Urban China, 2005 (Rural Migrants and Urban Locals)



	Treated (rural migrants) (T)	Controls (urban locals) (C)	ATT ^a : (T)-(C)
Full sample	4.66	4.38	0.28**
Governmental agencies/state institutions	4.67	5.73	-1.06**
Public enterprises	5.42	4.92	0.50*
Private enterprises	4.59	4.10	0.49***

Notes: Unit of hourly wage is RMB. *** p<0.01; ** p<0.05, *p<0.10 (two-tailed tests).

ATT is the average treatment effect on the treated.



5. Summary and Conclusion



- Multivariate linear regression analyses confirm that rural migrants earn significantly less than their urban counterparts
- The earnings disadvantage is the greatest in government/state institutions, followed by public enterprises, and finally the private sector.
- We attribute the inequality pattern to the variant occupational segregation across work unit sectors.
- The occupational segregation is more prominent in the government agencies/state institutions than in public enterprises and private enterprises.



Decomposition Results



- the earnings inequality between rural migrants and urban locals is largely attributable to between-occupation earnings differentials rather than to unequal pay within each occupation.
- Moreover, between-occupation earnings inequality can be explained by the difference between the two groups in observed covariates, particularly education.
- Hence, the earnings disadvantages of rural migrants result mainly from occupational segregation in urban labor markets.



Matching Analysis Results

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- after being matched with their urban counterparts based on chosen observed attributes, **rural migrants surprisingly enjoy advantages in hourly wages over urban local workers, and only in governmental agencies/ state institutions do their disadvantages persist.**
 - These results, in sharp contrast to the findings from the group comparisons and multivariate regression analyses, provide stronger evidence to support the claim that the rural migrants' overall earnings disadvantage is derived from the occupational segregation rather than within-occupation wage discrimination.



Discussions



- Why do rural migrants enjoy higher earnings than urban locals within the same occupation in public and private enterprises?
 - Institutional discrimination vs. market discrimination;
 - Compensation packages (cash rewards but less fringe benefits);
 - Selectivity of migrant workers.



Policy Implications



- Our findings bear important implications for policies tackling the problems related to rural migrants' socioeconomic inclusions in Chinese cities.
- Because unequal pay against rural migrants seems to play a minimum role in generating earnings inequality between rural migrants and urban local workers, **policies and public efforts should be made to reduce occupational segregation and remove other structural barriers, to help rural migrants gain equal access to a variety of occupations, especially good ones, in urban China's labor market.**



The new directives by the State Council in 2012

- On February 23rd, 2012, the State Council of China issued a policy notice calling for proactive and stable reform of China's household registration system, stating that all new employment, education and skills training policies must not be linked to the *hukou*, and migrants in county-level cities could apply for local *hukou*.
- How such policy changes would affect the patterns of occupational segregation and economic disparities between migrants and local workers remains to be investigated in the future.



国务院

《关于积极稳妥推进户籍管理制度改革的通知》

- Feb 23, 2012通知要求，
- 今后出台有关就业、义务教育、技能培训等政策措施，不要与户口性质挂钩。继续探索建立城乡统一的户口登记制度。逐步实行暂住人口居住证制度。对造成暂住人口学习、工作、生活不便的有关政策措施要进行一次集中清理，该修改的认真修改，该废止的坚决废止。
- 对农村人口已落户城镇的，要保证其享有与当地城镇居民同等的权益；对暂不具备落户条件的农民工，要有针对性地完善相关制度，下大力气解决他们当前在劳动报酬、子女上学、技能培训、公共卫生、住房租购、社会保障、职业安全卫生等方面的突出问题。



Thank you !
Comments are welcome
sowu@ust.hk