The Dynamic Change of Wage Gap between Urban Residents and Rural Migrants in Chinese Cities

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Rural-Urban Migration in China

• Rural-urban migration is one of the significant phenomena in China.
  – 130 million rural-urban migrants work in cities (1/3 urban labor force);
  – another 150 million rural-urban migrants will move into cities within the next two decades.

• “Guest worker system” and institutional discrimination against rural migrants
  – Guest Worker System and Household Registration System;
  – Restrictions on accessibility to good job, social welfare and children education;
  – Main composition of urban poverty.
Motivations and Objectives

• The well-beings of rural-urban migration attract more and more attention of both academics and policy makers.
  – income dynamic;
  – though which channel migrants can settle down in cities.

• Although there have been a large number of studies made to examine the rural-urban migration issue in China, the above two issues have not been well explored.
  – Lack of methodology
  – Lack of suitable data

• This project aims to examine dynamic rural-urban migrants’ status from empirical perspective. Several questions are posed from two channels (i.e. trans-temporary comparison and cohort comparison):
  – How does the wage gap between urban residents and rural migrants evolve over time? What are the determinants?
  – Will new rural migrants assimilate to their urban counterparts as time resides in host city? And what will matters for the wage assimilation of rural migrants in Chinese cities?
Literature Review

Two groups of studies are related to our project:

• Relevant studies in the world
  – dynamic wage gap across gender and races: Dynamic Wage Decomposition (Smith and Welch, 1989; Wellington, 1993; Heckman et al., 2002)

  ❖ They provide some methods but few of them had addressed internal migration issue, since the “integrated” labour market in developed countries.

• The studies on rural-urban migration in China
  – The determinants of migration and migration spells (Zhao, 1997; Hare, 1999; Zhao, 1999)
  – Impacts of migration on income of migrant families in rural areas (Zhao, 1999; Taylor et al., 2000; Zhu, 2002)
  – The welfare of rural-urban migration: wage discrimination and occupational segregation against rural migrants (Meng, 2000; Meng and Zhang, 2001; Du et al., 2006)

  ❖ They address the internal migration issue but did not examine the changes of wage gap between rural migrants and urban residents from a dynamic perspective.
Main Contributions

This project innovates in the following three perspectives:

• Apply both dynamic decomposition technique and economic assimilation model to address the rural-urban migration issue (or the internal migration) in China;

• Use two-period data to examine the dynamic changes of wage gap between rural migrants and urban residents;

• Develop a dynamic recursive model to access impacts of various policies on the rural-urban migration process. (optional)
Policy Relevance: Rural Migrants’ Income, Urban Poverty, and Social Stability

Understanding rural-urban migrants’ welfare and its changing trend over time is important for policy making to fight urban poverty and maintain social stability in China.

• Since rural migrants account for most part of urban poverty, understanding the dynamic change in earnings of rural migrants relative to their urban counterparts will definitely be used in designing an appropriate social protection system.

• How to keep peace between the rural migrants and their urban counterparts and how to help rural migrants settle down are important for sustainable economic growth. Analysis on the assimilation pattern of rural migrants may help policy makers to understand the extent to which migrants assimilate and the channels through which they assimilate into urban society.
Methodology and Model Specification (I)

The dynamic wage decomposition method:

• In the spirit of Oaxaca’s one period decomposition (1973) Smith and Welch (1989) developed this approach.

• The method describes trans-temporary changes of earning gap between rural migrants and urban residents.
• Using this technique, we decompose the raw log wage gap into four parts:

The main effect: the predicted change in wage due to changing in mean characteristics.

\[ (\ln w_{02}^u - \ln w_{02}^r) - (\ln w_{99}^u - \ln w_{99}^r) \]

Identity interaction: the additional change in the wage gap predicted by the change in attributes of rural migrants, fixing the difference of returns between urban residents and rural migrants in 2002.

\[ \hat{\beta}_{99}^u [(\bar{X}_{02}^u - \bar{X}_{02}^r) - (\bar{X}_{99}^u - \bar{X}_{99}^r)] \]  

(i)

Year interaction: the effect of change in the wage gap due to an increase in the returns to a characteristic across year for urban residents, valued at differences of mean characteristics between two groups of workers.

\[ + (\hat{\beta}_{02}^u - \hat{\beta}_{02}^r)(\bar{X}_{02}^r - \bar{X}_{99}^r) \]  

(ii)

Identity-year interaction: the change in the wage gap that occurs because the change in the wage structures, valued at the mean characteristic of rural migrants in year 1999.

\[ + (\bar{X}_{02}^u - \bar{X}_{02}^r)(\hat{\beta}_{02}^u - \hat{\beta}_{99}^u) \]  

(iii)

\[ + \bar{X}_{99}^r [(\hat{\beta}_{02}^u - \hat{\beta}_{02}^r) - (\hat{\beta}_{99}^u - \hat{\beta}_{99}^r)] \]  

(iv)

where, the superscripts \( u \) and \( r \) refer to urban residents and rural migrants, respectively; subscripts 02 means year 2002 and 99 is year 1999; \( \bar{lnw} \) indicates the mean log earnings; \( \hat{\beta} \) presents the estimated coefficients from wage regression; and \( \bar{X} \) is a vector of means for personal endowments.
The economic assimilation method:

- Definition of economic assimilation: the rate at which the gap narrows.

- By following a certain cohort of immigrants (rural migrants) over their life time, the method can be used to analyzes the convergence of rural migrants’ wage to their urban counterparts.

- Basing on Borjas (1985), separated equations for urban residents and rural migrants are adopted in this study.
Migrants’ equation:

\[
\ln W_{age_{lt}} = X_{lt}\beta_{rt} + \gamma_{r1}Exp_{lt} + \gamma_{r2}Exp_{lt}^2 + \kappa_1YSM_{lt} + \kappa_2YSM_{lt}^2 + \sum_{k=L}^{\pi_k}C\text{O\textit{H}ORT}_{lk} + \theta_{rt}YE\text{A}R_{lt} + \varepsilon_{lt}
\]  

(2)

Urban workers’ equation:

\[
\ln W_{age_{lt}} = X_{lt}\beta_{rt} + \gamma_{n1}Exp_{lt} + \gamma_{n2}Exp_{lt}^2 + \theta_{nt}YE\text{A}R_{lt} + \varepsilon_{lt}
\]  

(3)

\textbf{InWage}: log hourly wage of urban residents or rural migrants in the host city;

\textbf{X}: a vector of socioeconomic characteristic (education, and some dummies);

\textbf{Exp}: potential working experience (age-years of schooling-6);

\textbf{YSM} (years since migration): the number of years that rural migrants has resided in the host city;

\textbf{Cohort}: the calendar year when the migrants arrived in the host city;

\textbf{Year}: Dummy for survey year.

- Wage assimilation effect: \(\kappa_1 + \gamma_{r1} - \gamma_{n1}\)
- Identification problem: YSM+Cohort=Year
- Some restrictions have to be imposed: \(YEAR_{lt}^{Migrant} = Year_{lt}^{Urban} = 0\)
Data Description (I)

China Income Distribution Survey (CIDS) in 1999 and 2000

- Covering 11 out of 13 cities in 6 provinces in 1999 and 11 out of 28 cities in 12 provinces in 2002;
- Two groups of people are separately sampled from their corresponding population in each cities;
- Sample restriction: migrants and urban workers aged 16 to 65: the rural migrants sample to those who arrived in the host city over 16 years old.
- Sample size: rural migrants are 980 for 1999, 1400 for 2002; urban residents is 5600 for 1999 and 3400 for 2002.

China Urban Labor Survey (CULS) in 2001 and 2005

- Covering five large capital cities: Shanghai, Wuhan, Shenyang, Xi’an and Fuzhou) in both 2001 and 2005.
- Sample size: rural migrants are 1500 for 2001, 2500 for 2005; urban residents is 9000 for 2001 and 12000 for 2005.
Data Description (II)

Following characteristics made the data suitable for our project:

• Both data sets in our projects are two-time points cross-sectional data, which can be used to extract the dynamic information of migrants’ status changing over time in urban China.

• Both data sets contain detailed employment and earning information for both urban workers and rural migrants, as well as information on year of arrival for rural migrants, which are suitable for our research purpose.

• Both data sets contain a large sample and cover various regions of China. Thus their results can be used for making more general conclusions.

• The two data sets are independent and the comparison of estimated results from them can be used to make sensitivity analysis. Meanwhile, combining the two data sets can help to extend the time span of this study.
First Glance at Data

Data Source: CIDS 1999 and 2002
Thank You!

Questions and Comments are Welcomed!