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Increasing internal migration in China from 1985 to 2005: Institutional versus economic drivers

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A B S T R A C T

The institutional driver, i.e., the relaxation and reform in the *hukou* system, is considered the most important factor in the increasing mobility in post-reform China in the literature. This paper argues that the above institutional factor was influential in the initial increase of migration in the 1980s. Subsequent increase in the migration scale from 1990 to 2000 was driven largely by rapid and unbalanced economic development in China.

The framework of time–space geography is adopted in this study. It is argued that various factors have different characteristics of dynamic response and spatial diffusion. For example, economic reform and open door policy have been implemented with increasing intensity since 1978. But they have a clear pattern of spatial diffusion. The time–space geography of development indicates that some areas would first become major destinations of migration, to be followed by other areas later.

On the other hand, the registration of temporary population was introduced in the whole country at almost the same time in 1985. It has one-off impact on migration. But population in less developed areas may respond to relaxed migration control and migration opportunities in advanced areas gradually. Their response time is determined by their migration tradition, ability as well as distance from the destinations of opportunities. This paper makes a detailed time–space analysis of the migration patterns in China using migration data from 1990 and 2000 censuses and 1995 and 2005 population surveys.

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Introduction

During the period from the 1950s to the early 1980s, a rigid *hukou* (household registration) system was implemented in the Chinese society (Cheng & Selden, 1994). *Hukou* "identity" places people spatially. During that period, internal migration including rural-to-urban migration was tightly controlled. Since the early 1980s, the rigid *hukou* system has been relaxed and Chinese people, including rural residents, have been permitted to move to other places temporarily without having to change their place of *hukou* registration. *Hukou* "status" becomes very important as many migrants do not have local hukou at places of living, often called "floating population" or "temporary population" (Shen, 2005, 2011). As a result, mobility in China has increased significantly since the early 1980 (Chan, Liu, & Yang, 1999; Chang, 1996; Li & Siu, 1997; Liang & Ma, 2004).

There are two related questions on migration in China in the reform period. Firstly, many studies are concerned with the labour market performance and social status of migrants, mostly rural migrants in destinations (Fan, 2002; Shen & Huang, 2003; Solinger, 1999; Wang, Zuo & Ruan, 2002). The general nature of capitalist accumulation in China may be part of the explanatory context, but more important is the special position of temporary migrants as outsiders, of rural origin, with low education level and without local *hukou*. They are particularly vulnerable to exploitation by employers but also find themselves outside the reach of social safety nets provided to other workers because of their status as temporary migrants (Shen, 2011). Thus it is the combination of *hukou* identity and *hukou* status which has contributed to the poor status of temporary migrants in China. Fan (2002) argued that the state, in this instance, deepens (rather than ameliorates) the bifurcation effects as suggested by the labour market segmentation theory.

Secondly, some studies have attempted to explain the migrations flows and the underlying causes of such migration. Panel data or aggregated data for a particular period are often used in cross-sectional analysis (Cai & Wang, 2003; Fan, 1996; Shen, 1999). Very few studies have attempted to examine and explain the changing migration pattern for several periods in the context of increasing scale of migration in China (He & Pooler, 2002; Fan, 2005b). This paper attempts to contribute to this issue.

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The institutional driver, i.e., the relaxation and reform in the *hukou* system, has been considered the most important factor in the increasing mobility in China in the literature (Fan, 2005a, 2008; Liang, 2001; Wang et al., 2002). This paper argues that the above institutional factor was influential in the initial increase of migration in the 1980s. It also has significant impact on the labour market performance of rural migrants in urban areas. But subsequent increase in the migration scale from 1990 to 2000 was driven largely by rapid and unbalanced economic development in China. Due to increasing gap in regional development among eastern, central and western regions, there is significant inter-provincial migration in China (Cai & Wang, 2003; Fan, 1996, 2005b; Fan & Sun, 2008; Liang, 1999; Zhu, 2003). Based on the 1987 survey, the 1990 census, and additional data from the 1995 survey, He and Pooler (2002) investigated the regional concentration of China's inter-provincial migration flows using the coefficient of variation indices of out- and in-migration flows for each province. They found asymmetry between out- and in-migration flow fields which means that China's inter-provincial migration has resulted from interplay of several factors, such as the uneven distribution of the economy and relaxed control over rural-to-urban migration.

Hägerstrand's time-geography is a useful analytical framework which has been used in many studies. It emphasizes the continuity and connectedness of a series of events taking place in situations bounded in time and space (Hägerstrand, 1975, 1976). For example, it provides conceptualization of space–time constraints and how these affect human behaviour (Schwanen & Kwan, 2008). Most studies of time-geography focus on the life-paths of individuals. The basic framework of time–space geography is adopted in this study to examine the changing migration patterns over time and space and how these changing patterns may be linked with patterns of regional development. It is argued that various factors have different characteristics of dynamic response and spatial diffusion. For example, economic reform and open door policy have been implemented with increasing intensity since 1978. They were experimented first in special economic zones (1979) and open coastal cities (1984), and then were extended to open economic areas (1985), Pudong New District (1990) and all parts of China in 1994. Partly related to such staged reform and opening, rapid economic growth took place first in the Pearl River Delta (Guangdong) in the 1980s, then spread to the Yangtze River Delta (Shanghai, Jiangsu and Zhejiang) in the 1990s and Jing-Jin-Tang region (Beijing, Tianjin and Tangshan) in north China in the 21st century (Yeung & Shen, 2008). The time–space geography of development indicates that some areas would first become major destinations of migration, to be followed by other areas later.

On the other hand, the registration of temporary population was introduced in the whole country at almost the same time in 1985. It has one-off impact on migration. But population in less developed areas may respond to relaxed migration control and migration opportunities in advanced areas gradually. Their response time is determined by their migration tradition, ability as well as distance from the destinations of opportunities. This paper makes a detailed time–space analysis of the migration patterns in China using migration data from 1990 and 2000 censuses and 1995 and 2005 population surveys.

Migration, regional development and economic reforms

In the pre-reform period 1949–1978, the main migration directions were from the eastern region to the central region and western region in China (Clarke, 1994; Tian & Lin, 1986). For a long time since the foundation of the People's Republic, the government has emphasized the economic development in the inland regions in China which are less developed. Many transportation and industrial development projects were carried out in the central and western regions. Several million people had been organized to move from the eastern developed cities to new development areas and key construction areas in the northeastern, western and southwestern areas since the early 1950s.

Organized migration for agricultural development also took place in the 1950s. Some two million urban residents and veterans demobilized from the army were moved from the eastern region to sparsely populated areas (Tian & Lin, 1986). Some army farms, "production and construction army units", were also established. The main destinations were Inner Mongolia, Heilongjiang, Xinjiang, Hainan Island and Yunnan. During the "cultural revolution" in 1966–1976, some 17 million urban youths were moved to rural areas in the campaign of "Up to the mountains and down to the countryside". Many families in Shanghai, Beijing and Tianjin sent at least one child to the countryside to be educated by peasants. Some destinations were as far away as Heilongjiang and Guizhou. Most of these migrants returned to cities after the end of "cultural revolution" (Shen & Tong, 1992: pp. 185–191).

According to estimation by Hu & Zhang (1984), there were about 25 million net inter-provincial migrations in the period 1950–1979. Eight provincial units including Shanghai, Jiangsu, Zhejiang, Shandong, Henan, Hunan, Guangdong and Sichuan had net out-migrations. The net migration in Liaoning, Anhui and Fujian was negligible. Other provincial units had net in-migrations. Inner Mongolia (3.1 million), Heilongjiang (6.5 million) and Xinjiang (2.8 million) accounted for half of the total net in-migrations.

The balanced development strategy adopted since 1949 failed by 1978 as industrial production in the inland provinces was not efficient but used up many capital resources of the country. A coastal development strategy was adopted in the 1980s which allowed some areas to develop first. The focus of regional development was shifted to the coastal areas in the eastern region to make full use of locational, economic and technological advantages there. It is also recognized that the eastern region has a well-educated and skillful labour force and has easy access to the outside world, which has been a stimulating factor in the recent development in China. Economic reforms and open door policies have been implemented much earlier and faster in the eastern region. Many areas in the eastern region, notably Guangdong, Jiangsu and Zhejiang, have gained rapid economic growth since the late 1970s. Such rapid economic growth has certainly brought about many opportunities for migrants from other regions (Yeung & Shen, 2008).

Furthermore, as a number of migrations from the eastern region to the central and western regions before 1978 were organized migrations for various construction and development programmes in these regions. Some migrants were reluctant to be relocated to these regions. Since 1978 economic reforms, more flexible measures have been introduced with regard to migration and some migrants are allowed to return to their origins or developed areas in the eastern region for various reasons.

Economic reform and open door policy have been implemented with increasing intensity since 1978. But they have a clear pattern of spatial diffusion. They were experimented first in special economic zones (1979) and open coastal cities (1984), and then were extended to open economic areas (1985), Pudong New District (1990) and all parts of China in 1994. Partly related to such staged reform and opening, rapid economic growth took place first in the Pearl River Delta (Guangdong) in the 1980s, then spread to the Yangtze River Delta (Shanghai, Jiangsu and Zhejiang) in the 1990s and Jing-Jin-Tang region (Beijing, Tianjin and Tangshan) in north China in the 21st century (Yeung & Shen, 2008). Specific regional development polices have also targeted the western region of China since the late 1990s, the northeast China and the central China in the 21st century.

Table 1
Annual growth rates of temporary population 1982–2005 (%).

Periods	1982–1990	1990–2000	2000–2005	1982–2005
Eastern	25.9	14.8	7.7	16.7
Central	24.5	4.1	6.0	11.1
Western	25.1	10.0	3.5	13.3
China	25.2	10.7	6.5	14.4

Sources: Population Census Office of State Council and Department of Population Statistics of NBS, 1985, 1993; Population Census Office of State Council and Department of Population, Social, Science and Technology Statistics of NBS, 2002; Leadership Team Office of State Council for National One Percent Population Sampling Survey and Department of Population and Employment Statistics of NBS, 2006.

The time–space geography of development indicates that some areas would first become major destinations of migration, to be followed by other areas later. Thus the changes of the migration mechanism and the economic reforms in China since the late 1970s have caused a reversal in the direction of migration. More migrants moved from the western and central regions to the eastern region (Fan, 2005b; Shen, 2008; Shen & Wang, 2004).

Migration, *hukou* system reform and floating population

There was no control on migration in the early years of the People's Republic of China after its foundation. The freedom for citizens to migrate was actually stipulated in the first constitution of the country adopted in 1954. But this changed as a response to rapid rural-to-urban migration exceeding the pace of industrialization in the late 1950s. The nationwide hukou system was formally introduced in 1958 to control these flows. Each person was registered at a place with one of two *hukou* statuses: *non-agricultural population* and *agricultural population*. The conversion from the *hukou* status of *agricultural population* to *non-agricultural population*, and rural-to-urban migration, were both tightly controlled by the state. The *hukou* system was administrated by the Ministry of Public Security for purposes of population registration and controlling population migration. The *hukou* system was used as a key tool for central planning up to the late 1970s. Various government departments linked entitlements for grain rationing, employment, housing, education and social welfare with the hukou status of the *non-agricultural population*.

Since the early 1980s, under the influence of an emerging market economy and because of the demands of the grassroots population, especially in rural areas, the state has relaxed the enforcement of migration restricts. One major policy is to issue temporary resident permits to migrants who moved from rural areas to urban areas after 1985. This opens the gate for many rural migrants, even though such migrants only get a "temporary" permit and are not granted a local *hukou* status. Such temporary population is also called "floating population" as they are away from their places of *hukou* registration and are considered differently from the local hukou population (Shen, 2005; Shen, Wong & Feng, 2002).

The 2000 census defined the temporary population who left their *hukou* registration places for more than half a year as usual residents in their destinations. In 1982 and 1990 census, only temporary population who left their *hukou* place for more than one year were defined as usual residents in their destinations. In 2000, urban areas in China had a temporary population of 113.4 million, accounting for 78.6% of the total temporary population (Population Census Office of State Council and Department of Population, Social, Science and Technology Statistics of NBS, 2002). In Shanghai, the temporary population increased from 0.6 million in 1984 to 3.9 million in 2000.

The temporary population in China has increased from 6.1 million to 39.6 million in the period 1982–1990. It then expanded greatly to 109.0 million and 149.4 million in 2000 and 2005 respectively (Leadership Team Office of State Council for National One Percent Population Sampling Survey and Department of



Fig. 1. Provincial regions in China.

Population and Employment Statistics of NBS, 2006). Guangdong, Jiangsu, Zhejiang, Shandong, Fujian, Shanghai and Liaoning were top seven provinces each with temporary population over 6.5 million in 2000. All of them were located in the eastern region. Annual growth rates for the temporary population were 16.7%, 11.1% and 13.3% in the eastern, central and western regions respectively in the period 1982–2005 (Table 1). In the 1990s, the most rapid growth of the temporary population took place in the eastern region. The growth rates of temporary population in the eastern and western regions slowed down in 2000–2005. The growth rate of the central region caught up the growth rate of the eastern region closely in this period. This means that the gap in the size of the temporary population between the three regions was widened greatly in the 1990s but less rapidly after 2000.

It is useful to note that the concept of temporary population is different from the concept of migration. The size of temporary population is larger than that of inter-provincial temporary migrants in a 5-year period. The temporary population is defined on the basis of *hukou* status. They are migrants but many of them may have moved to the destination for over 5 years. The temporary population is an accumulated migrant population over time. If they move between provinces within the 5-year period, they are counted as inter-provincial migrants. This part is called non-*hukou* migrants or temporary migrants as they do not change their place of *hukou*. The inter-provincial migrants in a 5-year period also include *hukou* migrants who are able to move their places of *hukou* to their destinations. Such migrants are also called permanent migrants. Generally, most inter-provincial migrants are temporary migrants as one cannot change place of *hukou* easily. According to a large micro data set from 2000 census which is extracted randomly from all households covered in the 2000 census with a sampling ratio of 0.095%, there were 123,267 migrants who moved in the 5-year period before the 2000 census, after excluding 1218 migrants who have missing data and 34 migrants who have invalid data on hukou categories. Among these migrants, 32,625 were inter-provincial migrants. 52.8% of them were male migrants and 47.2% were female migrants. There were 27,861 inter-provincial temporary migrants, accounting for 85.4% of the total inter-provincial migrants. It is expected that the size of temporary population will continue to dominate internal migration in China unless they can get local *hukou* at their destinations.

Changing patterns of inter-provincial migration

The number of inter-provincial migrants was 11.0 and 10.3 million in 1985–1990 and 1990–1995 periods respectively. It jumped by three times to 33.9 million in 1995–2000. It was 38.2 million in 2000–2005 (Leadership Team Office of State Council for National One Percent Population Sampling Survey and Department of Population and Employment Statistics of NBS, 2006). The hukou control on migration was relaxed in 1985. Thus its stimulating effect on migration should be shown in the migration of 1985–1990. The significant increase in migration in the period 1995–2000 has to be sought from other driving forces, such as the rapid economic expansion in coastal regions of China.

Fig. 1 shows the provincial regions in China. Table 2 shows the top ten provinces (including autonomous regions and municipalities) of in-migration. In 2000–2005, the top ten provinces of in-migration were Guangdong, Zhejiang, Jiangsu, Shanghai, Beijing, Fujian, Sichuan, Shandong, Tianjin and Liaoning. Most of them had been top ten destinations since 1985. Zhejiang became the top 10 in 1990–1995, Fujian in 1995–2000 and Tianjin in 2000–2005, closely following their increasingly dynamic economies. Hubei and Henan lost their top ten positions in 1990–1995, Hebei and Xinjiang in 2000–2005. Xinjiang was among the top ten only in 1990–1995 and 1995–2000. Migration to Xinjiang slowed down in 2000–2005, possible due to increasing ethnic tension and growing opportunities in the coastal region. Liaoning was ranked 11th in 1995–2000 and was among top 10 in other periods.

In 2000–2005, the top ten provinces of out-migration were Sichuan, Anhui, Henan, Hunan, Hubei, Jiangxi, Guangxi, Guizhou, Guangdong and Jiangsu. Most of them had been among the top ten since 1985. Jingxi became top 10 in 1990–1995, Hubei and Guizhou in 1995–2000 as they joined the migration system as major origin of migrants. Guangdong became top 10 in 2000–2005 due to

Table 2
Top ten provinces in in-migration 1985–2005.

Region	1985–1990	1990–1995	1995–2000	2000–2005
Guangdong	1,257,218	1,895,175	12,397,079	12,131,832
Zhejiang	(332,311)	454,678	2,828,914	5,119,389
Jiangsu	789,555	942,863	2,023,236	3,326,794
Shanghai	664,756	706,271	2,288,565	3,059,466
Beijing	671,671	674,810	1,982,498	2,270,916
Fujian	(250,962)	(337,892)	1,469,870	1,954,809
Sichuan	439,130	371,593	1,180,163	985,649
Shandong	607,446	507,081	928,493	933,130
Tianjin	(244,065)	(218,281)	(511,469)	918,779
Liaoning	540,735	425,068	(785,557)	680,763
Hebei	519,147	488,088	789,245	(618,244)
Xinjiang	(341,573)	552,861	1,118,717	(583,664)
Hubei	429,914	(262,794)	(709,633)	(506,183)
Henan	474,867	(264,352)	(485,658)	(282,595)

Note: sorted by in-migration in 2000–2005. Numbers in brackets indicate these provinces are not among the top ten.
Sources: see Table 1 and Office of National Population Sampling Survey (1997).

Table 3
In-migration rate in provincial units of China 1985–2005 (%).

Province	1985–1990	1990–1995	1995–2000	2000–2005
China	1.0	0.9	2.7	3.1
Eastern region				
Shanghai	5.0	5.0	13.7	17.5
Beijing	6.2	5.4	14.4	15.1
Guangdong	2.0	2.8	14.3	13.7
Zhejiang	0.8	1.1	6.1	10.9
Tianjin	2.8	2.3	5.1	9.0
Fujian	0.8	1.0	4.2	5.8
Jiangsu	1.2	1.3	2.7	4.6
Hainan	2.3	1.4	3.0	2.5
Liaoning	1.4	1.0	1.8	1.7
Shandong	0.7	0.6	1.0	1.1
Hebei	0.9	0.8	1.2	1.0
Central region				
Jiangxi	0.6	0.3	0.7	1.3
Anhui	0.6	0.3	0.6	1.2
Hubei	0.8	0.5	1.2	0.9
Hunan	0.5	0.3	0.6	0.8
Jilin	1.0	0.6	1.0	0.8
Shanxi	1.1	0.5	1.2	0.7
Heilongjiang	1.0	0.6	0.9	0.5
Henan	0.6	0.3	0.5	0.3
Western region				
Xinjiang	2.3	3.3	6.0	3.1
Inner Mongolia	1.2	1.2	1.4	1.7
Guizhou	0.6	0.4	0.8	1.5
Qinghai	2.6	1.0	1.6	1.4
Ningxia	2.0	0.9	2.4	1.4
Yunnan	0.7	0.5	1.8	1.1
Sichuan	0.4	0.3	1.0	0.9
Guangxi	0.3	0.3	0.7	0.9
Shaanxi	0.9	0.5	1.2	0.7
Gansu	0.9	0.6	0.8	0.5

Sources: see Table 2.

Table 4
Out-migration rate in provincial units of China 1985–2005 (%).

Province	1985–1990	1990–1995	1995–2000	2000–2005
China	1.0	0.9	2.7	3.1
Eastern region				
Fujian	0.8	0.7	1.9	2.4
Zhejiang	1.5	1.2	2.2	2.2
Beijing	1.2	0.9	1.3	2.2
Shanghai	1.0	0.8	1.0	2.2
Hainan	1.6	1.4	1.8	2.0
Guangdong	0.4	0.3	0.6	2.0
Jiangsu	0.9	0.6	1.8	1.9
Hebei	1.1	0.6	1.4	1.5
Shandong	0.6	0.4	1.0	1.3
Tianjin	0.8	0.6	1.1	1.1
Liaoning	0.8	0.5	1.0	1.0
Central region				
Anhui	1.0	1.2	5.1	6.7
Jiangxi	0.8	1.2	7.0	6.2
Hunan	0.9	1.1	5.5	5.6
Hubei	0.6	0.6	3.9	5.0
Henan	0.7	0.8	2.6	3.9
Heilongjiang	1.7	1.6	2.7	2.8
Jilin	1.4	1.1	2.0	2.1
Shanxi	0.8	0.4	1.1	1.1
Western region				
Guizhou	1.0	1.1	3.7	5.1
Sichuan	1.2	1.2	5.1	5.0
Guangxi	1.4	1.2	4.4	4.9
Shaanxi	1.1	0.7	2.1	2.3
Gansu	1.3	1.0	2.2	2.0
Inner Mongolia	1.4	1.1	2.0	1.8
Qinghai	2.3	1.5	2.6	1.7
Yunnan	0.8	0.6	1.0	1.5
Ningxia	1.2	1.1	1.6	1.2
Xinjiang	1.8	0.9	1.2	1.0

Sources: see Table 2.

return migration resulting from large in-migration. On the other hand, Shandong lost its top 10 position in 1990–1995, Heilongjiang and Hebei in 2000–2005 and Zhejiang in 2000–2005. These coastal provinces were over-taken by less advanced provinces such as Guangxi and Guizhou as major source of migrants.

The above analysis is based on total migrants moving in and out of provinces. They are affected by the population size of provinces as a large province would certainly send out or receive more migrants. To measure the intensity or attractiveness to migrants, in-migration rate and out-migration rate can be calculated (Tables 3 and 4).

As shown in Table 3 and Fig. 2, all provinces in Eastern China, except Shandong and Hebei, had an in-migration rate over national

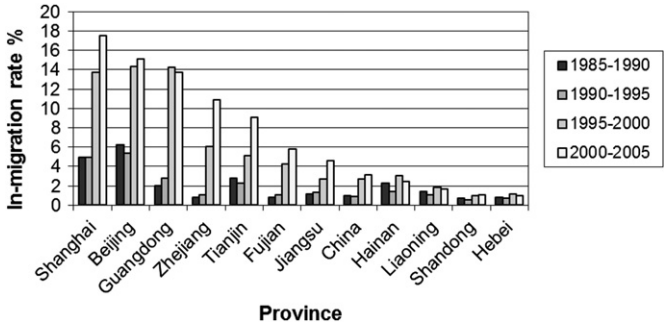


Fig. 2. In-migration rate in provincial units of eastern region of China 1985–2005 (%).

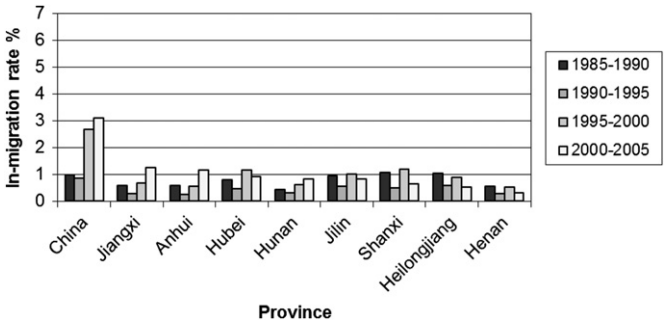


Fig. 3. In-migration rate in provincial units of central region of China 1985–2005 (%).

average in some or all years of 1985–2005. Shanghai and Beijing had the highest in-migration rate over 4.9% among all provinces in 1985–1990 and 1990–1995. Their in-migration rates then jumped to over 13% in 1995–2000 and 2000–2005 along with Guangdong. The in-migration rate in Fujian also increased, but less significantly from 1.0% in 1990–1995 to 4.2% in 1995–2000. Zhejiang and Tianjin's in-migration rate increased from below 2.5% in 1985–1995 to over 4.5% in 1995–2000 and over 9% in 2000–2005. But Jiangsu only reached an in-migration rate of 4.6% in 2000–2005. It is clear that Guangdong, Zhejiang, Tianjin, Fujian and Jiangsu gradually joined Shanghai and Beijing as top destinations of in-migration since 1985. The belt of high in-migration rate includes the south part of the eastern coastal region from Jiangsu to Guangdong, plus Beijing and Tianjin.

In the central part of China, all provinces had an in-migration rate below 1.3%. Almost all in-migration rates were below national average (Table 3 and Fig. 3). In the western part of China, in-migration rates in all provinces were below 2.6% in the period 1985–2005 except Xinjiang (Table 3 and Fig. 4). Almost all in-migration rates were below national average. Xinjiang was a special case. Its in-migration rate was over national average in the period 1985–2000 and increased slightly in 1995–2000. But its in-migration rate declined to 3.08%, below the national average, in the period 2000–2005.

The pattern of out-migration rate is different from in-migration rate. Most provinces in eastern region had an out-migration rate below the national average in the period 1985–2005 (Table 4 and Fig. 5). All out-migration rates were below 2.5%. During the period 1985–1995 when the national out-migration rate was low, out-migration rates in Zhejiang, Beijing and Hainan were over the national average. Out-migration rates in Shanghai and Hebei were over the national average only in 1985–1990. As mentioned before, Beijing and Shanghai had a high in-migration rate even in the period 1985–1995 so they may have a high out-migration rate too. Hebei, Hainan and Zhejiang had also been source of migrants to

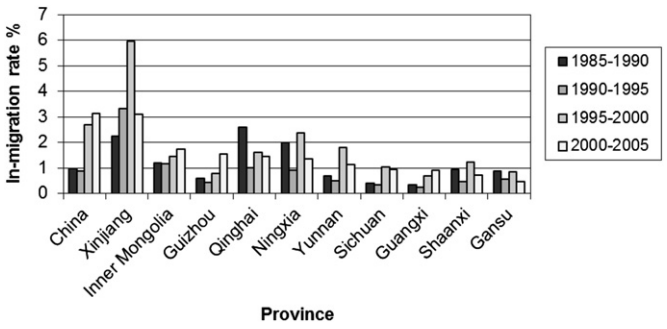


Fig. 4. In-migration rate in provincial units of western region of China 1985–2005 (%).

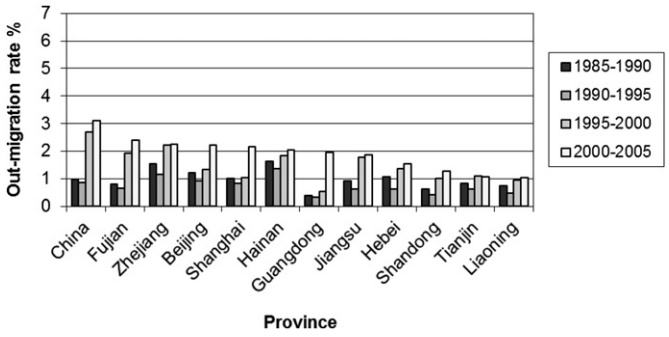


Fig. 5. Out-migration rate in provincial units of eastern region of China 1985–2005 (%).

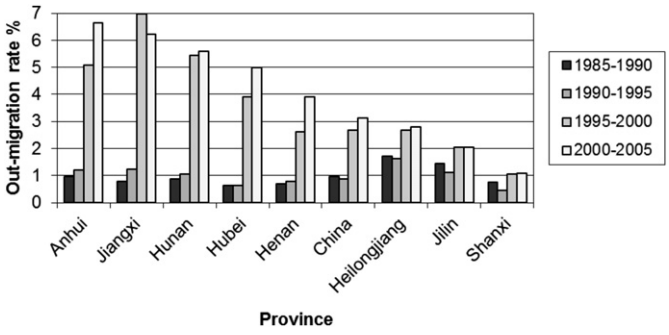


Fig. 6. Out-migration rate in provincial units of central region of China 1985–2005 (%).

nearby areas such as Beijing, Guangdong and Shanghai. But by 1995–2000, their out-migrant rates were over-taken by provinces in the central and western regions.

There was a great change in the out-migration rate in Anhui, Jiangxi, Hunan, Hubei and Henan of the central region. It was below the national average in 1985–1990 (Table 4 and Fig. 6). The out-migration rate in Anhui, Jiangxi and Hunan reached over national average in 1990–1995, Hubei in 1995–2000 and Henan in 2000–2005. They had become major source of migrants in China. But the out-migration rate in Heilongjiang and Jilin changed from over national average in 1985–1995 to below national average in 1995–2005. The out-migration rate from Shanxi was also below 1.1% and the national average in the whole period 1985–2005. Geographically, these provinces were far away from the major economic growth centres, reducing opportunities for migration.

Except Yunnan, the out-migration rate in provinces of western region was over the national average in 1985–1990 (Table 4 and Fig. 7). But out-migration rate changed differently among various provinces after 1985. The out-migration rate in Guizhou, Sichuan and Guangxi increased from below 1.3% in 1990–1995 to over 3.6 in 1995–2000. They were importance source of migrants in China. But the out-migration rate changed from above national average to below national average in Shaanxi in 1990–1995 and in Gansu, Inner Mongolia, Qinghai, Ningxia and Xinjiang in 1995–2000. It is clear that only some provinces in the central and western regions have sent large number of migrants to make use of the growing economy in the coastal region. Some provinces have not established a strong migration link with the coastal region.

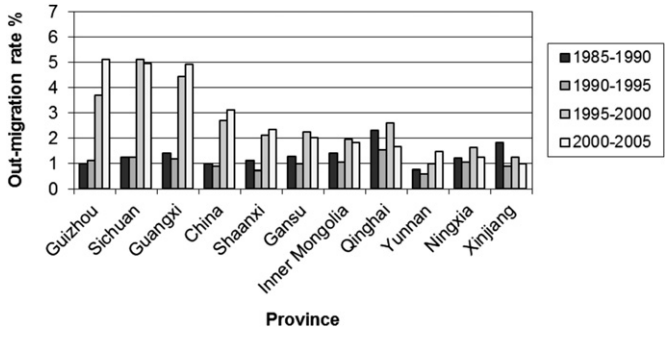


Fig. 7. Out-migration rate in provincial units of western region of China 1985–2005 (%).

Conclusion

The institutional driver, i.e., the relaxation and reform in the *hukou* system, is considered the most important factor in the increasing mobility in post-reform China in the literature. This paper argues that the above institutional factor was influential in the initial increase of migration in the 1980s. Subsequent increase in the migration scale from 1990 to 2000 was driven largely by rapid and unbalanced economic development in China.

The framework of time–space geography is adopted in this study. It is argued that various factors have different characteristics of dynamic response and spatial diffusion. For example, economic reform and open door policy have been implemented with increasing intensity since 1978. But they have a clear pattern of spatial diffusion. Partly related to such staged reform and opening, rapid economic growth took place first in the Pearl River Delta (Guangdong) in the 1980s, then spread to the Yangtze River Delta (Shanghai, Jiangsu and Zhejiang) in the 1990s and Jing-Jin-Tang region (Beijing, Tianjin and Tangshan) in north China in the 21st century. The time–space geography of development indicates that some areas would first become major destinations of migration, to be followed by other areas later.

On the other hand, the registration of temporary population was introduced in the whole country at almost the same time in 1985. It has one-off impact on migration. But population in less developed areas may respond to relaxed migration control and migration opportunities in advanced areas gradually. Their response time is determined by their migration tradition, ability as well as distance from the destinations of opportunities.

The temporary population in China has increased from 6.1 million in 1982 to 39.6 million in 1990 and to a massive 109.0 million in 2000 and 149.4 million in 2005. The size of temporary population is larger than that of inter-provincial temporary migrants in a five-year period. According to 2000 census data, temporary migrants accounted for 85.4% of the total inter-provincial migrants in the period 1995–2000 as permanent migrants who could change their place of *hukou* were small. This paper makes a detailed time–space analysis of the migration patterns in China using migration data from 1990 and 2000 censuses and 1995 and 2005 population surveys.

The number of inter-provincial migrants was 11.0 and 10.3 million in 1985–1990 and 1990–1995 periods respectively. It jumped by three times to 33.9 million in 1995–2000. It was 38.2 million in 2000–2005. As the *hukou* control on migration was relaxed in 1985, its stimulating effect on migration should be reflected in the migration of 1985–1990. The dramatic increase in migration in the period 1995–2000 has to be sought from other driving forces, such as rapid economic expansion in the coastal region of China.

It is found that most provinces in eastern China had an in-migration rate over national average in some or all years of 1985–2005 except Shandong and Hebei. Shanghai and Beijing had an in-migration rate over 4.9% in 1985–1990 and 1990–1995, well

above other provinces. Their in-migration rates then jumped to over 13% in 1995–2000 and 2000–2005 along with Guangdong. Fujian had a similar jump, but less significant from 1.0% in 1990–1995 to 4.2% in 1995–2000. Zhejiang and Tianjin's in-migration rate jumped from below 2.5% in 1985–1995 to over 4.5% in 1995–2000 and then jumped again to over 9% in 2000–2005. Jiangsu reached an in-migration rate of 4.6% only in 2000–2005. Over time, Guangdong, Zhejiang, Tianjin, Fujian and Jiangsu gradually joined Shanghai and Beijing as top destinations of in-migration.

The main sources of migrants were provinces in the central and western parts of China. The out-migration rate in Anhui, Jiangxi, Hunan, Hubei and Henan of the central region was below the national average in 1985–1990. The out-migration rate in Anhui, Jiangxi and Hunan reached over national average in 1990–1995, Hubei in 1995–2000 and Henan in 2000–2005, indicating that they had become major sources of migrants in China. The out-migration rate jumped from below 1.3% in 1990–1995 to over 3.9% in 1995–2000 in Anhui, Jiangxi and Hunan. Henan's out-migration rate also reached 3.9% in 2000–2005.

The out-migration rate in all provinces of western region was over the national average in 1985–1990 except Yunnan. The out-migration rate in Guizhou, Sichuan and Guangxi jumped from below 1.3% in 1990–1995 to over 3.6% in 1995–2000. They were importance sources of migrants like Anhui, Jiangxi, Hunan and Hubei in the central region.

The top origins of out-migration, in order of out-migration rate, were Jiangxi, Hunan, Sichuan, Anhui, Guangxi, Hubei and Guizhou in 1995–2000. In contrary to common understanding, Jiangxi and Hunan had a higher out-migration rate than Sichuan. In 2000–2005, the top origins were Anhui, Jiangxi, Hunan, Guizhou, Hubei, Sichuan, Guangxi and Henan. Again, the out-migration of Sichuan was below many provinces.

Overall, inter-provincial migration in China is asymmetrical. The eastern region has consolidated its position as destination of migration while central and western regions have mainly served as sources of migrants. For example, most migrants went to Shanghai, Beijing, Guangdong, Zhejiang, Tianjin, Fujian and Jiangsu which were the most important destinations of migration. Most of them came from Anhui, Jiangxi, Hunan, Guizhou, Hubei, Sichuan, Guangxi and Henan in 2000–2005. Thus only some provinces in the central and western regions have made use of growing economy in the coastal region through migration. The analysis of migration in space and time reveals the links among hukou reform, regional development and inter-provincial migration and the changing drivers of migration in China in the reform period.

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