

# Economic Opportunities and Internal Migration: A Case Study of Guangdong Province, China\*

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Economic opportunities are considered a primary determinant of human migration, but their explanatory power in Communist China has been limited because of strong government intervention in controlling migration and in planned population transfers. Since the late 1970s, however, economic reform has brought about changes in China's regional economies and generated new push and pull forces for migration, and the relaxation of migration restrictions has created greater opportunities for nongovernment-induced migration. Using data primarily from the 1990 census, I review the spatial patterns of migration and the characteristics of the new migrants. A case study of Guangdong Province reveals that its attractiveness to migrants from other provinces and its intra-provincial migration patterns are attributable to differentials in per capita output and foreign investment. The findings support the argument that China has entered a new era of migration in which present and expected economic opportunities are important explanations for the volume and directions of population movement. **Key Words:** internal migration, economic opportunities, foreign investment, Guangdong, China.

## Introduction

As early as Ravenstein (1889), migration has been understood as a means to better oneself economically. In exploring rural-urban migration in developing countries, Lewis (1954) and Fei and Ranis (1961) showed that the existence of rural surplus labor and a rural-urban wage gap are major factors of internal migration. Todaro (1976) further established that expected economic gains are important considerations in migration decisions. These theoretical generalizations highlight economic opportunities as a driving force of migration, and have been quite successful in explaining and predicting the volume, direction, and pattern of internal migration in many countries. But they have been less applicable in explaining the migration in China, because of strict government control over migration for much of the period after 1949. The government has also vigorously directed planned migration and population transfers for political and policy-related reasons. However, changes since the late 1970s, including economic reform and relaxation of migration controls, seem to have given new impetus to voluntary migration (Yang and Li 1995).

The greater availability of migration data since the 1980s has enabled an increase in

empirical research on migration in China, but most of the attention has been given to national trends rather than to regional or spatial patterns. This paper investigates the role of differentials in economic opportunities and regional and spatial patterns of post-Mao migration. The first section provides a brief review of major works on economic opportunities and migration, followed by a discussion of the relationship between government policy and migration in China. With the aid of a detailed study of Guangdong Province, the empirical analysis describes and seeks to explain the regional and spatial patterns of recent migration in China.

## Economic Opportunities and Migration

One of Ravenstein's (1889) "laws" established that the economic motive is the most important reason for migration because of the fundamental desire for humans to better themselves in material aspects. The significance of the economic motive has since been echoed and tested, and the literature has highlighted employment-related incentives such as demand for labor and propensities for higher wages.

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Migration theorists have also explained the predominance and persistence of rural-urban migration in developing countries with differentials in economic and employment opportunities. The Lewis-Fei-Ranis (LFR) model (Lewis 1954; Fei and Ranis 1961) postulated that in a developing economy with a traditional rural subsistence sector and a modern urban industrial sector, the low productivity rural sector will generate "surplus" labor that is gradually transferred (and migrated) to the urban sector in response to the latter's higher wages. Assuming a constant urban wage and a perfectly elastic supply of rural labor, the model predicts that excess profits will be reinvested in the urban sector, increasing its total capital stock, production, and demand for labor. This will in turn sustain and accelerate continuous streams of rural-urban migration.

Todaro (1976), on the other hand, observed that the new demand pull for labor predicted by the LFR model does not occur when capital profits in the urban sector are reinvested in labor-saving technology; this will instead lessen the likelihood of full employment in urban areas. He argued that the coexistence of urban unemployment and rural-urban migration has to be understood as an outcome of "expected" economic gains, that is, the probability of future employment opportunities in urban areas.

These theoretical constructs have been tested in many countries but have rarely been applied in China. Drawing on the general conclusions of the LFR and Todaro models, this paper investigates to what extent economic opportunities are an important factor of the spatial pattern of migration flows in post-Mao China. By focusing on the province of Guangdong, I further hypothesize that foreign investment is an important determinant of migration through the creation of jobs in China's open zones. Unlike the LFR and Todaro approaches, however, this paper does not directly examine rural-urban migration, nor does it tackle the problem of urban unemployment. Four reasons lie behind these differences in approach. First, distinguishing between rural and urban areas and between rural and urban population is a complicated exercise due to numerous changes in Chinese official definitions (Chan 1994; Hsu 1994; Wu 1994). Second, the coexistence and intermixing of agricultural and nonagricultural land use, espe-

cially in fringes of large coastal cities, have blurred the boundaries between rural and urban areas and made their distinctions less meaningful (McGee 1989). Third, unlike many other developing countries, China has not yet experienced chronic urban unemployment (Christiansen 1992; Chan 1994, 134). Fourth, while the literature has provided some estimates of the extent of rural-urban migration in China (Chan 1994; Wu 1994), little attention has been given to the regional and spatial patterns of migration or to the explanation of such patterns, which are the foci of this paper. The following section provides a background on how the Chinese government has intervened in restricting and enabling migration.

### Government Policy and Migration in China

The Chinese nationwide household registration (*hukou*) system, which categorizes the population into either "agricultural" or "non-agricultural,"<sup>1</sup> has been a means by which the government controls migration (Cheng 1991). Where a person is registered is also his or her official place of residence. In order to permanently migrate to a different place of residence, one has to obtain permission from appropriate authorities at both the origin and destination. The general practice is to discourage rural-urban migration, especially migration to large cities, partly to support the socialist regime's aspiration for maintaining equitable population distribution by size and location, and partly to ensure that the state is not overburdened by entitlements to state benefits by an expanding urban population.

From the beginning of Communist China to the 1970s, three major types of migration may be identified. Peasants who fled from rural collectivization during the first decade of Communist rule constituted "blind infiltration" into cities, an exception to the strict control of rural-urban migration that characterized much of the period that followed. Second, traditional peasant migration from one rural area to another, or from a densely populated region to a less densely populated region in search of resources and land, continued (Shen and Tong 1992). The third and perhaps most significant type of migration was planned or forced migration by the government in order to achieve specific policy objectives. For

example, urban youths and intellectuals were "rusticated" (mobilized to move to the countryside) to be "reeducated" by the peasants, and the "Third Front" program necessitated the transfer of millions of people to industries in remote and militarily sheltered locations (Naughton 1988). In short, during Mao's rule the government intervened heavily in population movement by controlling rural-urban migration and by large-scale planned population transfers.

During the post-Mao period the government has again introduced policies that have important implications for migration. Economic reform since the late 1970s has created new push and pull forces. The "household responsibility system," which allows peasants greater autonomy in decisions about labor, crops, and marketing, triggered a surge in agricultural productivity (Lin 1992). The result has been a growing surplus labor force estimated at 100 million in the 1980s (Banister and Taylor 1989) growing to 120 million in 1994 (Li, T. 1994). Meanwhile, new policy emphases on trade and foreign investment have led to rapid expansion of labor-intensive industries in urban areas, especially in the eastern region. The unwillingness of urban youths to work in these jobs further reinforced the demand pull for peasant labor and prompted factories to recruit peasant labor from the countryside (Liu 1991). The sharp and persistent differences in income between the coast and the interior, and between rural and urban areas, fueled the desire of many to migrate (Zhang 1992). Although China's labor market remains segmented, these new push and pull forces provided new impetus for potential migrants to break into expanding job markets.

A second set of policies contributed to relaxation of migration restrictions. During the early 1980s, some provincial authorities began to allow greater autonomy in movements of goods and rural residents. Most importantly, a State Council directive in 1984 granted rural residents the right to move to market towns and in some cases to larger urban areas provided that they did not need the state-rationed grains to which the nonagricultural population was entitled<sup>2</sup> (*People's Daily* 1984). Through this strategy the government was able to relieve some of the surplus labor pressure with-

out compromising the intricate registration system and without jeopardizing the financial well-being of the state. Instead of complete control over migration, this is referred to as a "guidance" approach to population distribution (Cai 1990).

These policies have seemingly contributed to large magnitudes of population movement. Although the state still maintains significant degrees of control over migration, millions of rural surplus labor migrants, as well as migrants from urban areas, have managed to move. In contrast to Maoist planned migrations that favored inland regions, the eastern region is now at the receiving end of population flows (Ding 1994). The new push and pull forces and new government regulations seem to have engendered a new era of migration in China, where greater autonomy in voluntary migration is possible and where economic opportunities may play a more important role. The empirical analysis that follows seeks to ascertain the importance of economic opportunities in explaining migration in China and in Guangdong Province.

## Empirical Analysis

### *Data*

The empirical analysis uses data from the 1990 census. Compared with two other popular sources of migration data—the 1987 1% sample survey (SSB 1988) and the 1986 study of 74 cities and towns (Day and Ma 1994)—the 1990 census is more comprehensive because it covers the entire country and the entire population, and it is more up-to-date; this is especially important for studies on Guangdong, where a rapid increase in migration has taken place since the mid-1980s (Zhu 1994). I use two types of migration data: *qianyi renkou* and population registered elsewhere.

#### (1) *Qianyi renkou* (QR)

This term literally means "migrant population." According to the 1990 census, it is defined as the population aged five years and older whose current place of residence (CPR) on July 1, 1990 was in a *different county or city* than the usual place of residence (UPR) on July 1, 1985 (SSB 1993b, Vol. IV, 512–13). Children under five in 1990, return migrants, multiple moves between 1985 and 1990, and movement within a county or city were not

recorded. A change in *bukou* is not necessary for one to be considered a member of QR. In the following analysis, the terms *migrant*, *in-migrant*, and *out-migrant* generally refer to members of QR. Nonmigrants include those who were born at their CPR, those who moved there prior to 1985, and those who moved and returned to the same city or county between 1985 and 1990.

A migrant was asked two questions on the census form, one on location and one on the reason for migration. The location question asked for the province of the 1985 UPR, and whether the latter was a "street committee" (in a city—*chengshi jiedao*), a town (*zhen*), or a county (*xiang*) (SSB 1993b, Vol. IV, 558). No questions on the exact location of the 1985 UPR (within the province) were asked. Therefore, for any county or city, the total number of in-migrants may be reported, but the volume of out-migration is not. It is also difficult to pinpoint the origin, within the donor province, of migrants. As a result, most studies on China's migration, including this paper, focus on in-migration and in-migrants rather than out-migration or out-migrants. In addition to QR, I use population registered elsewhere as a supplementary source of data for inferring the characteristics of Chinese migrants.

#### (2) Population registered elsewhere (PRE)

The 1990 census enumerated the population staying at the CPR regardless of the location of their *bukou* (officially registered residence). They are then broken down into five categories. For the purpose of this paper, I highlight three of the five categories:

- I those whose CPR is the same as the *bukou* location;
- II those who have lived in the CPR for over a year but whose *bukou* is somewhere else;
- III those who have lived in the CPR for less than a year but who have left the *bukou* location for more than a year.

Category I accounted for 97.31% of the Chinese population, ranging from 93.85% in Guangdong to 98.44% in Sichuan (SSB 1993b, Vol. I, 5–7). Category II was usually the second largest in size. In Guangdong, category II accounted for 4.81%, and category III for less than 1% of the population.

Categories II and III consist of individuals who at some point in the past moved to the CPR without also shifting their *bukou* there. Indeed, some researchers have defined these two categories as migrants (Li 1993; Li, R. 1994). In this paper, the sum of categories II and III is referred to as population registered elsewhere (PRE), which overlaps with QR. They differ in two respects. First, QR includes migrants regardless of where their *bukou* is, while PRE refers only to individuals whose *bukou* is elsewhere. Second, QR involves migrants who moved to the CPR between 1985 and 1990, but PRE includes also those who moved to the CPR prior to 1985. Despite these differences, PRE consists of actual migrants and can therefore be used as a supplementary source of data for inferring the characteristics of Chinese migrants. To this effect, this paper uses a special volume of the PRE published by the Guangdong Province Population Census Office (GDPPCO 1992a).

Clarification of a terminology issue is in order. Although the census terminology for PRE is *liudong renkou* (mobile or floating population), it differs from the more common usage of the term floating population. The latter emphasizes the transient and seasonal nature of movements of tourists, people on business trips, short-term visitors, seasonal peasant labor, transients, and vagrants, whose duration of stay may be as little as a few days and whose number fluctuates from day to day (Solinger 1993; Chan 1994). PRE is likely to be of a more permanent nature, since both categories II and III include only the population that have left the *bukou* location for over a year, and category II is further confined to those who have lived in the CPR for over a year.

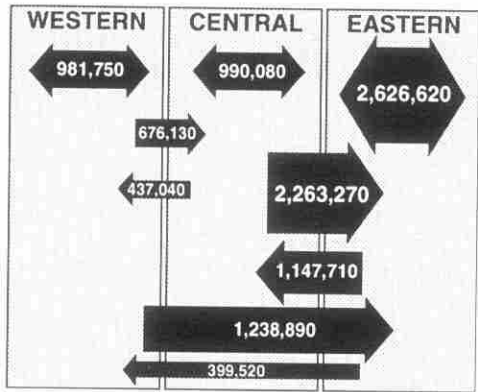
#### *Spatial Pattern of China's Internal Migration*<sup>3</sup>

The 1990 census reported a total of 34,127,607 internal migrants (QR) who have moved to another county or city between 1985 and 1990. They accounted for 3.01%<sup>4</sup> of the total population and 3.36% of the population aged five and above in 1990 (SSB 1993b, Vol. I, 72–3), compared with, respectively, 2.86% and 3.15% for the period 1982–1987 (SSB 1988, 35, 677). Among China's internal migrants, 23,025,734 (67.47%) were intra-provincial migrants and 11,065,361 (32.42%) were interprovincial mi-

grants. The lower incidence of interprovincial migration reflects the greater intervening obstacles involved, which may include longer distance and more complex government regulations.

Figure 1 illustrates the flows of the 11,065,361 interprovincial migrants to the three economic belts based on the Seventh Five-Year Plan (1986–1990). The largest flow was between provinces within the eastern region (2,626,620), accounting for almost one-fourth of total interprovincial migration, followed by the flow from the central to the eastern region (2,263,270), and the flow from the western to the eastern region (1,238,890). The strong eastward movement confirms a reversal of migration flows from the Maoist period when planned migrations were primarily toward central and western regions (Yang and Li 1995). Although the eastward movement was partly due to return migration of those who left the east during the Maoist period (Shen and Tong 1992), the large magnitude of eastward migration indicates that the eastern region is indeed the most attractive region of China. The data also suggest that the eastern region is capable of retaining most of its interprovincial migrants—among the 4,173,850 interprovincial migrants originating from the eastern region, 62.93% (2,626,620) moved to another eastern region province, 27.50% (1,147,710) to the central region, and only 9.57% (399,520) to the western region.

Most of the provinces that had net gains of population from interprovincial migration are in the eastern region. Figure 2, based on the statistics also reported in Table 1 (column 5), shows that 9 of the 12 eastern region provinces had positive net migration rates, while most of the central and western region provinces had negative rates. The three municipalities of Beijing, Shanghai, and Tianjin led the country with net migration rates of 5.00, 3.99, and 1.96%, respectively, followed by Guangdong (1.60%), the only nonmunicipality province that had a net migration rate above 1%. Guangdong's net migration of 1,007,014 persons was also the largest among all provincial-level units, reflecting the enormous gap between 1,257,508 in-migrants (the largest among all provinces) and 250,494 out-migrants (Table 1). These statistics suggest that Guangdong is one of the most attractive destinations of interprovincial migrants.



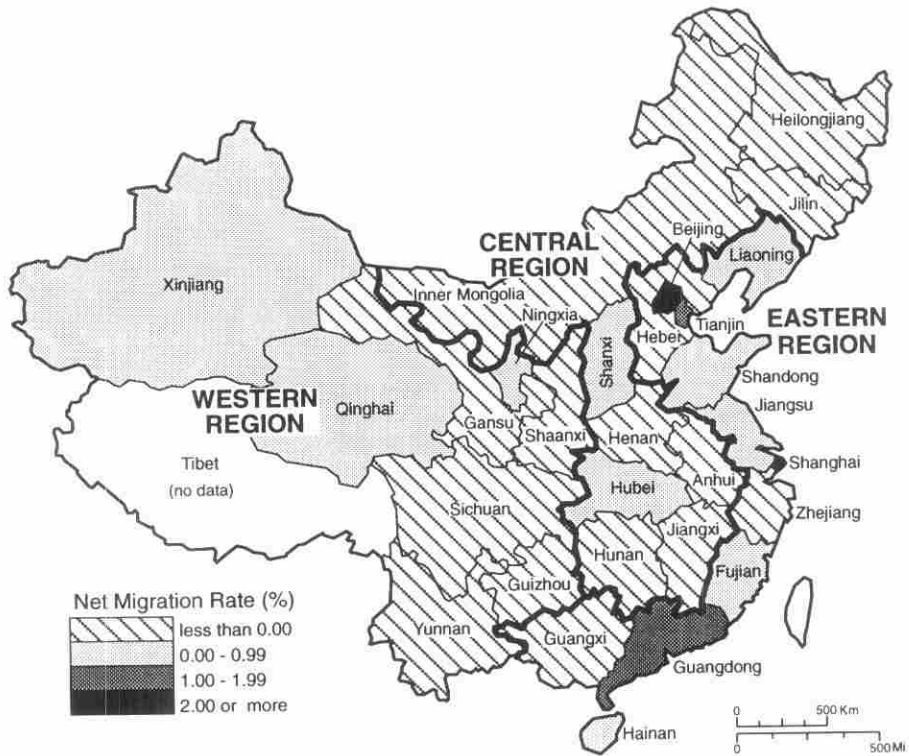
**Figure 1:** Interprovincial migration by region, 1985–1990 (see Fig. 2 for regional delineation). Source: SSB (1991, 126–9).

Figure 3 illustrates a distance decay effect for the source of Guangdong's net migration: the net flows from neighboring provinces were generally greater than the net flows from more distant provinces. Guangxi, which is adjacent to Guangdong but is the poorest amongst eastern region provinces, was the largest source of migrants to Guangdong. It is important to note that Guangdong also gained a significant number of migrants from Zhejiang, Fujian, and Hainan, other eastern region provinces that have experienced rapid economic growth since the economic reform. The net flows of migrants from the remaining eastern region provinces (Jiangsu, Liaoning, Hebei) into Guangdong further confirm its attractiveness as a destination.

Table 1 also reports the volume and rate of intra-provincial migration (columns 6 and 7) and population registered elsewhere (PRE) (columns 8 and 9) in each province. In both cases Guangdong led the provinces with the largest intra-provincial migration rate of 4.25% and the largest PRE rate of 5.28%. These statistics suggest that not only is Guangdong among the most attractive destinations for interprovincial migrants, but mobility within the province is also the highest in the country.

#### *Economic Opportunities and Migration in Guangdong*

**Interprovincial Migration** Guangdong's attractiveness to migrants from other prov-



**Figure 2:** Rate of interprovincial net migration, 1985–1990. Source: SSB (1993a, 158–79).

inces is attributable to its rapid economic growth since the economic reform. From 1980 to 1990, Guangdong's per capita output surged from 1,908 yuan<sup>5</sup> to 4,711 yuan, reflecting a 2.5 times increase and an average annual growth rate of 9.46%, compared with an average of 6.66% for all provinces and 7.02% for eastern region provinces (Table 2).

Guangdong's rapid economic growth is clearly related to government policies and the province's geopolitical location. It was among the first provinces designated for rapid economic growth, it received large amounts of state investment, and it had China's first open zones offering preferential terms to attract foreign investment (*Beijing Review* 1986). Three of the five "special economic zones" (SEZ), two of the fourteen "open coastal cities" (OCC), and the Pearl River Delta Region Open Economic Zone are in Guangdong (Fig. 4). In addition to favorable government policies, the province's proximity and traditional business and kinship ties to Hong Kong

and Southeast Asia, an advantage unmatched by other provinces, offer further incentives for foreign investment.

The large interprovincial net migration rate in Guangdong suggests that migrants moved up the economic gradient from poorer to wealthier provinces. Yet Guangdong was not the only province experiencing rapid economic growth. Two other eastern region provinces, Jiangsu and Zhejiang, also had per capita output growth rates above 9% and their 1990 per capita outputs were greater than that of Guangdong (Table 2). Their interprovincial in-migration and net migration rates were, however, much smaller than Guangdong's, and Zhejiang actually had a negative net migration rate. What made Guangdong more appealing and attractive to migrants?

Todaro (1976) argued that individuals consider expected economic opportunities when making migration decisions. What distinguishes Guangdong from Jiangsu and Zhejiang is the very high foreign investment that the

**Table 1** Size and Rate of Inter- and Intra-Provincial Migration and Population Registered Elsewhere by Province. (Figures in thousands)<sup>a</sup>

	Population (1990) (1)	Interprovincial Migration (1985-1990)				Intra-Provincial Migration (1985-1990)		Population Registered Elsewhere (1990)	
		In (2)	Out (3)	Net (4)	Rate (%) <sup>b</sup> (5)	Number (6)	Rate (%) <sup>b</sup> (7)	Number (8)	Rate (%) <sup>b</sup> (9)
<i>Eastern (mean)</i>	39,005	515	354	161	1.02	799	1.84	883	2.63
Beijing	10,819	673	132	541	5.00	84	0.78	517	4.78
Tianjin	8,785	245	72	172	1.96	35	0.40	182	2.07
Hebei	61,083	520	646	-125	-0.21	813	1.33	727	1.19
Liaoning	39,460	541	295	246	0.62	883	2.24	821	2.08
Shanghai	13,342	666	133	533	3.99	173	1.30	542	4.06
Jiangsu	67,057	791	620	171	0.25	1,189	1.77	1,303	1.94
Zhejiang	41,446	336	632	-296	-0.72	800	1.93	723	1.74
Fujian	30,048	251	238	13	0.04	723	2.41	795	2.65
Shandong	84,392	609	535	75	0.09	1,190	1.41	835	0.99
Guangdong	62,830	1,258	250	1,007	1.60	2,671	4.25	3,315	5.28
Guangxi	42,245	143	589	-446	-1.06	888	2.10	617	1.46
Hainan	6,558	150	106	44	0.67	143	2.18	220	3.35
<i>Central (mean)</i>	44,905	323	420	-96	-0.22	900	2.16	787	2.01
Shanxi	28,759	307	218	89	0.31	627	2.18	760	2.64
Inner Mongolia	21,457	254	303	-49	-0.23	578	2.69	612	2.85
Jilin	24,660	237	356	-118	-0.48	611	2.48	509	2.07
Heilongjiang	35,216	367	607	-240	-0.68	1,056	3.00	1,257	3.57
Anhui	56,181	338	533	-196	-0.35	870	1.55	767	1.37
Jiangxi	37,710	225	294	-69	-0.18	734	1.95	588	1.56
Henan	85,534	478	590	-112	-0.13	1,239	1.45	919	1.07
Hubei	53,971	431	346	85	0.16	1,088	2.02	934	1.73
Hunan	60,658	272	529	-257	-0.42	1,298	2.14	738	1.22
<i>Western (mean)</i>	32,013	247	373	-126	-0.03	667	2.27	483	2.11
Sichuan	107,218	470	1,316	-846	-0.79	2,345	2.19	1,208	1.13
Guizhou	32,391	190	313	-122	-0.38	465	1.43	457	1.41
Yunnan	36,973	250	277	-27	-0.07	732	1.98	541	1.46
Shaanxi	32,882	315	362	-48	-0.15	706	2.15	485	1.47
Gansu	22,371	199	281	-82	-0.36	450	2.01	317	1.42
Qinghai	4,457	116	102	14	0.31	151	3.39	183	4.10
Ningxia	4,655	92	57	35	0.76	123	2.64	98	2.12
Xinjiang	15,157	342	277	64	0.42	361	2.38	576	3.80
Mean	38,907	382	380	2	0.34	794	2.06	690	2.30

Sources: Columns 1, 6, and 8 from SSB (1993b, Vol. 1, 5-7, 72-77); columns 2 and 3 calculated from the 1990 census results published in SSB (1993a, 158-79).

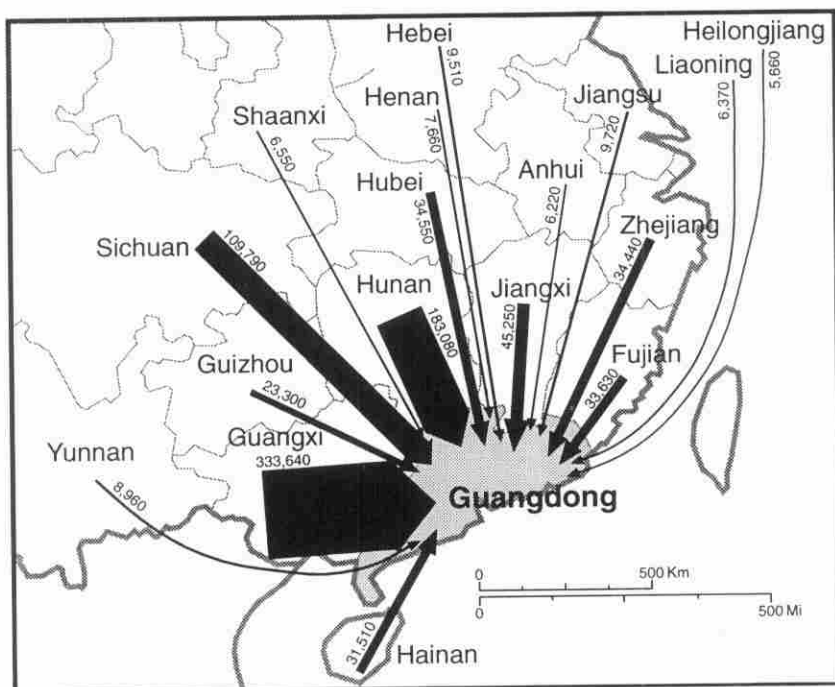
<sup>a</sup>Tibet was omitted from this table due to poor data quality and availability.

<sup>b</sup>Both migration data for 1985-1990 and population registered elsewhere (PRE) for 1990 are used in this paper to investigate migration. Since PRE includes all ages, the rates for both migration and PRE are calculated with respect to total population in 1990 rather than population five years and older in that year.

former has received, which is translated into present economic growth and promises for future employment opportunities and growth. Since the economic reform, Guangdong consistently received significantly higher foreign investment than any other province; in 1990 foreign investment in Guangdong was more than ten times the average for all provinces, and was manifold Jiangsu and Zhejiang's counterparts (Table 2). Likewise, the disparities were large in per capita terms—per capita foreign investment was 147.87 yuan in Guangdong; 17.76 and 14.43 yuan in Jiangsu and Zhejiang, respectively; and 29.28 yuan for the provincial mean. The Pearl River Delta and Shenzhen and Zhuhai SEZs, in particular, have

evolved into "out-processing zones" specializing in labor-intensive export-oriented industries, made possible and expanded only by large inflows of foreign investment, much of which originates from or via Hong Kong (Sit 1989). Migrants from other provinces therefore came to Guangdong in response to present economic opportunities as well as promises of continuing economic and employment opportunities forged by foreign investment.

**Intra-Provincial Migration** Guangdong is also distinguished from other provinces by its high rate of intra-provincial migration (Table 2). In absolute terms, Guangdong's 2,671,046 intra-provincial migrants are more



**Figure 3:** Interprovincial net migration between Guangdong and other provinces, 1985-1990 (net migration less than 5,000 not shown). Source: SSB (1991, 126-9).

than double the number of interprovincial in-migrants it has received. While intervening obstacles for interprovincial migration may explain a higher propensity for migrants to choose a destination within the same province, the especially high mobility within Guangdong also suggests the need to look at spatial differentials in attractiveness within the province.

Research on China's regional development suggests that economic reform has contributed to increases in regional inequality (Fan 1995). In Guangdong the highest average growth rates of per capita GVIAO (gross value of industrial and agricultural output) are concentrated in the rapidly urbanizing Pearl River Delta (Lo 1989) and especially in Shenzhen and Zhuhai SEZs, with rates of 44.39 and 32.47%, respectively (Fig. 5). Growth rates along the coastal areas in the east and west were mostly between 10 and 20%, while the northern prefectures of Qingyuan, Shaoguan, and Heyuan had the lowest rates of growth. The province can therefore be differentiated

into a main core centering on the Pearl River Delta and Shenzhen and Zhuhai SEZs, a semi-periphery along the eastern and western coasts, and a periphery in the north (Ouyang 1993). The coefficient of variation in county-level<sup>6</sup> per capita GVIAO is 1.07 for 1980 and 1.68 for 1990 (GDPSB 1991), suggesting that a significant increase in spatial inequality has taken place. If migration is driven by differentials in economic opportunities, one would expect the steeper economic gradient in Guangdong to accelerate mobility.

Counties<sup>7</sup> were the most popular donors (72.07%) and cities the most popular recipients (63.31%) of intra-provincial migrants (Table 3). The flow from counties to cities consisted of more than one million people and constituted 43.35% of all intra-provincial migrants. These statistics suggest that rural-urban migration was predominant in Guangdong, and support Ma and Lin's (1993) observation that rural migrants were attracted to job opportunities in cities and towns. However,



**Table 2** Comparison of Output, Foreign Investment, Migration, and Population Registered Elsewhere Rates

	Guangdong <sup>a</sup>	Jiangsu	Zhejiang	Eastern Region (Mean)	All Provinces <sup>h</sup> (Mean)
Per capita total output, 1980 <sup>c</sup> (yuan)	1,908	2,359	1,880	3,694	2,277
Per capita total output, 1990 <sup>c</sup> (yuan)	4,711	5,695	4,891	6,261	3,978
Average annual growth rate, 1980–1990 (%)	9.46	9.22	10.03	7.02	6.66
Foreign investment, 1990 <sup>c,d</sup> (million yuan)	10,201	1,185	611	2,116	973
Per capita foreign investment, 1990 <sup>c,d</sup> (yuan)	147.87	17.76	14.43	65.42	29.28
Interprovincial in-migration rate, 1985–1990 (%)	2.00	1.18	0.81	2.03	1.45
Interprovincial out-migration rate, 1985–1990 (%)	0.40	0.93	1.53	1.01	1.10
Interprovincial net migration rate, 1985–1990 (%)	1.60	0.25	-0.72	1.02	0.34
Intra-provincial migration rate, 1985–1990 (%)	4.25	1.77	1.93	1.84	2.06
Population registered elsewhere, 1990 (%)	5.28	1.94	1.74	2.63	2.30

Sources: Output and foreign investment data are based on SSB (1985–1991, 1990); migration data are based on SSB (1993a, 158–79).

<sup>a</sup>Guangdong and Hainan were aggregated for computing output and foreign investment statistics and were separate for computing migration and population registered elsewhere statistics.

<sup>b</sup>Tibet was omitted from all calculations due to poor data quality and availability.

<sup>c</sup>All output and foreign investment data have been converted to 1990 prices.

<sup>d</sup>Qinghai was omitted from foreign investment calculations due to poor data quality and availability; foreign investment data were converted into yuan using the 1990 official exchange rate.

census data are not sufficiently detailed to determine the spatial paths of intra-provincial migration, or the effect of distance.

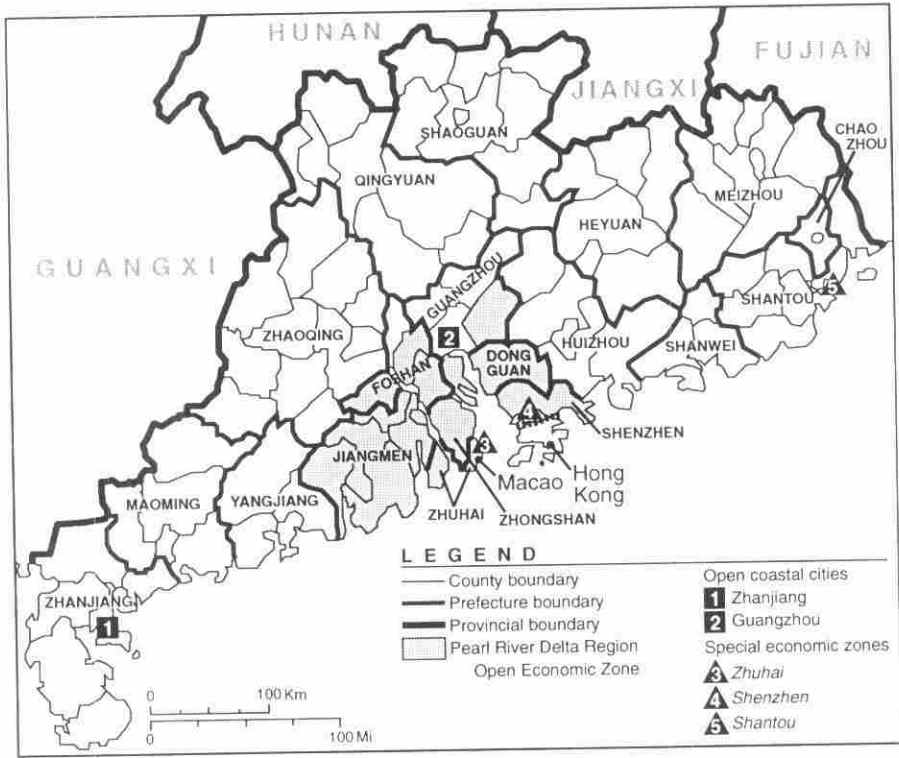
### *Spatial Pattern of In-Migration and Population Registered Elsewhere*

Although the census does not report county-level out-migration data, the spatial distribution of in-migrants may shed some light on the relative attractiveness of different localities within the province. Figures 6a and 6b show respectively the inter- and intra-provincial in-migration rates in Guangdong. Both exhibit distinct spatial patterns. The main cluster of high interprovincial in-migration rates is found in the Pearl River Delta and its vicinity. In particular, Shenzhen prefecture, which includes Shenzhen SEZ (15.09%) and Baoan county (17.93%), Dongguan prefecture (12.64%), and Zhuhai SEZ (11.36%), all geographically near Hong Kong, had the highest rates of interprovincial in-migration. A minor cluster in the northern border areas may be attributable to its proximity to neighboring donor provinces of Hunan and Jiangxi and to a major interprovincial railway line.

The Pearl River Delta again stands out as a cluster of high intra-provincial in-migration rates (Fig. 6b). The highest rates for this core are in Shenzhen prefecture: 47.52% for Baoan county, 46.44% for Shenzhen SEZ, and 31.07% for Zhuhai SEZ. Like the pattern for interprovincial migration, a minor cluster exists in the northern Shaoguan counties, which again may be attributable to the accessibility provided by the nearby railway line. The Shantou SEZ in the east and Zhanjiang OCC in the west also had relatively high intra-provincial in-migration rates.

The map of rates of population registered elsewhere (PRE) (Fig. 7) depicts a spatial pattern strikingly similar to intra-provincial in-migration (Fig. 6b): a main cluster in the Pearl River Delta, the highest rates of Shenzhen prefecture (56.99% in Shenzhen SEZ and 66.14% in Baoan county) and Zhuhai SEZ (39.27%), a minor cluster in the north, and relatively high rates in Shantou SEZ and Zhanjiang OCC.

The above figures clearly indicate a spatial congruence of interprovincial in-migrants, intra-provincial in-migrants, and PRE, especially in the Pearl River Delta area where population flows converged. This convergence suggests



**Figure 4:** Open zones in Guangdong (administrative boundaries as of 1990). Sources: GSDC (1992); Pan et al. (1991).

that migrants are not only responsive to spatial differentials in economic growth, but that they are also overwhelmingly attracted to Guangdong's open zones, where foreign investment has generated a demand pull for labor especially in labor-intensive industries. As a result, organized efforts were made to recruit migrants, and chain migration took place when potential migrants learned of new employment opportunities through friends and relatives (Nolan 1993; Yang 1995).

In order to confirm that spatial differentials in economic opportunities and foreign investment in counties are indeed important determinants of migration, four regression models were estimated where the dependent variables are:

RINMIG = rate of total in-migration, 1985–1990 (%);

RINTER = rate of interprovincial in-migration, 1985–1990 (%);

RINTRA = rate of intra-provincial in-migration, 1985–1990 (%); and

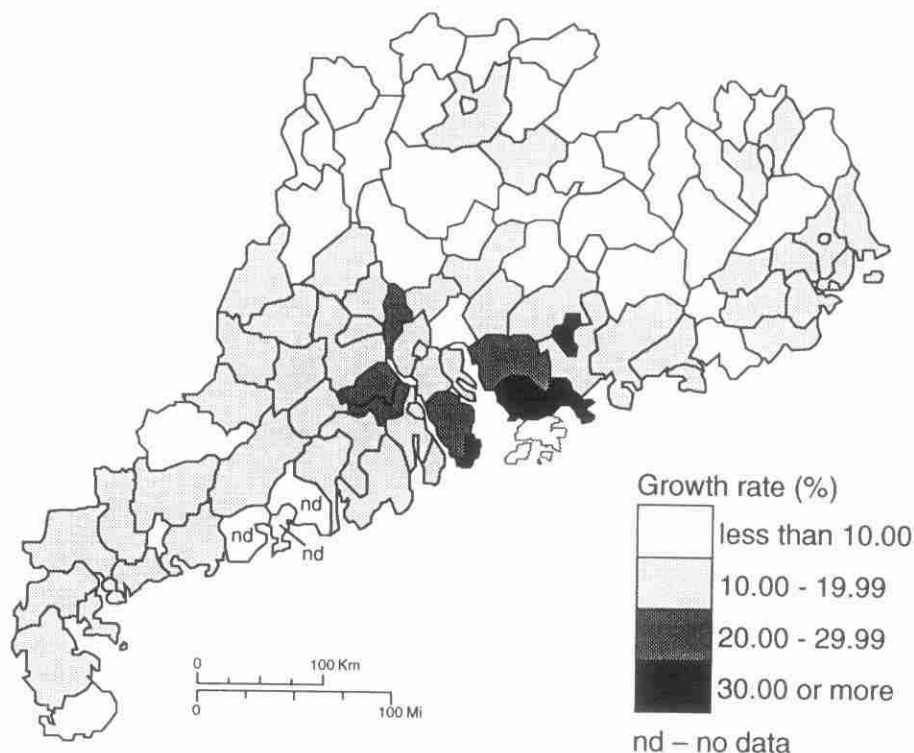
RPRE = rate of population registered elsewhere, 1990 (%).

Because these rates are expressed as percentages of the 1990 population in the destination, they reflect the attractiveness of the destination but not the propensity of migration from any particular origin. The two independent variables are indicators of the spatial differentials of economic development and foreign investment:

PCGVIAO = per capita gross value of industrial and agricultural output, 1988 (yuan, in 1990 prices); and

PCFORINV = per capita aggregated foreign investment, 1988–1990 (yuan, in 1990 prices).

The year 1988 was selected for evaluating PCGVIAO because it occupied a middle posi-



**Figure 5:** Average annual growth rate of per capita gross value of industrial and agricultural output in Guangdong, 1980–1990. Source: GDPSB (1991).

tion in the migration period between 1985 and 1990, and because it was prior to the 1989 Tiananmen crackdown and the subsequent recession. Because foreign investment fluctuates from year to year, an aggregate measure such as PCFORINV is more desirable than a one-year measure. While PCGVIAO is used here as a general proxy of economic opportunity, PCFORINV reflects expected economic opportunities because foreign investment has

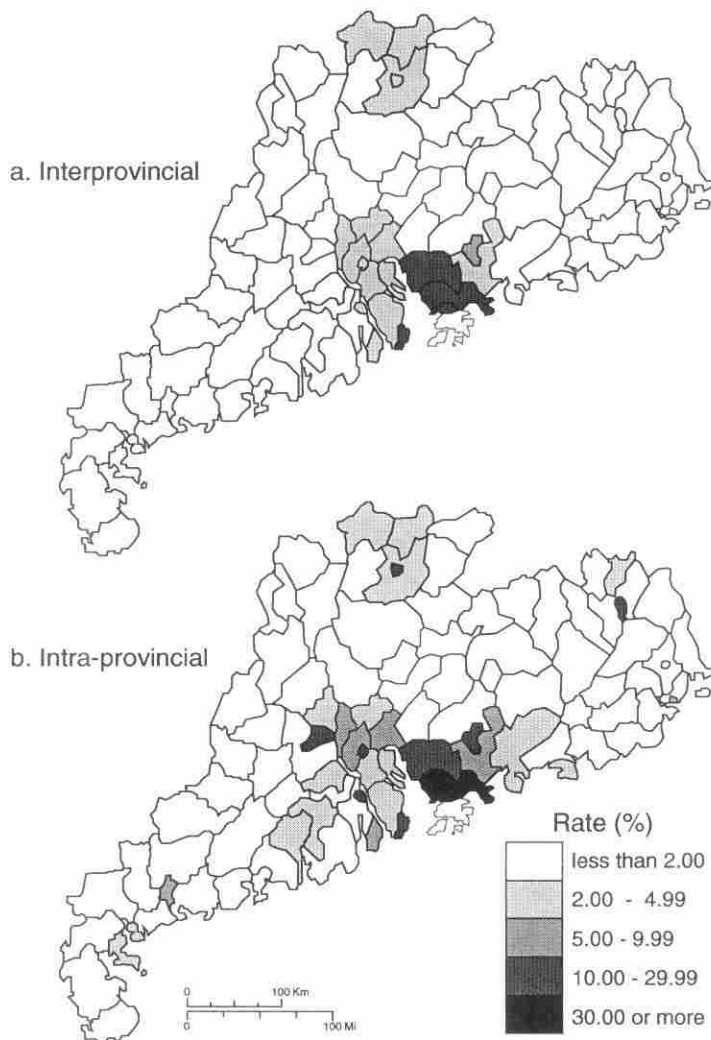
generated and is expected to generate increasing employment in Guangdong. In other provinces, however, foreign investment may not be a major source of employment growth.

Table 4 reports the results of model estimation by regression. The four models are all statistically significant with respectable  $R^2$ s: the two independent variables together explain 65%, 51%, 67%, and 60% of the variations in RINMIG, RINTER, RINTRA, and RPRE,

**Table 3** Intra-Provincial Migration in Guangdong, 1985–1990

Destination Figures in thousands (%)	Origin			
	City	Town	County	Total
City	171 (6.40)	362 (13.55)	1,158 (43.35)	1,691 (63.31)
Town	54 (2.02)	135 (5.05)	675 (25.27)	864 (32.35)
County	10 (0.37)	16 (0.60)	92 (3.44)	118 (4.42)
Total	235 (8.80)	512 (19.17)	1,925 (72.07)	2,671 (100.00)

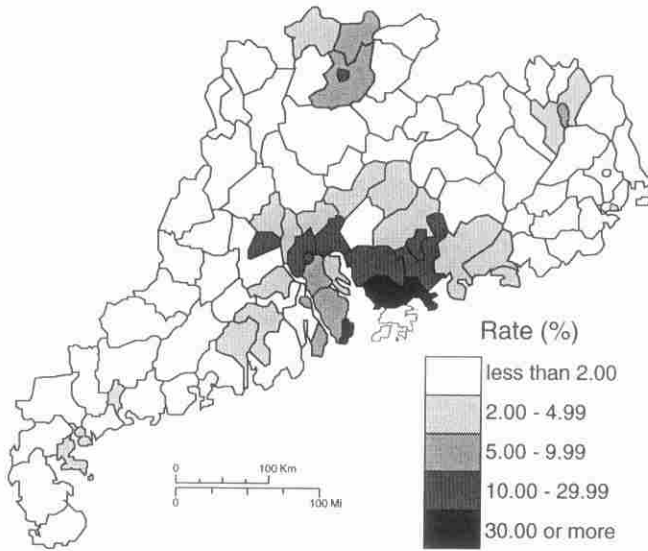
Source: GDPPCO (1992b, 24).



**Figure 6:** Rate of in-migration in Guangdong, 1985–1990. Source: GDPPCO (1992b, 26–34, 262–71).

respectively. Standardized regression coefficients reveal that industrial and agricultural output has a greater impact than foreign investment on migration. In three of the four models (except the second model with RIN-TER as the independent variable), however, standardized regression coefficients associated with foreign investment are statistically significant, suggesting that foreign investment is indeed an important determinant of migration in Guangdong.

These analyses suggest a strong relationship between economic development and foreign investment on one hand and migration on the other. Post-Mao migrants in China are moving up the economic gradient, from poorer provinces and localities to wealthier areas, and they are moving to places where foreign investment has created and promises to create new economic and employment opportunities. In order to shed light on which people, among all potential migrants, are aware of attractive eco-



**Figure 7:** Rate of population registered elsewhere, 1990. Sources: GDPPCO (1992a, 24-33; 1992b, 26-34).

nomic opportunities and are capable of translating their desire for economic betterment into actual migration, the following section discusses the demographic characteristics of migrants and PRE.

#### *Demographic Characteristics of Migrants and Population Registered Elsewhere*

Among the Chinese migrants who moved be-

tween 1985 and 1990, 55.18% were men and 44.82% were women. In-migrants to and within Guangdong were more evenly divided by sex, with 50.83% men and 49.17% women.

For China as a whole, "industry or business" (31.43%), "job transfer" (15.68%), and "education or training" (13.86%) were the most important reasons given for migration by men (Fig. 8). Among women, however, "marriage" (28.29%) was the most important reason for

**Table 4** Regression Results<sup>a</sup>

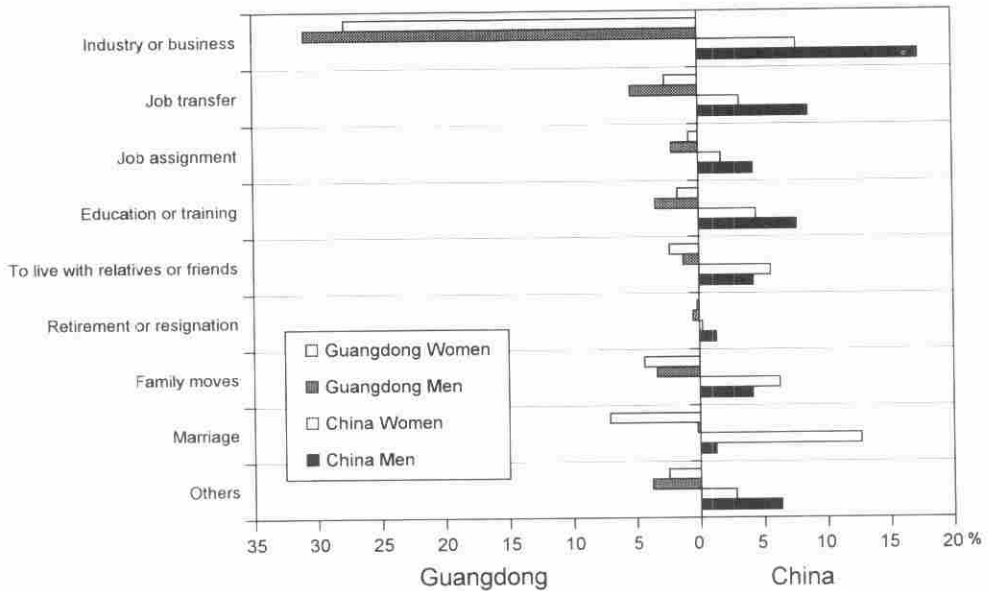
Independent Variable <sup>b</sup>	Dependent Variable <sup>b</sup>			
	RINMIG	RINTER	RINTRA	RPRE
Standardized Regression Coefficient				
PCGVIAO	0.5196*	0.4657*	0.5248*	0.4120*
PCFORINV	0.3152*	0.2734	0.3222*	0.3867*
Coefficient of Determination (R <sup>2</sup> )	0.6543*	0.5131*	0.6734*	0.5966*

Sources: GDPPCO (1992a, 24-33; 1992b, 26-34); GDPSB (1991); SSB (1985-1991; 1994, 283).

<sup>a</sup>Seven counties were omitted from the regression due to data limitations. The regression models were therefore estimated based on 91 counties, with degrees of freedom for regression 2 and for residual 88.

<sup>b</sup>See text for explanation of abbreviations.

\*Statistically significant at the 0.05 level.



**Figure 8:** Reasons for migration, China and Guangdong (values are percentages of total migrants). Sources: GDPPCO (1992b, 272–91); SSB (1993b, Vol. 1, 74–7).

migration, followed by “industry or business” (17.29%), “family moves” (14.03%), and “to live with relatives or friends” (12.54%). The economic motive, therefore, seemed to be stronger among men while women tended to be more concerned with family and kinship factors.<sup>8</sup> In Guangdong, on the other hand, both men and women in-migrants overwhelmingly selected “industry or business” (60.83%

and 56.41% respectively) as the primary reason for migration. The search for desirable employment opportunities, especially in the urban and industrial sector, was the greatest driving force behind interprovincial migrants to and intra-provincial migrants within Guangdong. These statistics have two implications. First, the migrants who came to Guangdong from other provinces, and the migrants within

**Table 5** Demographic Characteristics of Guangdong’s Population, Migrants, and Population Registered Elsewhere

	Population (%)		In-Migrants (%)		Population Registered Elsewhere (%)	
	Men	Women	Men	Women	Men	Women
Junior high or above	46.69	29.75	74.50	63.37	70.20	60.33
Age 15–29	29.89	30.43	—	—	61.18	75.28
Marital status <sup>a</sup>						
Single	34.62	25.18	60.28	59.53	56.38	64.91
Married	61.84	64.01	38.91	38.59	42.68	32.60
Labor force participation	57.18	49.79	80.32	78.64	83.72	78.09
Labor force by sector <sup>b</sup>						
Agriculture	58.00	63.55	—	—	10.44	13.39
Industry	16.22	22.79	—	—	48.33	71.18
Construction	5.06	0.58	—	—	18.57	1.34
Transportation	7.35	5.91	—	—	12.54	7.95
Labor force by occupation <sup>c</sup>						
Agricultural laborers	57.50	63.40	9.21	17.38	10.27	13.32
Industrial production and transportation workers	22.49	21.65	61.07	62.12	66.11	69.77

Sources: GDPPCO (1992a); SSB (1993b).

<sup>a</sup>This table reports selected categories of marital status (of a total of 4 categories), labor force sector (of a total of 13 categories), and occupational status (of a total of 8 categories).

Guangdong, are primarily economic migrants. Second, Guangdong as a destination for migration is perceived to be offering ample and attractive employment opportunities.

Table 5 reports selected demographic characteristics of Guangdong's population, migrants, and PRE. The junior high or above proportions indicate that migrants and PRE were more highly educated than Guangdong's population as a whole, and that the difference was as large for women as it was for men. PRE and Guangdong's populations also differ drastically in their age distribution: the former was dominated by the 15-29 group, which accounted for 61.18% of men and 75.28% of women in the PRE, while the percentages for Guangdong's population were much lower (29.89% and 30.43%, respectively). Related to the young age structure of the PRE is a high propensity to be single rather than married, which also describes the migrant population. The majority of Guangdong's population, on the other hand, were married. PRE's young age structure also contributed to high rates of labor force participation, with 83.72% of men and 78.09% of women in the labor force. Migrants had similarly high labor force participation rates. Guangdong's population, on the other hand, had only 57.18% men and 49.79% women in the labor force.

Within the labor force, the contrast between Guangdong's population and PRE is striking. The majority of Guangdong's labor force is engaged in agriculture; in the PRE labor force, on the other hand, industry absorbed 48.37% and 71.18% of men and women, respectively. These statistics again confirm the observation that migrants, especially women, came to or moved within Guangdong to search for economic opportunities in the growing industrial production that is led by foreign investment. Among PRE men, construction (18.57%) and transportation (12.54%) absorbed the most workers after industry. Both state and foreign investments in infrastructural development explain such sectoral patterns. The occupational status of migrants and PRE again contrasts with that of Guangdong's population. The majority of men and women migrants and PRE were industrial production and transportation workers, while the majority of Guangdong's population were agricultural laborers. Compared with China's migrants as a whole,

Guangdong's migrants and PRE were underrepresented in most occupational categories other than industrial production and transportation (GDPPCO 1992a; SSB 1993b). For example, 10.95% of China's migrants were professionals, but only 6.41% of Guangdong's migrants and 2.50% of its PRE were in that occupational category (statistics not reported in Table 5). This further underscores the occupational concentration of Guangdong's migrants.

These statistics illustrate that in China, like everywhere else in the world, migration is selective. Educated adolescents and young adults have greater propensities to migrate to and within Guangdong. Their young age structure, and perhaps also the disruption due to migration, have rendered the majority of them single rather than married. They are in great demand in, and were primarily drawn to, the industrial production and infrastructural development of Guangdong, especially in its open zones. Women, in particular, are attracted to a production system that is highly labor-intensive and that is continuously seeking out laborers who are young, diligent, capable of doing delicate work, and willing to work in production positions that afford low wages and poor working and housing conditions (Yang 1995).

## Conclusion and Discussion

Results of the empirical analysis support the main hypothesis extracted from the general conclusions of the LFR and Todaro models: differentials in economic opportunities are an important factor of internal migration in China. The case study of Guangdong suggests that it was a major magnet for migrants because it had rapid economic growth *and* because it has received large amounts of foreign investment that created and promised to create plenty of new jobs, suggesting that both existing and expected economic opportunities are at work. Within Guangdong, the most attractive destinations were areas with higher levels of economic development and good records of foreign investment, that is, open zones in the Pearl River Delta and in particular Shenzhen and Zhuhai SEZs.

These findings suggest that post-Mao migrants have indeed responded to the new push and pull forces produced by the economic re-

form. The growing rural labor surplus, generated by increased agricultural productivity, needs to find new jobs. The towns, cities, and provinces that have experienced rapid economic growth and that have received significant amounts of foreign investment offer a demand pull for labor. When government restrictions on migration were relaxed, the economic motive quickly became an important determinant of migration patterns. The migrants who responded to the push and pull are a selected group of the population, including young men and women who have greater propensities to move and who are in high demand in the production system of China's growing urban and industrial sector.

While this paper has highlighted the economic motive, it is but one of the prominent determinants of migration in China. At least two other factors continue to play an important role in determining the magnitude and pattern of migration. First, Chinese migrants are still subject to government constraints and intervention. Local governments, for example, may have specific policies to encourage or deter in-migration. A comparison of Guangdong with other provinces may shed some light on the role of institutional factors in migration. Second, traditional culture and values continue to provide an important explanation for the desire, or lack of it, to migrate (Li and Li 1995). Models of migration that are driven only by economic factors, therefore, cannot fully explain the story of migration in China.

Several other issues related to migration also require more attention by researchers. Todaro's models explain the coexistence of unemployment in urban areas and continuing large rural-urban migration. While there have been few studies and little data on unemployment in China, the existence of "blind flows" (*mang-liu*)—the vagrant population who are poor and unemployed and who drifted into large cities or coastal open zones in anticipation of employment (Wakabayashi 1990)—is a warning of the potential imbalance between in-migration and job opportunities in urban areas. Migrants exert pressure on the urban infrastructure and housing. There is evidence that an informal sector of the economy and temporary housing structures are emerging in some Chinese cities (Zhan 1989; Nolan 1993). Future studies should determine whether Chi-

nese cities would conform to the developmental model shared by so many developing countries experiencing large rural-urban migration, or whether government intervention in China would bring about a new model of development. Having seen the problems associated with rural-urban migration in other developing countries, Chinese policy makers will have to decide between continuing the present relaxed migration policy and resorting to more restrictions.

In Guangdong, migrants are concentrated in production occupations rather than in professional positions. In the Pearl River Delta, many migrants work in construction, transportation, or the garment and petrochemical industries, have harsh working conditions and poor housing accommodations, are from a different province, and speak a different dialect (Yang 1995). Their segregation from the natives signals the emergence of a new social structure and tensions between social groups. Migrants are often blamed for crime and other ills in the Chinese city (Li, T. 1994; *People's Daily* 1994b). The relationship between migration and social segmentation will likely be an important issue in China and needs to be further researched.

Theories of uneven development interpret migration from the periphery to the core as a backwash effect that will further widen the existing development gap between them. The donor areas are losing the relatively young, able, and educated, while the host areas benefit from the influx of labor. For example, migration to the Pearl River Delta may have already led to a "brain drain" (*People's Daily* 1994a). Both the LFR and Todaro models predict that in the host areas, the supply of migrant labor will keep wages low and will in turn generate more profits and increase capital accumulation. The profits may be reinvested in labor-intensive sectors, thus creating more jobs, as predicted by the LFR model. On the other hand, manufacturers may invest the money in labor-saving capital equipment and technologies, rendering existing and future migrant labor vulnerable to unemployment, as predicted by Todaro. Regardless of which of these two scenarios may prevail in China, migration is both a cause for and a consequence of regional economic growth. This paper has shown that recent changes in China's regional development



have generated powerful forces for internal migration. Further studies are needed to investigate the reciprocal impacts of migration on regional economic growth. ■

## Notes

<sup>1</sup>Those having nonagricultural registration are entitled to various supplies and benefits from the state, including food, employment, and housing; those having agricultural registration do not enjoy these benefits. The distinction between these two types of registration is therefore a means for allocating state resources rather than an occupational classification, although the majority of the "agricultural population" do engage directly in agricultural work.

<sup>2</sup>These migrants are called "households with self-supplied grain" of *zili kouliang hu* and may be given temporary or permanent residence in urban areas.

<sup>3</sup>Because of data limitations, Tibet is omitted from the analysis in this paper.

<sup>4</sup>In this paper, the calculation of migration rate is with respect to the entire population rather than to the population five years and older, in order to be consistent with the rate calculation for PRE, which includes all ages.

<sup>5</sup>All economic figures cited have been converted into 1990 prices. Temporal comparison of statistics entailed aggregation of Guangdong and Hainan since the latter did not become a separate administrative unit and province until 1988. Provincial economic data were extracted from and computed based on SSB (1990) and SSB (1985-1991).

<sup>6</sup>County-level administrative units include counties, cities, and city-probers of prefecture-level cities.

<sup>7</sup>Counties are generally considered rural areas, while towns and cities refer to more urban areas. The definitions and types of towns and cities are complex and have changed many times (Chan 1994; Hsu 1994; Wu 1994).

<sup>8</sup>Marriage, family moves, and living with relatives and friends may also have implications for the economic well-being of Chinese women. For example, "marrying out" from a poor village to a city may in itself be a significant economic betterment for a woman.

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