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The China Population and Labor Yearbook, Volume 1

The Approaching Lewis Turning Point and
Its Policy Implications

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INTRODUCTION

POPULATION, MIGRATION, AND THE LEWIS TURNING POINT IN CHINA

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I. *Introduction*

The supply of abundant cheap labor from the rural areas to the industrial sector has long been a key source of China's high economic growth in the last 30 years. The story of global success of "Made in China" in the late 1990s and early years of the new century is inextricably meshed with the story of migrant workers toiling for subsistence wages to produce for exports.¹ Rural migrant labor had become the backbone of China's manufacturing by the mid-1990s. In export-oriented cities such as Shenzhen and Dongguan, migrant labor easily accounted for the great majority (70 to 80 percent) of the laborforce in the early years of the new century.² Even for a more typical city, like the inland city of Wuhan, migrant workers (those without local *hukou*) accounted for 43 percent of the employment in manufacturing in 2000.³ Rural migrant labor's work contribution was also estimated at about 30 and 31 percent of GDP in Beijing and Shanghai in 2007, respectively.⁴

Despite the major role migrant labor has played in China's recent economic miracle, a clear picture of migration volumes, etc remains murky to many observers and analysts, partly because migration measurements

¹ E.g. Alwyn Scott, "Bridging two worlds: a new life for Susie Cheng," *Seattle Times*, July 9, 2006, A1.

² Zai Liang, "Foreign Investment, Economic Growth, and Temporary Migration: The Case of Shenzhen Special Economic Zone, China," *Development and Society*, 28, 1:115-137, 1999. Kam Wing Chan, "Misconceptions and Complexities in the Study of China's Cities: Definitions, Statistics, and Implications," *Eurasian Geography and Economics*, 48, 4, (2007), p. 397.

³ Based on microdata from the 2000 Census for Wuhan.

⁴ "Nongmingong shiye diaocha (Survey of Unemployment of Rural Migrant Labor)," *Caijing*, No. 229, January 19, 2009 [<http://www.caijing.com.cn/>], accessed on January 20, 2009.

and trends in China continue to be plagued by problems in interpreting statistics and key data over time.⁵ Understandably, migration by nature is harder to measure, but the underlying concepts China uses to define migration flows are different from those commonly used in other countries.⁶ As will be explained in the following sections, the analysis of Chinese migration is further complicated by the particular institutional arrangements and systems of population and migration management, and of statistical reporting.⁷ The central role played by the *hukou* (household registration) system in the process of “creating” rural migrant labor and hence, the statistics pertaining to it, are often quite confusing, to say the least. The difficulties in studying migration in China have led some United Nations researchers,⁸ for example, to call the Chinese “floating population,” the largest group of internal migrants in China, “statistically invisible.” Others, such as Roberts,⁹ find it hard to detect these “invisible residents” often in the Chinese data.¹⁰ Such problems may limit our ability to perform any reasonable quantitative analysis of China’s industrialization, urbanization, and many related issues, such as the heatedly debated “Lewis turning point.”¹¹

This volume is a collection of essays, focusing mainly on the interaction of demography and economy, and especially the role of internal migrant labor in that process. To provide a background for the remaining chapters, this introduction furnishes a brief account of migration

⁵ Zai Liang and Zhongdong Ma (2004), “China’s floating population: new evidence from the 2000 census,” *Population Development Review*, Vol. 30, No. 3, pp. 467–488. Thomas Scharping, “Hide-and-seek China’s elusive population data,” *China Economic Review*, 12(4): 323–332, 2001.

⁶ This is not unique to migration. Similar problems occur in employment and urban statistics. See Cai Fang, “The Consistency of China’s Statistics on Employment,” *The Chinese Economy*, 37(5):74–89, (2004). Chan, “Misconceptions and Complexities in the Study of China’s Cities.”

⁷ Chan, “Misconceptions and Complexities.”

⁸ United Nations Development Programme, *China Human Development Report 1999: Transition and the State*, [<http://www.undp.org.cn/downloads/nhdr/nhdr1999.pdf>]. (1999).

⁹ Kenneth D. Roberts, “Female Labor Migrants to Shanghai: Temporary ‘Floaters’ or Settlers?” *International Migration Review*, Vol. 36, No. 2, pp. 492–519.

¹⁰ See, for instance, amidst the voluminous data in the 29 tables under the Population and Labor Section in *Shanghai Statistical Yearbook 2006* (at <http://www.stats-sh.gov.cn/2004shhj/tjnj/tjnj2006.htm#>), only one rather obscure column is devoted to reporting the numbers of “outside population” (in Table 3.3), although the city is obviously a major destination of migrants in the country.

¹¹ See Stephen Green, “On the World’s Factory Floor: How China’s Workers are Changing China and the Global Economy,” *Standard Chartered Special Report*, January 14, 2008.

and migrant labor statistics and their recent trends. This essay can also be used a statistical guide to China's major internal migration statistics. The first part of this essay addresses the data issues and examines the trends and patterns. The second part introduces the fourteen articles in this volume. In the last section, I will discuss the main points of this volume, especially those related to the "Lewis turning point."

II. *Definitions of Migrants and Rural Migrant Labor*

Any meaningful analysis of internal migration in China must begin by understanding the *hukou* system and its relationship to migration. As is now well known, migration in China is highly regulated. People seeking to change residence permanently or formally are required to obtain approval for *hukou* change from the local authorities.¹² For urban residents, changing *hukou* residence *within* the same city or town (i.e. "moving" the *hukou* to a new address in the same town) is generally permitted. The same goes for rural residents moving *within* rural areas along with their *hukou* because of marriage or other family reasons. However, formal (or "permanent") moves—meaning those involving a *hukou* change—crossing city, town, and township boundaries are strictly regulated and require approval by the public security authorities. The approval is granted scarcely and only when there are good reasons for the proposed move, and if the move serves (or at least is not at odds with) the central or local state interests and policies.¹³ Generally speaking, it is very difficult for an ordinary person to change *hukou* from rural to urban areas, or from smaller cities to larger cities.¹⁴ The *hukou* system in the pre-reform era functioned as a *de facto* internal passport system to prevent rural exodus and an "entitlement" mechanism to limit most state-provided social goods to the urban residents. Today, the system has morphed to becoming as an entitlement distribution mechanism rather than stopping migration. In other words, rural migrants are allowed to move to and work in cities (under the "temporary residents"

¹² Kam Wing Chan and Li Zhang, "The *Hukou* System and Rural urban Migration: Processes and Changes," *The China Quarterly*, 160:818–855, 1999.

¹³ In the past, state labor recruitment and expropriation of farmland were major drivers of *hukou* change (Ibid.). Currently, the *hukou* is also used as a "stimulus" tool to revive the declining urban housing market.

¹⁴ Fei-ling Wang, *Organizing Through Division and Exclusion*. Stanford: Stanford University Press, 2005.

category), but they cannot have a *hukou* in the destination where they stay. Therefore, these migrants are ineligible for many benefits and rights, such as local social benefits, which ordinary local urban residents qualify for automatically.

More generally, two categories of migrants can thus be defined:

- a. Migration with “local” residency rights (*bendi hukou*) (hereafter, *hukou* migration). This is usually open only to a very select group (currently, the rich or the highly educated);¹⁵
- b. Migration without *hukou* residency rights (non-*hukou* migration).

In China, officially only *hukou* migration is considered *qianyi* (“migration”). Other types of moves are considered *renkou liudong* (population movements or “floating” population), implying a “temporary” move to a destination where the person is not supposed to (and is legally not entitled to) stay permanently. In the official statistics, persons in this category are classified as “temporary” movers, despite the fact that many non-*hukou* migrants may or may have been at the destination for years. *Hukou* migrants, on the other hand, are considered *de jure*, permanent residents and have the same legal status of the residents in the destination. *Hukou* migrants are eligible for the same array of social benefits and rights other local residents have. From the local government’s point of view, the *hukou* and non-*hukou* distinction is the most important as each entails very different fiscal and administrative responsibilities. Until recently, China’s main source of annual population statistics—generated by its *hukou* system—reported basically only the *hukou* (*de jure*) population. In recent years, statistics of the non-*hukou* population who are registered as “temporary residents” are also reported. In addition, in the last 25 years or so, researchers and statistical agencies also collected information on *hukou* and non-*hukou* migrants on a *de facto* basis through various sample surveys and population censuses. However, the large number of people moving internally as well as the circulatory and temporary nature of some of these flows in China enormously complicates the efforts to measure the movement accurately and to address its many implications.

¹⁵ Kam Wing Chan and Will Buckingham, “Is China Abolishing the *Hukou* System?” *The China Quarterly*, No. 195, pp. 582–606 (2008).

Table 1 presents an overview of the internal migration statistics at the national level in China based on data from different sources. Some of these data were collected at the destination; others at the origin (mainly villages). Despite the diversity and the varying quality of these data sets, when analyzed side by side, they show some notable consistencies, as explained next.

Hukou Migrant Series (A): This series refers to *hukou* migrants and is the only “flow” data series presented in Table 1. The figures refer to the number of in-migrants who are formally granted *hukou* status in the destination (city, town and township) each year. These *hukou* migration figures are drawn directly from statistics published by the Ministry of Public Security (MPS) annually. They represent the total number of all types officially approved changes in *hukou* (residence) within a particular year, from townships to cities; from cities to cities; from townships to townships, etc., excluding moves *within* cities, towns and *within* townships.

Non-*Hukou* Population Series (Series B-G): This series refers to the *liudong renkou* (“floating population” of “mobile population”), defined as the people staying in an administrative unit (usually city, town, street, or township) other than their place of *hukou* registration. The “floating population” is not the *de jure* population, which leads to huge discrepancies between the *de facto* and the *de jure* population counts in some cities, such as Shenzhen.¹⁶ Unlike the flow (*hukou*) migration data of Series A, the non-*hukou* population series presented in Table 1 refer to migrant “stock” figures; i.e., the number of non-*hukou* migrants who reside in a certain locale at a given point in time. Owing to the different purposes, coverage, and criteria used in defining the geographic boundary and the minimum duration of stay, the numbers for the floating population in each series may be quite different even for the same year.

Series B: This series refers to the broadest and most widely used definition of the floating population, which includes anyone without local *hukou* staying in the destination, regardless the length of the stay in a place. The stay can be just as short as one night or for several years. As such, this series covers a very diverse group of people, such as tourists, people on business trips, traders, sojourners, and peasant migrants, both employed and unemployed. These numbers, reported

¹⁶ Kam Wing Chan, “Measuring the Urban Millions,” *China Economic Quarterly*, March 2009, pp. 21–26.

in the media, vary significantly, reflecting the rather unsystematic nature of this series. Some of the national figures are simply educated guesses, others are extrapolations made from sample surveys and rail passenger volume figures, and/or other more reliable series such as Series C-E. Table 1 presents some of the typical figures reported in the Chinese newspapers at certain points in time. Given their nature, such figures should be treated basically as rough and imprecise indicators of trends.

Series C: Unlike the preceding series, this is a systematic series of “floating population” based on actual counts and a narrower definition. They are made available by the Ministry of Public Security from 1997. By law, anyone staying in places other than his/her place of household registration for three days or more is required to register with the police and apply for a *zanzhu zheng* (“temporary resident permit”). Consequently, this group is also categorized as “temporary population” (*zanzhu renkou*) by the police authorities. A large number of floaters fail to comply with this requirement; this helps to explain part of the large discrepancies between Series B and C. Probably because of the floaters’ lack of official residence status in the destination and the logistical difficulties in tracking these people, there was no attempt made to count the floaters in the whole country until the 2000 Census.

Series D and E: These two series stem from one series published by the National Bureau of Statistics (NBS) that experienced some changes in definitions and coverage over time. The population is defined first on a *de jure* and then on a *de facto* basis. The *de facto* definition stipulates a far longer minimum residence requirement (6 months or one year) than in Series B and C. Therefore, Series D and E will show a smaller population than Series B even if the geographic boundaries in defining migration are the same. The NBS still calls this group *liudong renkou* (floating population). Elsewhere, it is termed “temporary population” or “temporary residents” by many researchers,¹⁷ although many in this group’s stays are not necessarily “temporary” at all. However, it is true that the most temporary, such as tourists, and shorter-term migrant workers, are excluded. NBS has correctly treated this group as part of the *changzhu* population (“regular residents”) in statistical terms in its various recent reports. The data for Series D and E are drawn from national censuses (1982, 1990 and 2000), the “mini-censuses” (1%

¹⁷ E.g. Yang Yunyan, “Temporary residents” in China: Causes and Characteristics. *Chinese Environment and Development*, Vol. 7, No. 1 and 2, pp. 103–117 (1996).

National Population Sample Surveys) of 1987, 1995 and 2005, and annual sample surveys from 1996 onwards conducted by the NBS at the place of destination. The numbers in Series D are larger than those in E even for the same year (such as in 1995) because D is based on smaller geographic units. The numbers in series D are larger because the population counts of this group are defined on migration across smaller geographical/administrative units.

Series F and G: This series refers to a specific group of migrants, generally known as “rural migrant labor” (*mingong*), which is the largest constituent group of the “floating population.” This group includes only the working population from the countryside which is living without local *hukou* in the destination.¹⁸ The figures are collected from sample surveys conducted in the rural areas. The majority of rural migrant laborers are unskilled or low-skilled workers. Some of these rural migrants are seasonal and are therefore prone to move between the city and the countryside 2–3 times in one year. After the size of rural migrant laborers started to grow in the early 1990s, many large-scale national surveys of rural migrant labor have been conducted. However, many of these surveys were only conducted once, and are often not totally comparable among each other. The two series selected for Table 1 are either compiled from an established rural migration authority, or from an annual national sample survey conducted by the Ministry of Agriculture based on relatively consistent definitions of migrants and geographical boundaries over time. The national rural migrant labor estimates are generally derived from the percentages of *mingong* generated from these sample surveys. The sample used by the Ministry of Agriculture covers about 300 villages and 7,000 households and the definition used is very close to the general concept of “*mingong*.” By this definition (Series G), there were about 100–115 million rural migrant laborers living in cities and non-cities in the country in the early twenty-first century. This series covers a longer time span (1992–2006) with greater internal consistency than other series. The latest (2008) figure of rural migrant labor (presumably based on a very similar definition), drawn from China’s second Census of Agriculture, is 132 million.¹⁹

¹⁸ A broader definition of “rural migrant labor,” which is not used here, includes also those who work in township and village enterprises within the same township.

¹⁹ Yu Xuejun, “Tuidong renkou liudong fuwu he guanli tizhi chuangxin cujin chengxiang kexue fazhan” (Promote institutional innovations in the service and management system of the floating population and scientific development of the rural and urban sectors), Paper presented at the Forum on Reform and Population Development,

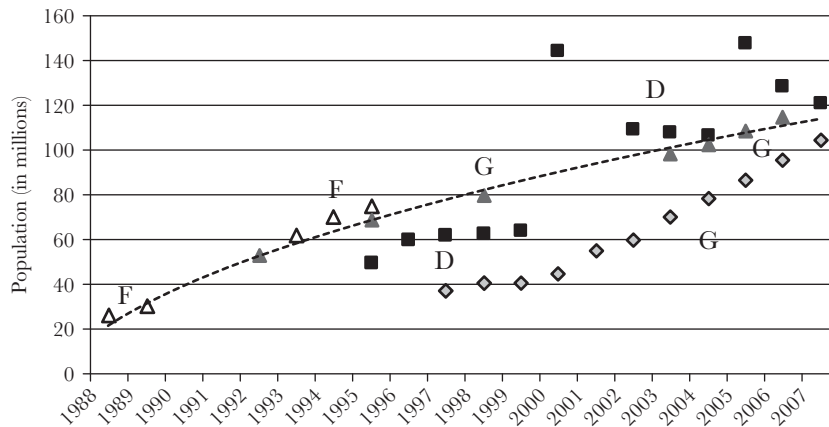
III. *Migration Trends Since the Early 1980s*

Based on the figures presented in Table 1, one can identify some general migration trends: Despite the general increase in the number of migrants in the country over the last quarter century, the annual number of *hukou* migrants recorded by the Ministry of Public Security remained stable, between 17 and 21 million people in that period. In fact, the *hukou* migration rate has declined slightly, relative to the size of the Chinese population. An analysis of the detailed MPS *hukou* figures shows that between 80 and 90 per cent of all *hukou* migrants since 1993 were recorded in urban areas. The stability of the number of *hukou* migrants and of the percent in urban areas reflects strong government intervention in area of *hukou* migration across city, town and township boundaries, through mechanisms such as a quota control.

On the other hand, as shown in Table 1, the non-*hukou* migrant population has been growing since the early 1980s. Based on Series B, for instance, the floating population started to grow rapidly in the mid-1980s to about 70 million people in 1988, then dropped in 1989–1991 due to an economic austerity programme, which affected many of the destination areas, but migration regained momentum from 1992 to 1997, reaching 100 million people by 1997. The 2006 figure is widely believed to be close to 200 million. Similarly, during 1992–2006, the size of the rural migrant labor more than doubled from 53 million people to 115 million people (Series G). The general upward trends are also obvious in Figure 1, which plots four series of non-*hukou* population statistics. It is also useful to note that the two rural migrant labor series (F and G) merge well to display a continuous upward trend in 1988–2006. Generally, the numbers and trends for the 1990s are consistent with other studies.²⁰ The One Per Cent National Population Survey in 2005 recorded 147.4 million people identified as

Beijing, China, October 23, 2008, http://www.china.com.cn/zhibo/2008-10/23/content_16647215.htm. Accessed on October 23, 2008.

²⁰ Yang Yunyan, "Temporary residents." Yang Yunyan, "New features of population migration in the 1990s in China," *Nanfang renkou* (Southern Population), No. 75, pp. 13–20 (2004). Zhao Shukai, "The Mobility of Rural Migrants: New Stage and New Issues." In *1998: Analysis and Forecast of the Social Situation of China* (in Chinese), State Council, Development Research Center. Beijing: Shehui kexue wenxian chubanshe, pp. 76–89 (1998). Scott Rozelle, Li Guo, Minggao Shen, Amelia Hughart, John Giles, "Leaving China's Farms: Survey Results of New Paths and Remaining Hurdles to Rural Migration," *The China Quarterly*, No. 158, pp. 367–393 (1999).



Source: Table 1

Notes: The letters “C,” “D,” “F,” and “G” refer to the respective Series in Table 1. “C” and “D” are “temporary migration” figures; “F” and “G” are “rural migrant labor.”

Figure 1: Trends of Non-*Hukou* Migration, 1988–2007: Selected Statistics

“floating population” (Series D), and slightly more than half of them (86.7 million) were registered with the police in Series C.

However, the trend depicted by Series D is much less smooth and it shows some notable swings: two data points, 2000 and 2005, appear to be quite “out of the line” (far larger than the other years’ figures), given what statistics in other series have shown.²¹ Another careful examination of the data shows a slow growth in the number of migrants in the second half of the 1990s. This is seen in the D and C series. This slowdown was likely caused by smaller rural outflows related to: (1) the slow-down in the urban economy in this period, (2) job competition from laid-off workers of urban state-owned enterprises, (3)

²¹ One would assume that the accuracy of 2000 and 2005 figures are higher than the rest of the series because they are from either a full census (2000) or a 1-per cent national sample (2005) while the rest is from annual 1-per-1000 sample surveys. However, my earlier research suggests that there are good reasons to believe that the 2000 Census (similarly, the 2005 “mini-census”) may have overcounted the size of migrants while the regular, annual 1-per-1000 survey may have erred in the opposite direction (undercounting the migrant population) (see Kam Wing Chan, “Chinese Census 2000: New Opportunities and Challenges,” *The China Review*, Vol. 3, No. 2, pp. 1–12 (2003)). Given the above possibilities, a reasonable guess would be to put the true migration figures (Series D) somewhere in between those two sets of numbers. For example, one can reason that the figure in 2005 and 2006 for D would be between 130 and 150 million.

increasingly protectionist policies used by local governments against recruitment of outsiders, and (4) improvement in the rural economy, at least between 1996 and 1999.²² The slow migration growth in the second half of the 1990s also corresponds to the general rural-urban migration trends identified by Chan and Hu, and Cai²³ (2002, p. 70), because rural-urban migration made up a large proportion of the rural migrant labor flows in the 1990s. In the early years of the 21st century, demand for migrant labor resumed at a high level, especially after 2001 after China's accession to the WTO. Available data in Table 1 show that the annual average growth of the rural migrant labor in 2003–2006 grew to 5.6 million, compared to the annual average of 4.4 million for 1992–2006. In 2004, shortages of migrant labor were reported in the Pearl River Delta which had far higher high rates.²⁴ The size of rural migration labor reached 120–130 million in 2006, as pointed out before. Global financial events since the summer of 2008, however, have drastically altered the economic landscape of the Chinese export industry, where most migrant labor is employed. I will return to this topic in the last section.

The above provides a historical, as well as statistical, background to the articles to follow, which focus largely on the last ten years or so.

IV. *Articles in This Volume*

Fourteen essays are included for this inaugural English edition of the *The China Population and Labor Yearbook* are basically drawn from the Chinese annual “Green Book” of population and labor of the last two years prepared by the Institute of Population and Labor Economics of CASS, under the directorship of Prof. Cai Fang, an eminent Chi-

²² Zhao Shukai, “The Mobility of Rural Migrants.” Cai Fang and Kam Wing Chan, “The political economy of urban protectionist employment policies in China,” *Working Paper Series No.2*, Chinese Academy of Social Sciences, Institute of Population Studies (2000).

²³ Kam Wing Chan and Ying Hu, “Urbanization in China in the 1990s: new definition, different series, and revised trends,” *The China Review*, Vol. 3, No. 2, pp. 49–71 (2003). Cai Fang, *2002 nian: Zhongguo renkou yu laodong wenti baogao (2002: Report of China's Population and Labour)*, Beijing: Shehui kexue wenxian chubanshe (2002), p. 70.

²⁴ The average growth rate of rural migrant labor was about 5.4% in 2003–2006 nationwide while in Dongguan in the Pearl River Delta, this rate reached 18% per year in 2000–2004. Data are from Dongguan Statistical Bureau, see <http://tjj.dg.gov.cn/website/web/zhctjnj/2005TJNJ/02/sheet004.htm>.

nese economist with an international reputation. The essays represent some of the cutting-edge work by a group of active scholars in the population and labor economics fields in the Institute and their colleagues in other top research and policy institutes in China. Many of the essays are based on careful analysis of data from large nationwide systematic survey conducted in recent years, and they often examine some of current major population and employment issues in China's development.

The main focus of this volume is on recent developments in the demographic transition in China and its implications, especially for the labor market. The chapters in this collection are organized in a logical sequence to tell an important demographic story that has significant current policy and theoretical relevance. The pace of demographic and economic changes in the last 30–40 years in China was so rapid that what went through in the country is equivalent to what had taken many Western countries in the past a century or more to accomplish. Therefore, China allows us to observe, even within a time window slightly more than a generation, often the complete processes of many economic and demographic transformations.

Setting the context, Chapter 1 provides a broad survey of China's demographic dynamics.²⁵ Chapters 2 and 3 then look at the rapid demographic transition in China and its main effects on reducing the supply of labor and increasing the elderly population in the country. The following chapters examine the relationship of demographic change, industrialization, migrant labor, and, more generally, economic growth. Chapter 4 analyzes the population dependency ratios in the post-1949 era, linking the declines in the ratios in the 1980s and 1990s to the increased labor supply and saving rate, which provided a useful “demographic dividend” to China's economic growth in those two decades. Chapter 5 examines how progress in labor market development helped China deal with the urban unemployment problem in the late 1990s, partly triggered by the East Asian financial crisis.

²⁵ For a different account of China's urbanization and urban systems from what is presented in Chapter 1, see Kam Wing Chan, Vernon Henderson, and Kai Yuen Tsui, “Spatial Dimensions of Chinese Economic Development,” in Loren Brandt and Thomas Rawski, eds., *China's Great Transformation: Origins, Mechanisms, and Consequences of the Post-Reform Economic Boom*. Cambridge, UK: Cambridge University Press, (2008), 776–828.

In Chapters 6 and 7 then, Cai Fang and Wang Meiyuan, two of the main contributors to this volume, through a survey of general economic growth patterns, develop the arguments that China, in the early years of the 21st century, had reached the beginning stage of the “Lewis turning point.” This “turning point” is named after economist Arthur Lewis, a Nobel laureate, who is well known for his unlimited labor surplus thesis of development in a typical dual sector (rural and urban) framework.²⁶ His dual-sector model is relevant to China’s industrialization and urbanization and has been used widely.²⁷ According to him, developing countries’ industrial wages begin to rise quickly at some critical point when the supply of surplus labor from the rural areas tapers off. This shifts the economy from one with labor surpluses to one of labor shortages. This will bring pressures for increasing wages for the unskilled migrant labor (as it has happened in China in 2004–07) and has important implications for national development strategy and related policies. The later set of issues is picked up and explored in greater depth by Du Yang and his collaborators in Chapter 10, and especially in Chapter 11, where the impact on labor protection and legislation is examined.

Chapters 8, 9, and 12 contain some very interesting research findings especially about rural migrant labor, the “protagonist” in the drama of recent industrialization and urbanization. Han Jun *et al.* in Chapter 8 paints a complex picture of coexistence of labor exhaustion and surpluses in the rural sector, an important point to which I will return later. Wang Meiyuan in Chapter 9 reports, based on data from two large surveys in 2001 and 2005, that problem of wage arrears of migrant workers, which gained prominent media coverage in 2003, had decreased to a level of very little significance, indicating the success of vigorous government campaigns in tackling this problem. At the same time, Wang’s detailed econometric studies also show that the discrimination of migrant workers in the urban labor market, as indicated by the earnings differentials after controlling for other measurable factors, remain huge and unchanged over time, despite the various *hukou* reforms

²⁶ W. A. Lewis, “Economic Development with Unlimited Supplies of Labor,” *The Manchester School of Economic and Social Studies*, 22, 1954, pp. 139–191.

²⁷ See, for example, Kam Wing Chan, *Cities with Invisible Walls: Reinterpreting Urbanization in Post-1949 China*, Oxford University Press, (1994). Cai Fang, *Zhongguo liudong renkou wenti* (Question on China’s Floating Population), Beijing, China: Shehui kexue wenxian chubanshe, (2007), especially Chapter 2. Green, “On the World’s Factory Floor.”

in recent years. Her findings support some more general observations recently made by Chan and Buckingham.²⁸ In Chapter 12, she studies, based on the same survey data, the return to education for migrant workers and urban workers. The results are interesting and have very direct policy applicability.

Revolving around the theme of labor shortages, the last two chapters (13 and 14), examine more broadly China's industrialization strategies and the need to build a new path, especially in the wider context of expansion of trade and globalization. They argue for the need for developing an integrated rural and urban labor market, including more daring institutional reforms of the *hukou* system and more legislation to protect migrant workers. A shift in China's industrialization strategy, from one that is based on cheap labor to one that emphasizes increased labor productivity, is also recommended by the authors.

V. Discussion

The themes in the collection are China's lower population growth rates, aging demographics, decreasing supply of labor and, most importantly, shortages of rural labor supply for the urban sector. The last point means that after many years of low population growth, China has finally reached the beginning stage of the Lewis turning point: there is no longer rural labor surplus in the economy. This is a significant, perhaps bold, proposition, most prominently argued by Cai Fang.²⁹ It was widely reported and analyzed in this volume that that employers were forced to raise workers' wages in the face of a "*mingong huang*" (dearth of rural migrant labor) in Guangdong and other coastal provinces in 2004 and 2005.³⁰ This can be read as the triumph of the labor market in improving migrant labor's conditions, an important step in gradually integrating the rural-urban dual labor markets. The arrival of this turning point, if it were true, is of great significance to the Chinese economy and, more broadly, to China as a whole as it signifies the beginning of an

²⁸ Chan and Buckingham, "Abolishing *Hukou* System?"

²⁹ See, especially, Cai Fang, "A Turning Point for China and Challenges for Further Development and Reform" (in Chinese), *Zhongguo shehui kexue (Social Sciences in China)*, 2007, No. 3, pp. 4–12.

³⁰ Peter Goodman (*The Washington Post*), "Factory Labor Runs Short in China," printed in *Seattle Times*, September 26, 2004, A13.

important process to end the inefficient dual economy and infamous “dual society” premised on rural and urban segmentation. Both dualities have beleaguered the country for the last half century and are a major obstacle on China’s path to a single labor market, and finally, a single unified society (*yiyuan shehui*) of a first-world nation.³¹ This turning point, therefore, is a major signpost of social and economic progress, and it can indicate more balanced inter-sectoral growth in the years to come, following Ranis’ arguments.³² Given that China is the “world’s factory” because of its super-low labor cost,³³ such a turning point will surely have significant global repercussions: it may trigger momentous shifts in the different tiers of economies in the world, based mainly by comparative labor costs and productivities.³⁴

The proponents of the Lewis-turning-point hypothesis are credited for their bringing the attention to the forthcoming exhaustion of China’s cheap labor and the rise in the opportunity cost of migrant labor after a quarter century of rapid economic growth, and the need for China to shift the growth model from the extensive “wasteful” mode to a more intensive and sustainable one. The thesis is also controversial and has attracted a lot of attention and debates.³⁵ While this is not the place to systematically address this complex issue, I would like to contribute by drawing on my own recent research on the *hukou* system, and reviewing the latest developments in the Chinese economy in the midst of the current global economic crisis “made in the USA,” which, obviously, could not have been foreseen by other contributors in this volume. Seeing from the vantage point of early 2009, I will elucidate three points

³¹ Kam Wing Chan, “The Chinese *Hukou* System at 50,” *Eurasian Geography and Economics*, 50(2): 197–221, 2009.

³² Gustav Ranis, “Arthur Lewis’ Contribution to Development Thinking and Policy,” *Yale University Economic Growth Center Discussion Paper*, No. 891 (August), 2004.

³³ Anita Chan, “A ‘Race to the Bottom,’” *China Perspectives*, March–April 2003, at <http://chinaperspectives.revues.org/document259.html>, accessed on February 2, 2009.

³⁴ David Barboza, “Labor Shortages in China May Lead to Trade Shifts,” *New York Times*, April 3, 2006.

³⁵ For example, Green, “On the World’s Factory Floor”; “Fangang: Rural Migrant Labor Shortage is a Short-term Temporary Problem” (in Chinese), Sino.com, September 10, 2005, at <http://news.beelink.com.cn/20050910/1928546.shtml>, accessed on January 4, 2009. Xu Jingyong, “Same Roots: Prospecting ‘Mingong Waves’ and ‘Mingong Shortages,’” *Diaoyan shijie*, undated, pp. 14–17, 33. Wu Xuean, “It’s Too Early to Claim ‘Rural Migrant Labor Shortages,’” *Zhongguo Qingnian Bao*, October 19, 2004, at <http://www.people.com.cn/GB/shizheng/1026/2929562.html>, accessed on March 4, 2009.

beyond the typical (neoclassical) economic and demographic analysis contextualize the Lewisian process, as it has been unfolded in China.³⁶ I am not disputing the emergence of the labor “shortages,” which is predetermined in China’s recent rapidly aging population, but I would like to go behind them and highlight or foreground some, perhaps more fundamental, distinctive Chinese structural settings.

1) We have now learned that the Chinese export industry in the coastal region was seriously hit by the latest global economic downturn. Based on recent surveys, Chinese government has estimated that as many as 20 million migrant workers, or about 15.3 percent of this group, have lost their jobs.³⁷ It appears that the labor shortages beginning in 2004 have now evaporated as the world demand for Chinese exports dropped precipitously beginning last year, especially in the past few months. It is clear that the current major preoccupation of the government is to create and protect jobs.³⁸ This is quite a change from 2004, when the rapid and sustained surges in net exports in the years immediately following China’s entry to the WTO in 2001³⁹ generated super-charged growth in some areas (such as Dongguan) and created immediate labor supply bottlenecks in those areas. Those shortages should also be understood in the context of the narrow labor demographics typically demanded by the export industry, and other factors (examined in the next section).

In the more extreme case of Dongguan, where the most acute shortages seemed to have been reported, its economy grew annually at an average of about 20 percent per year between 1990 and 2005. The city doubled its demand for “outside labor” about every five years. Its breakneck growth raised the employment of migrant labor almost by

³⁶ These points are also mentioned or implicit in some of the chapters in this volume.

³⁷ Keith Bradsher, “China’s Unemployment Swells as Exports Falter,” *The New York Times*, February 6, 2009. “Action to Aid Ten Million Rural Migrant Workers” (in Chinese), China.com, February 27, 2009, accessed at http://webcast.china.com.cn/webcast/created/3139/44_1_0101_desc.htm, February 27, 2009. The “registered unemployment rate” for urban population (with local *hukou*) was 4.2 percent in February, 2009, see “Urban New Employment Dropped by Large Amount” (in Chinese), March 10, 2009, at http://lianghui.china.com.cn/2009lianghui/2009-03/10/content_17413922.htm, accessed on March 10, 2009.

³⁸ “Action to Aid Ten Million Rural Migrant Workers.”

³⁹ See C. Fred Bergsten, Charles Freeman, Nicholas R. Lardy and Derek J. Mitchell, *China’s Rise: Challenges and Opportunities*, pp. 105–136 (2008).

fourfold from 1.3 million in 1995 to 4.7 million in 2004.⁴⁰ One can easily imagine that this would create an extremely tight labor market and short-run supply problem then. But such a phenomenon could also be quite ephemeral. In the wake of several well-publicized product-quality scandals (related to toys and canned foods, for example), combined with rapid escalation of world prices of materials and fuels in 2007 and early 2008, the world demand for China-made products ebbed. More seriously, the export sector has been further hit hard by the global financial crisis beginning in late 2008. The labor supply situation was quickly reversed to a “surplus” condition. Preliminary data have shown that even in the Pearl River Delta, the main area of labor shortages in 2004 and 2005, out of the 10.3 million migrant workers arrived in early February, 2009, some 20 percent already could not find jobs.⁴¹ Wages of migrant workers have also dropped by 10 percent.⁴²

The fact that employment of rural migrant labor can be so easily reversed within 3–4 years underscores the brevity of the labor shortages and, more fundamentally, the vulnerability of China’s existing growth model by relying heavily on exports. Export industries like textiles and toys are inherently subject to enormous instability out of China’s control, and there are significant upturns and downturns of labor demand from time to time.

2) More fundamentally, the root cause of China’s huge rural labor surplus, of course, is demography and history: the accumulation of a super-large population over recent centuries over limited land resources developed unfavorably high man/land ratios that prevented unskilled agricultural labor markets to clear,⁴³ as in Lewis’ original thesis. On top of the abundance of rural labor, however, there is an important contemporary institutional addition that has aggravated the labor surplus condition over the last half century. This I refer to the institutional setup centered on the *hukou* system erected more than 50 years ago, as

⁴⁰ Data from Dongguan Statistical Bureau, see <http://tjj.dg.gov.cn/website/web/zhctjnj/2005TJNJ/02/sheet004.htm> and <http://tjj.dg.gov.cn/website/web/zhctjnj/2006ZY/sheet066.htm>.

⁴¹ “Firms Recruiting Dropped by 10–30%; Wages Decreased by 10%,” *Caijing*, February 9, 2009, at <http://www.caijing.com.cn/2009-02-09/110054227.html>, accessed February 11, 2009. “Two Million Rural Migrant Workers Blindly Flowed to Guangdong after Spring Festival,” *Nanfang Dushibao*, February 4, 2009, accessed at http://epaper.nddaily.com/A/html/2009-02/04/content_696961.htm.

⁴² *Ibid.*

⁴³ Kang Chao, *Man and Land in Chinese History*, Stanford University Press (1986).

part of the newly established command economy and rapid state-led industrialization strategy. Typical of the Soviet-type industrialization model, China's strategy was premised on the extraction of agriculture and concomitant immobilization of the rural labor.⁴⁴ The rural surplus population and labor built up over centuries were bottled up in the countryside; with rapid natural population growth, the demographic pressure on land had risen noticeably in first the three decades of the People's Republic. Such an institutional setup served to keep the opportunity costs of peasants (including their labor and land) very low.⁴⁵

In the reform era since 1979, the *hukou* system has functioned more as an instrument of discrimination against and exclusion of the rural labor than stopping it from going to the city.⁴⁶ The "cheap" peasant labor has been "freed," which has definitely helped relieve population pressure on land, but the labor is transferred to cities and export-processing zones under the condition of without local *hukou*—i.e. citizenship—in the destination. This prevents migrant laborers from moving upward socially or assimilating into the destination (urban) population; the institution confines them into a huge underclass of super-exploitable and low-cost labor, yet highly mobile or flexible (and expendable) industrial workers for China's new economy geared to global demands.⁴⁷ The "China price," mainly due to its ultra-low labor costs, was the lowest among major developing countries.⁴⁸ Many of these workers are vulnerable to exploitation and labor abuses. In other words, this state-created institution, the *hukou* system, also helps to sustain the ultra-low labor costs and effectively prolong the supply of low-cost "rural surplus labor." The system helps defer the arrival of

⁴⁴ Kam Wing Chan, "Economic Growth Strategy and Urbanization Policies in China, 1949–82," *International Journal of Urban and Regional Research*, 16, 2:275–305, 1992. Chan, "The Chinese *Hukou* System at 50.," Justin Yifu Lin, Fang Cai, Zhou Li, *The China miracle: development strategy and economic reform*, Hong Kong : Chinese University Press, 1996.

⁴⁵ David Kelly, "Reincorporating the Mingong: Dilemmas of Citizen Status," in Ingrid Nielsen and Russell Smyth (eds.), *Migration and Social Protection in China*, Singapore: World Scientific Publishing Co., pp. 17–30 (2008).

⁴⁶ Fei-ling Wang, *Organizing through Division and Exclusion: China's Hukou System*. Stanford, CA: Stanford University Press, 2005.

⁴⁷ Dorothy Solinger, "The creation of a new underclass in China and its implications," *Environment & Urbanization*, 18(1): 177–193 (2006). Ching Kwan Lee, *Gender and the South China Miracle*, Berkeley, CA: University of California Press, 1998. Peter Alexander and Anita Chan, "Does China Have an Apartheid Pass System?" *Journal of Ethnic and Migration Studies*, 30 (4):609–629, 2004.

⁴⁸ Chan, "A 'Race to the Bottom.'" Green, "On the World's Factory Floor."

the critical Lewis turning point⁴⁹ so that cities and export-process zones like Shenzhen and Dongguan can draw on a very large pool of labor for a long time, basically at rural-subsistence wage rates. Li Desheng, a former chief of China's Bureau of National Statistics, remarked in 2005 that for the two decades since 1980, there had not been any real increase in the wages of rural migrant workers in the coastal areas, despite rapid economic growth of the region and China as a whole.⁵⁰ While seemingly obvious, one of the amazing things of post-Mao China is that wages of rural migrant labor remained basically flat until very recently even though the economy grew annually at double-digit rates in the last three decades.⁵¹

In other words, besides the demographic pressures built up over centuries, the *hukou* system and its related components (such as the rural land tenure system) have also served to depress the real wages of migrant laborers and bound them into a basically hereditary underclass of cheap labor.⁵² As long as the system is still alive and potent in discriminating low-skilled rural migrant labor—and most signs appear to be indicating so⁵³—the supply of very low-cost rural labor will remain large. (Ironically, the *hukou* system also limits the supply of rural labor to the urban sector, see below).

3) In addition to the super-low wage conditions, rural migrant labor hired in export sector fall overwhelmingly in a highly select age group, namely, the younger (generally also more educated) cohort roughly between age 16 and 34. This appears to be mostly a demand-side factor dictated by industrialists: young migrant labor possess certain kind of

⁴⁹ Wang has stated that the *hukou* system enabled China to bypass the Lewis turning point (Wang, *Organizing through Division and Exclusion*).

⁵⁰ "Wages Unchanged for Two Decades, Li Desheng Explains Reasons for Labor Shortages," *Beijing Chenbao*, January 27, 2005, at <http://politics.people.com.cn/GB/1027/3149315.html>, accessed January 5, 2009. The stagnation of real wages of rural migrant labor was more serious in the early 2000s, considering that migrants then were more educated and more productive than those who came in the late 1980s.

⁵¹ According to Cai Fang, even in 2004, the wage level of migrant labor was only about 1/4 of the marginal productivity of labor, which means that, in addition to the fact the rise of labor costs was backed by increase in labor productivity, the former had not even caught up with the latter (English transcript of an interview of Cai Fang by *Caijing Magazine*, posted on Chinapol on September 5, 2008.) Thanks to Dorothy Solinger for sharing that information.

⁵² Kelly, "Reincorporating the Mingong."

⁵³ Chan and Buckingham, "Is China Abolishing the *Hukou* System?" Cai Fang, "Solving the Rural Surplus Labor Puzzle" (in Chinese), *Zhongguo renkou kexue*, 2007, No. 2, p. 6. See also Chapter 9 by Wang in this volume.

“qualities” expected by employers. They range from the physical abilities of young women, such as high dexterity to handle complicated and fast-paced repetitive assembly work (especially in electronic industry), to “work attitudes” such as endurance and tolerance for long hours of work, often for 28–29 days a month.⁵⁴ These qualities are mainly found in the young and often unmarried workers; they of course are also more likely to cope with living in dormitories or barrack-type shelters.

This set of employers’ “preferences,” in part reflecting a more consumptive way of using rural labor, obviously severely reduces the pool of available labor. At the same time, rural migrant workers are treated only as “temporary” in the destination by the *hukou* system. They lack legal permanent residency status in the cities where they work, which also precludes them from accessing the urban social safety net and most of other urban services and benefits available to any permanent resident. Such conditions make sustenance in the city extremely hard, if not impossible, for the great majority of older rural migrant workers who are married and have children. The double lack of required labor “qualities” and access to an urban social safety net, combined with high and rising urban living costs,⁵⁵ often forces many of them to choose to return to rural areas when they get older.⁵⁶ In the case of the 2004–06 labor shortages, some of the government measures aiming at raising incomes in the countryside also helped to cut some of the rural labor supply.⁵⁷

In other words, the depletion of rural surplus labor is not really the exhaustion of *all* surplus labor in the rural sector. Instead, the shortages have occurred mainly in a particular age cohort of labor; survey data in Chapter 8 by Han Jun *et al.* clearly reveal that there is still a huge rural labor surplus (mainly in age 35 and above), the size of which is estimated to be about 100 million.⁵⁸ This is far from the full employment

⁵⁴ Green, “On the World’s Factory Floor.”

⁵⁵ Rural migrant laborers are not eligible for low-cost public housing, which has been expanded rapidly in the last ten years in almost all major cities in the face of escalating urban housing prices and rents.

⁵⁶ “Labor Shortages Caused by Inability of Rural Labor to Settle in Cities” (in Chinese), *Zhongguo Jingji Shebao*, April 15, 2005, at <http://news.beelink.com.cn/20050415/1827521.shtml>, accessed on December 22, 2008.

⁵⁷ Such as the elimination of agricultural tax in 2006 and the “new socialist town” policy (see Green, “On the World’s Factory Floor,” Part VII.)

⁵⁸ This figure seems to square well with my rough estimate of rural labor surplus of 2006: Total rural labor: 470 million; Already transferred labor: 226 million; Labor needed for agriculture: 150 million; Implied surplus: 94 million. The estimate of “surplus,”

scenario assumed in the Lewis model when the “turning point” is reached. The co-existence of labor shortages and large surpluses in the rural sector is really quite unique to China’s industrialization experience, because of the prolonged and continuing rural and urban segmentation. It speaks perhaps to the much more serious wage depression of rural labor in China because of the double burden of the demography and institution, as elucidated above. Shortages in only a specific age labor segment, even permanent, are a far less significant sign of progression to the ultimate demolition of the socioeconomic duality in China than one that is based on full employment of rural labor at large.

For the coming several years, the rural working-age population is still growing at least 7–8 million a year, far exceeding the average annual actual net increase of rural migrant labor of about 4.4 million in the last 15 years, as calculated earlier. If we consider the labor depletion in the broader sense (which is more significant), it appears that there is still substantial room to go. However, if we limit our consideration only to the rural labor aged 16–34, the annual supply in the coming few years will be about 3–4 million per year,⁵⁹ about one million short of the annual average demand in the last 15 years. Depending on the length of the current global financial crisis, once China’s export growth gets back to the pre-crisis level, the supply of this young cohort is going to be limited in about a few more years’ time after that.

From a policy standpoint, there are definitely broader economic and social benefits than the narrow short-term calculus of the industrialists to argue for extending industrial and other urban employment to the older rural surplus labor. Gainful employment of the older rural migrant labor will greatly relieve the serious burden of financing retirement in old age and address partly the issue of “getting old before getting rich” as identified in Chapter 3 in this volume. Experience in Hong Kong in the 1980s and 1990s and China more generally (in state-owned enterprises) shows that manufacturing and low-end service jobs can be great absorbers of low-skilled labor aged 35 and above. The low-end service sector, such as jobs in cleaning and domestic services, is still largely underdeveloped in China.

of course, critically depends on the assumption of labor needed for agriculture. A set of higher figures (178–228 million) is used by Cai Fang and Wang Meiyuan, see Table 7.2 in Chapter 7. See also Green, “On the World’s Factory Floor,” Table 7 for more details and different estimates.

⁵⁹ Author’s estimates based on data from 2005 1% Population Survey.

It is evident that the labor “dearth” in 2004–06 was a sign indicating the rise of opportunity cost of young rural labor. However, it now appears that wage gains of rural migrant labor in those years through the market were short-lived and have now largely dissipated by the unpredicted global financial downturn. The gains were also localized in specific age segments and mostly in coastal regions. By and large, the economic (and political) power of the whole rural labor (including migrants) remains weak. In policy terms, I concur with Cai Fang and many others in this volume who advocate for greater reduction of barriers to creating a truly functional single rural-urban labor market. This will involve especially the reforms of the *hukou* system to allow migrant laborers to settle in cities, and developing, for example, social safety net (such as potable pension) system for them and their family. This will help reduce the cost of living in cities and induce labor supply to the city. The rights of the rural labor and their interests (including their farmland, especially against unscrupulous expropriation without adequate compensation) need to be protected; some important measures have been taken especially by the central government in the last few years.⁶⁰ Of course, the short-term task is to create jobs for migrant workers and provide some assistance for the unemployed. These tasks are now made more obvious and urgent by the possible significant impoverishment of the rural population because of the huge unemployment of the rural migrant labor induced by the global economic crisis.⁶¹

In summary, the Chinese story of rural-urban transfer and industrialization in post-1949 era is a complicated yet very interesting one because of the various intersecting factors consisting of both the general ones (such as those identified by Lewis) and the more China-specific ones (some of which are highlighted above). China calls upon students of development to engage in careful work to come up with sophisticated analysis and frameworks which are China-appropriate. Hopefully this introduction has furnished a more nuanced tale to help readers understand the Lewis turning point in China’s more distinct institutional context. With that, I invite all of you to peruse the very rich research and analysis contained in this volume to truly comprehend the story of China’s rural-urban transformation—which is of epic-scale—and its problems and continuing enormous challenges.

⁶⁰ See Chan and Buckingham, “Abolishing the *Hukou* System?” and also Chapter 11.

⁶¹ Income generated by rural migrant labor now contributes to about 40 percent of the total net rural income. See “Nongmingong shiye diaocha.”

Table 1: Major aggregate migration figures, 1982–2007 (in millions)

Series	<i>Hukou Migrants</i> (Yearly flow figures)		<i>Non-Hukou Population (Stock figures)</i> or “Floating Population”					
	Accepted general estimates	City, Town, or Township	“Temporary Population”			“Rural Migrant Labor”		
			Registered with MPS	National Censuses/ NBS Population Surveys	County or City	Data compiled by Lu et al. (2002)	Estimates based on MOA Surveys	
Geographic boundary (to cross)	No minimum	Usually overnight	3 days	Township, Town or Street	6 months	6 months or one year	Generally, township	Township
Minimum length of stay	A	B	C	D	E	F	G	
1982	17.30	20			6.6 (1 yr)			
1984	19.69	20						
1987	19.73				15.2 (6 mos.)*			
1988	19.92	70				26.0		
1989	16.87					30.0		
1990	19.24				21.6 (1 yr)			
1991								
1992	18.70	60–70						52.8
1993	18.19	70				62.0		
1994	19.49					70.0		
1995	18.46	80		49.7	29.1**(6 mos.)	75.0		69.0
1996	17.51			60.0				
1997	17.85	100	37.3	61.8				
1998	17.13		40.5	62.4				79.8
1999	16.87	100	40.4	63.7				
2000	19.08		44.8	144.4				
2001	17.01		55.1	N/A				
2002	17.22		59.8	109.3				
2003	17.26	140	69.9	107.8				98.2
2004	19.49		78.0	106.6				102.6
2005	19.33		86.7	147.4				108.2
2006	20.60	150	95.3	128.7				114.9
2007	20.84		104.4	120.7				

Notes: * the geographic boundary is based on city, county or town.

** the geographic boundary is based on county- level units.

MPS = Ministry of Public Security. NBS = National Bureau of Statistics. MOA = Ministry of Agriculture

Sources:

A: Ministry of Public Security, *Zhonghua renmin gongheguo quanguo fenxiangshi renkou tongji ziliao* (Statistical Materials on Population of Counties and Cities of the People's Republic of China). Beijing, China: Qunzhong Press, various years; National Bureau of Statistics and Ministry of Public Security, *Zhonghua renmin gongheguo renkou tongji ziliao huibian* (Collections of Statistical Materials on Population of the People's Republic of China). Beijing, China: Zhongguo caizheng jingji chubanshe, 1988.

B: Figures for 1984, 1995 and 2006 are quoted by Yu Xuejun, “Tuidong renkou liudong fuwu he guanli tizhi chuangxin cujin chengxiang kexue fazhan” (Promote institutional innovations in the service and management system of the floating population and scientific development of the rural and urban sectors), Paper presented at the Forum on Reform and Population Development, Beijing, China, October 23, 2008, http://www.china.com.cn/zhibo/2008-10/23/content_16647215.htm. Accessed on October 23, 2008; others are compiled from various sources. See more explanations in the text.

C: Ministry of Public Security, Household Administration Bureau, *Collection of Statistical Materials on Temporary Population in China*, (in Chinese). Beijing: Zhongguo gongan daxue chubanshe. (1997–2007).

D and E: State Council and National Bureau of Statistics, *Zhongguo 1982 nian renkou pucha ziliao (Tabulation on the 1982 Population Census of the People's Republic of China)*. Multiple volumes. Beijing: Zhongguo tongji chubanshe, (1985); National Bureau of Statistics, *Zhongguo 1987 nian 1 per cent renkou chouyan diaocha ziliao (Tabulations of China's 1987 1 per cent population sample survey)*. Beijing: Zhongguo tongji chubanshe (1988); State Council and National Bureau of Statistics, *Zhongguo 1990 nian renkou pucha ziliao (Tabulation on the 1990 Population Census of the People's Republic of China)*. Multiple volumes. Beijing: Zhongguo tongji chubanshe (1993); National Population Sample Survey Office, *1995 Quanguo 1% renkou chouyang diaocha ziliao (Data on the Sample Survey of 1% of the National Population in 1995)*. Beijing, China: Zhongguo tongji chubanshe (1997); State Council and National Bureau of Statistics, *Zhongguo 2000 nian renkou pucha ziliao (Tabulation on the 2000 Population Census of the People's Republic of China)*. Multiple volumes. Beijing: Zhongguo tongji chubanshe (2002); State Council and National Bureau of Statistics, *2005 nian quanguo 1% renkou chouyang diaocha ziliao (Data on the Sample Survey of 1% of the National Population in 2005)*. Beijing, China: Zhongguo tongji chubanshe, (2007);

F: Lu Mai, Zhao Shukai and Bai Nansheng, “The past and future of the movement of rural labor force in China,” in Hong Ma and Mengkui Wang, eds, *Zhongguo fazhan yanjiu (China Development Studies)*, Beijing, China: Zhongguo chubanshe, pp. 555–587, (2002)

G: Ministry of Agriculture, “Nongyebu: Jinnian nongcun laodongli waichu jiuye renshu da 1.149 yi” (Ministry of Agriculture: out-migrating rural labor force reached 114.9 millions this year), (27 November, 2006), <http://sh.shuangliao.gov.cn/nyzx/xwzx/nydt/nydt/200611/4168.html>. Accessed on 27 December 2007; Ministry of Agriculture, “Nongcun laodongli zhuan yi jiuye xianzhuang wenti ji duice” (The employment situation, problems and solutions of the changes in rural labor force), in State Council, *Zhongguo nongmingong diaoyan baogao (Research Report on China's Rural Labor)*, Beijing, China: Zhongguo yanshi chubanshe, pp. 86–98, (2006).