NATIONAL STATISTICS
ON INTERNAL MIGRATION IN CHINA:
Comparability Problems

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Since the late 1980s, research on migration in China has made rapid progress, partly as a result of the increasing availability of information. Although several large national surveys and censuses were undertaken, many researchers criticized them for being preoccupied with official channels of migration. For this reason, researchers in China and abroad have conducted their own surveys to shed more light on specific aspects of the migration process, particularly rural-urban migration. However, the comparability of the results of all these different studies (national surveys and censuses, as well as smaller surveys) remains an issue. Researchers still tend to rely on one or two national data sets, probably for reasons of convenience and cost (see Appendix 6). The drawback of such a narrow focus, however, is that the picture of Chinese migration at the national level is not comprehensive.

Few attempts have yet been made to evaluate systematically the available six major data sets on national migration: the 1986 Urban Migration Survey, the 1987 One Percent National Population Survey, the 1988 Two Per Thousand Fertility Survey, the 1990 Census, the 1995 One Percent National Population Survey, and the household (hukou) registration migration statistics. This article argues that for the purpose of obtaining a long-term, overall picture of Chinese migration, systematic comparison of these existing national data is more important than further accumulation of data through small surveys. Small surveys may be helpful in revealing the mechanisms of the migration process and highlight specific developments in particular regions, but they are not very useful in constructing national patterns. For that purpose, the available major national data sets should be utilized to a much greater extent than has hitherto been the case. Any systematic study of Chinese migration from the long-term perspective critically depends on these data sets, as no other large ones are available on the national level for the last fifty years. However, the researcher should be aware of

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1 See Appendix 6 for a brief overview of the research.

2 Picke 1999.

3 In this article, we do not discuss small surveys since they are numerous and difficult to compare. Mallee 1996 has evaluated a number of major factors involved in the comparison of rural-urban migrant surveys in his review of the Chinese literature.

their strengths and weaknesses before using them for comparative purposes. Due to differences in definition, coverage, and data collection, they are not directly comparable. This article aims to provide a systematic overview of their potential and possible pitfalls, in order to facilitate a more extensive and systematic use of these valuable data sets in future research.

Important work in this direction has already been undertaken by a number of scholars, notably Thomas Scharping who has systematically compared three national data sets and some sub-national data sets in his overall evaluation of Chinese migration, commenting on the biases of these sets and tabulating estimates for migration along the rural-urban hierarchy. In another work on rural-urban migration in south China, he incorporated the 1986 Urban Migrant Survey and the 1987 micro census with a local migrant survey in Guangdong in order to identify long-term trends and changes in rural-urban migration. Kam Wing Chan has also provided estimates of national migration rates, on the basis of the hukou migration statistics, the 1987 Survey, the 1990 Census and some other large surveys for the post-Mao period. Zhang Shanyu (1995) and Yang Yunyang (1994) also made several insightful observations in their comparison of the 1987 micro census and the 1990 Census.

In this article, we will first discuss two main problems affecting Chinese migration statistics in general, namely the institutional complexity of the migration process and the complexity of the data. Then we will compare the six large national surveys, identify the sources of bias and error in each, and evaluate their relative strengths and weaknesses. The last section focuses on three additional issues, i.e., divergent rates among data sets, the scope of the hukou migration statistics and problems associated with studies of spatial migration patterns.

The Institutional Complexity of the Migration Process

Internal migration in China is more complex than in most developing societies as a result of its socialist system. In market societies, migration is mostly initiated by individuals, although naturally individual decision-making is influenced by structural factors. Especially before the reforms, much migration in China was actually initiated by the state, regardless of individual interests. The state regulated and directly intervened in the migration process through a complex network of institutions, the most important of which were labor planning, the state's employment monopoly, residential control, mobilization and the work unit system. In post-1978 China, many of these institutions are still in effect, though probably in weaker forms. In order to understand Chinese migration, knowledge of the roles of these complex institutions is required.

An individual who wants an official change of residence from one administrative unit (city, town or township) to another one first has to obtain permission from his/her affiliated unit (mostly work units in urban areas, or villages and townships in rural areas) in both the sending and receiving areas. This is generally the most difficult stage since state units tend to protect their own labor force and discourage any change in workplace unless the move is initiated by the state. On approval from a unit, the next step is to submit an application to "authority departments" (zhu guan bumen), for example, municipal industrial bureaus or ministries. Final permission is needed from labor or personnel bureaus (ministries) to make sure the move conforms to state policies and labor plans. The final stage consists of the application for a new hukou document from a public security bureau. This is usually automatically granted once the move is approved by the official departments. Should any problem occur during any of these stages, however, the application is bound to fail. This is why many people do not even bother to start the process even if they want to move. In order to succeed, strong motivation and a favorable policy environment are needed. Of course, having good relations with well-placed government officials increases one's chances, sometimes greatly.

While recent research has focused on the hukou system and its impact on migration, little is as yet known about the role of the other institutions involved, such as the work unit system and labor planning. An effective way to analyze the institutional factors is probably through qualitative, such as ethnographic and archival, analysis. But this is not to say that the major national data sets cannot contribute to our knowledge in this respect. For the moment, they are still important sources for understanding the role of institutions in Chinese migration. In this article, we will focus solely on one aspect, namely the reasons for migration as reported in the major national data sets.

Reasons for Migration: Problems in Comparing Data Sets

Included in many surveys and the 1990 Census was a question on why people migrate. Fan (1999) argues that their reasons also reveal the channels and mechanisms regulating the migration process, which makes it possible to distinguish different categories of migration. Taking this approach as a starting point, this article compares the categories of migration in surveys and censuses based on the channels through which migration is regulated, and points out a number of problems the researcher should be aware of.

8 For a theoretical approach to "socialist migration," see Ta 2000.
9 Authority departments are the government departments that have authority or jurisdiction over their subordinate units in terms of professional and personnel decisions (Liebertal and Olsenbach 1988).
10 Chan and Zhang 1995; Blecher and White 1979.
There are nine categories of reasons for migration in the 1990 Census, identical to those in the 1987 Survey: job transfer, job assignment, study and training, "industry and business," joining relatives and friends, family co-migration, marriage migration, retirement or resignation, and "others." These nine categories can be further divided into state-planned migration and self-initiated migration. The former includes job transfer, job assignment, study and training, family migration and retirement, which are sponsored by the state and associated with a change of official residence. The latter takes place outside state plans and is often not linked with an official change of hukou residence. Its largest category is "industry and business." This category predominantly comprises rural labor migration, which has swept large Chinese cities like a tidal wave since the mid-1980s.

Although these nine categories provide an impression of the migration process, they do not offer an accurate picture of the actual channels regulating migration. Awareness of this point helps one to avoid inaccurate inferences. In the first place, the categories of reasons for migration listed in the major data sets vary substantially (see Appendix 1). For example, the 1988 Fertility Survey and the 1986 Urban Migration Survey included more categories than the 1990 Census. In the second place, all these categories are merely rough approximations of actual channels. Details of the actual channels are only kept in the household registration records administered by the Ministry of Public Security (MPS), which classifies the reason for migration into finer categories and subcategories. Some of these are not even included in the census, such as "reform-through-labor" (laozhong gaizao), "rehabilitation," and "return of educated youths." For those categories that are listed in the census, the household registration statistics provide sub-categories that vary based on the underlying migration process. For example, they divide "job transfer" into two sub-categories, one for workers and one for cadres. This is an important distinction in Chinese planning, since job transfer of workers is handled by the labor departments, while that of cadres is processed by the personnel departments, each with their different requirements, conditions and procedures. The last column of the table in Appendix 1 shows which government departments are responsible for which type of migration.

In the third place, as the case of job transfers shows, there is not necessarily a one-to-one correspondence between a migration category and a government department. Often one type of migration is administered by several government departments. Demobilization of soldiers and officers is handled by political departments in the army, departments of civil affairs, and personnel departments. Job assignments of college graduates are coordinated through the planning commission, education commission and personnel departments. To make things even more complicated, the administrative division of labor and government regulations also change over time.

In the fourth place, in the census and surveys, the same migration category may cover different types of migration. For example, in the 1990 Census, "job transfer" also includes demobilization. In the fifth place, there are several differences between the hukou migration statistics on the one hand and the census and surveys on the other, which hinder comparison. In the census and surveys, the respondents had to choose from various alternative categories offered in the questionnaire, but they might not have accurately understood the meaning of these categories. For example, in analyzing the micro data of the 1986 Urban Migration Survey, we found out that many people ticked "marriage migration" (migration for the purpose of marrying) as their reason for migrating actually had children at the time they moved. This suggests that they were already married, and misunderstood the meaning of the term "marriage migration." By contrast, the hukou migration statistics record the actual channels through which migration is permitted by the state. While this is an advantage, a drawback is that these statistics are limited to only hukou migration, and do not include questions on the reasons for migration.

In the sixth place, one should not interpret the reasons for migration at face value. In one example, the majority of "job transfers" were not work-related at all, but undertaken for family reasons (mainly spousal reunion). "Real" job transfers only accounted for less than one-third of the total. One important category of job-related migration is job recruitment, which is not even included in the reasons for migration in the 1990 Census.

In sum, one should exercise caution when using these data sets to analyze the role of the state and other institutional factors in the migration process. Careful investigation and comparison will help one avoid making obvious mistakes. The hukou statistics provide more accurate information on migration.

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13 "Rehabilitation" refers to the restoration of social status for those who were punished by the government in the past for political reasons. "Reform-through-labor" refers to the sentencing of people to labor camps to be politically "re-educated," and "educated youths" refers to the urban youths who were sent down to the countryside during 1967-1980.
14 The demobilization of military cadres is regarded as "job transfer" in government regulations but still listed as a separate category in the hukou migration statistics. The demobilization of ordinary soldiers is not regarded as job transfer in government regulations and is also treated separately in hukou statistics, but in the 1990 Census, it is categorized as "job transfer."
15 According to the records of the Wuhan Municipal Personnel Bureau, about 50% of job transfers of cadres in and out of Wuhan from 1974 to 1981 were for spousal reunion. Field interview with cadres in the Wuhan Personnel Bureau in 1998.
16 The examples are not limited to those mentioned above. In a recent article on the return of rurally urban youths in Shanghai, Lu and Liu 1998 argued that the return of educated youths (zhaojing jianzhi) was a manifestation of modern citizenship while recruitment and replacement (zhaogong dengji) was indicative of increasing dependence.
channels and institutional process, but the published national tabulation of these statistics does not include migration reasons. Another obvious drawback is that it only records state-approved hukou migration, omitting other forms.

Differences in Data Collection Method and Definition of Terms

Other problems in comparing the different data sets stem from two major sources. One is the difference in methods of recording and collecting data. Related to this are issues of hukou residence and status, extent of coverage, sampling errors and administrative mishandling. The other is the difference in definition of terms such as “migration” and “urban.” We will discuss the various problems in the subsequent sub-sections.

Hukou
The hukou system is the key institution used by the government for residential control. Since the passage of the Temporary Regulation of Urban Hukou Administration in 1951, urban residents were required to report and register when a change in household registration, such as death, birth and change of residence. This was extended to the rural areas in 1955 on the eve of rural collectivization. Hukou registration statistics include moves across the boundary stipulated by hukou registration and administration.17 The hukou administration area generally corresponds to the administration area of township and towns in the countryside, and street government offices in urban areas. There are basically two types of households, residential (family) household and collective households. Each household has a hukou registration book. In rural areas, each village (production team) has a registration book. A local leader is assigned to register hukou changes. Compared to urban areas, hukou registration and management in rural areas are much more lax and problematic.18 In cities, there are special hukou policemen (keji jing), each of whom monitors the hukou changes of about 750 households. After many years on the job, they have acquired an intimate knowledge of the neighborhood under their administration.

The hukou system determines the way migration data is recorded and categorized in hukou migration statistics and other national data by dividing migrants into hukou and non-hukou migrants, i.e., with and without local resident hukou, respectively. The hukou statistics only keep track of those who have local resident hukou status, while census and surveys record both hukou and non-hukou migrants. In other words, hukou registration defines migration on a de jure basis, while surveys and census do so largely on a de facto basis. The census and surveys use “duration of stay at survey residence” to differentiate non-hukou migrants from short-term visitors. The Second Census in 1964 used a one-year standard in defining “resident,” as did two later censuses (1982, and 1990) although the 2000 Census reverted to a six-month standard,19 similar to that used in the two national surveys of 1987 and 1995. The above may cause problems in comparing data, since the shorter the duration standard, the more people are registered as “migrants.” Therefore, everything else being equal, the two national population surveys should indicate a larger volume of migration than the censuses. However, in reality many factors come into play, and it is very difficult to gauge precisely the impacts of the duration standard. This is particularly problematic in the post-reform period, since non-hukou migration has greatly increased, equalizing hukou migration in size based on the definitions of “migrants” used in those censuses or surveys. For migration surveys, additional problems arise because non-hukou migrants are not evenly distributed, neither between regions (cities) nor within regions (cities). Non-hukou migrants tend to concentrate in coastal regions and large cities, in the peripheral areas of large cities, and in construction sites and factory dorms. Therefore, surveys that sample mostly urban neighborhoods may underestimate the number of non-hukou migrants, which was in fact one of the major limitations of the 1986 Urban Migration Survey.

Another pitfall lies in regarding three different aspects—hukou type, hukou status, and settlement type—as similar. Sometimes hukou migration is erroneously equated with government-planned migration. Hukou migrants are believed to enjoy all the state benefits and to move through government channels while non-hukou migrants are regarded as people of rural origins without government benefits. Though largely true, this view is imprecise. Not all non-hukou migrants hold an agricultural hukou. Some have non-agricultural hukou and come from urban places. Similarly, not all hukou migrants are government-sponsored. Hukou migration within rural areas is distinctly different from that in urban areas. The three categorizations implied in the terms hukou type (local hukou vs. non-local hukou), hukou status (agriculture vs. non-agriculture hukou), and settlement type (urban vs. rural) do not necessarily overlap and are not interchangeable.

Definitions of “migration”
Migration is differentiated from residential mobility or circulation according to duration and geographic extent.20 Some minimum duration is required to distin-

17 Zhang Li 1999.
19 Our thanks to a reviewer for the information provided.
guish migration from a short-term visit. As stated earlier, people are counted as migrants if they stay away from their hukou residence for six months or one year, depending on the method used. This is a reasonable approach considering that a large number of moves are short-term. There is no duration requirement for hukou moves since they are most likely to be permanent due to the complicated procedures and potential difficulties in changing one's official residence.

Unlike the temporal dimension of the definition of "migration," the spatial dimension applies both to hukou and non-hukou migration—an important source of confusion. In general, "migrants" are people who move across certain administrative boundaries. However, the census and surveys vary in their choice of boundaries. In the 1990 Census, crossing county and city boundaries counts as a migration move. In the 1987 Survey, the same requirement holds except for a small difference, i.e., any move involving designated towns within county boundaries is counted. The 1995 Survey includes moves within cities: unlike previous censuses and surveys, it takes into account moves across boundaries of urban districts (for cities with urban districts). The 1986 Survey adopts the same standard as the 1990 Census, although it also includes some intra-county movement. The hukou statistics from the Ministry of Public Security use township, town, and city as the spatial thresholds to distinguish migration from short-distance movement. The 1988 Survey does not employ such clear distinctions.

Naturally, the smaller the administrative units chosen the more migration will be counted. Thus, spatial definition contributes to the divergence of migration numbers and scales in the major data sets. Another problem is the fact that in China, as shown earlier, different types of migration (hukou vs. non-hukou, agricultural vs. non-agricultural, urban vs. rural) vary according to place and spatial scale, which makes it difficult to assess changes in migration patterns over time.

Definitions of "urban"
One objective of migration studies is to evaluate the contribution of migration to urban population growth, particularly in developing countries. However, it is difficult to carry out such an evaluation in China, in view of the government practice since 1984 to reclassify formerly "non-urban" areas as "urban." In one urban population accounting used by the State Statistical Bureau in the 1980s, once a county was reclassified as "city," its entire population was counted as "urban population."23 As a result, China’s "urban population" was drastically increased overnight (on paper). In order to compensate for this, the 1990 Census adopted an alternative measure called the "second standard" in counting the urban popu-

21 "Move" here refers to geographical mobility, which includes both short-term visits and residential mobility.
22 There is some confusion on this issue. See further discussion.
often only record the last move or place of residence five years ago, which means that they do not record any moves in between. Hence, the numbers do not show all the migration in the period under study. This problem could be particularly severe if surveys cover a long time span, as in the case of the 1986 and 1988 Surveys. Other typical problems associated with retrospective surveys, such as memory loss and post-migration rationalization, may also apply.\(^\text{26}\)

The following is an example of the importance of the kinds of question asked. The 1990 Census asks about one’s place of residence five years ago while other surveys inquire after the last move. Thus, a migrant moving from place A to place B then back to A before the time of survey is not counted as a “migrant” in the 1990 Census, but will be counted as a migrant for the last part of his or her move in the 1987 Survey. The question about previous residence five years ago tends to underestimate migration volume by omitting looped migration, everything else being equal. This problem may not be as minor as it appears to be at first glance, since a significant part of hukou migration is looped migration, for example college education (going to a city for education and coming back after graduation), military service (enlistment and demobilization) and reform-through-labor (going to labor camps and subsequent release).

Data reliability
The problems concerning the reliability of Chinese statistics on economic and social conditions are well known.\(^\text{27}\) The major national data sets on migration suffer from this problem in various degrees. Data unreliability may stem either from unintentional or intentional distortion. Unintentional distortion is caused by lack of certain skills and knowledge on the part of data collectors, problems in the infrastructure and system maintenance, and survey sampling techniques. For example, in rural areas, the lack of relevant skills and resources for data collection and maintenance is greater than in the cities.\(^\text{28}\) A major problem for surveys is unavoidable sampling error. Biases can be introduced by unequal sampling across regions and populations. For example, in the 1986 Survey, most of the “large cities” are new industrial cities that expanded in the pre-reform period. Since there was more migration to these new large cities than to old large cities before 1978, conclusions drawn from this sample without adjustments would lead to significant bias.

Intentional distortion comes into play when there are financial or political stakes involved. Often local governments are evaluated by their achievements in important issues, such as economic development and family planning.\(^\text{29}\) As a result, administrators are sometimes known to hide illicit births by entering these children in the hukou registration as “immigrants.”\(^\text{30}\) Another example is when some individuals move to a new place, they still keep their hukou registration in their place of origin for one reason or another. It is estimated that in the 1970s, there were no less than half a million “vacant hukou” (kongzhu) in Beijing, i.e., people maintaining their hukou in the capital but actually living elsewhere. In comparison, surveys and census are less susceptible to this type of distortion since they are generally less directly tied to financial and political interests.

This list of problems is of course by no means exhaustive. The main message is that we need to be aware of these factors as well as administrative complexities when we analyze the major data sets in order to understand patterns and changes of internal migration in recent Chinese history. It is particularly important if we want to compare migration data to make inferences about migration rates and spatial structures. In the next sections, we will separately discuss the merits and drawbacks of each major data set in this regard.

A Comparison of the Six Major National Data Sets
In the last ten years or so there has been much progress in collecting migration data and information on several fronts. First, a multitude of special surveys focused on certain groups of migrants and regions were carried out. Second, there was an increase in the number of migration questions in the census and micro census. Third, the MPS also started to publish hukou registration data for migration. Fourth, a number of national surveys on migration and fertility also included questions about past migration. For our purposes, the first kind of information is of limited use, due to its restricted scope. The special surveys deal exclusively with rural labor migration, which is only one part of the overall migration picture. Our main focus is on the other three kinds of data.

There was no specific migration question in the 1982 Census apart from a question on hukou residence. The situation changed with the 1987 1% Micro Census, which included two specific questions on migration concerning migration reasons and origins, and two migration-related questions about hukou residence. The 1990 Census and 1995 Micro Census basically kept the same format but with variations in definitions and number of questions (see Appendix 2).

Although two censuses and micro censuses offer complete national coverage in terms of spatial dimension, they only provide migration information for the five-year period prior to the time of survey.\(^\text{32}\) Thus they do not cover the pre-reform period. Fortunately, there are other sources that partially fill the gap, a major one being the hukou migration statistics covering the whole period from 1953 to 1987, with some years missing for some provinces. These data only

\(^{26}\) Bilbrough et al. 1984.

\(^{27}\) See e.g. Chen 1994, Chapter 2.

\(^{28}\) This also applies to hukou registration, which has led to proposals for the reform of the rural household registration system (Chen et al. 1990; Zhang and Wang 1995).

\(^{29}\) Whiting 2000.

\(^{30}\) Yang Yunyan 1994.

\(^{31}\) Chen et al. 1990.

\(^{32}\) This does not apply to Tibet in the 1987 and 1990 censuses. There are data on out-migration from Tibet but no data on immigration to Tibet in the 1990 Census.
provide information on immigration and outmigration for provinces, and are not disaggregated by geographical scale for this period. MPS also publishes migration data for the years after 1992, not only for migration at the provincial level but also city, town, and county levels. In addition to hukou statistics, the 1986 and 1988 Surveys also cover the whole period of the People's Republic. In the following, we will examine the available data for the pre-reform and post-reform periods.

Sources on migration in the pre-reform era

There are three major sources of information for migration before 1978: the 1986 Urban Migration Survey, also known as the "1986 Migration Survey of 74 Cities and Towns," the 1988 Two Per Thousand Fertility Survey, and the MPS hukou migration statistics. For a comparison of these three in terms of coverage, definitions of "migration" and "urban," and error and bias, see Appendix 3.

The 1986 Urban Migration Survey

The 1986 Survey was conducted by the Chinese Academy of Social Sciences with the collaboration of 16 population research institutes and universities in July 1986. It covered 74 cities and towns in 16 provinces, involving 23,895 family households and 1,643 collective households with a total sampling population of 100,267, representing an original urban population of 43.5 million. The overall sampling ratio is two per thousand, but the actual sampling ratio varies according to the size of cities and towns from one per thousand for large cities to 20 per thousand in small towns. The intention of the survey designers was to get cases large enough to allow them to make inferences even for towns and small cities. The total of 100,279 people is distributed along the urban hierarchy as follows: 44,707 in 15 extra-large cities; 9,688 in 6 large cities; 16,939 in 12 medium-size cities; 10,855 in 10 small cities and 18,091 in 31 towns.

In addition to a section containing basic questions about households, the questionnaire has four other parts. The first part is about basic characteristics of "permanent residents" including those without local hukou who have stayed longer than a year. The second is about immigration and includes questions about the process, and circumstances of migration, and level of satisfaction after migration. The third is about short-term and long-term movement away from the survey place. Long-term movement is actually migration, since it is defined as "being away from survey place for more than a year." All long-term movement is return migration. Short-term movement may also include migration, if one

adopts the six-month criterion, but it is hard to distinguish from other very short-term movement, which may be as brief as one day. The last part of the survey concerns outmigration by those who leave the family permanently. Among the different types of migration, immigration constitutes the central concern of the 1986 Survey.

In the 1986 Survey, non-hukou migrants have to stay at the survey place for one year in order to qualify as immigrants. As migration is defined as a move across the boundary of a city or town proper, suburban counties are discounted. Most of the migration occurs at inter-county and inter-city levels. About 11.6% of migrants moved within counties, mostly town residents at the time of survey. As compared to the 1987 Survey, the percentage of non-hukou migrants is much smaller, only about 6.2% of total migrants or 5.6% of total population. The corresponding figure in the 1987 Survey is 31%. About 58% of non-hukou residents did not report any migration experience. One reason for the low percentage of non-hukou migrants might be that the survey was conducted among residential households and collective households. According to the 1988 Shanghai survey of the floating population, a little more than half of "temporary" migrants stayed at places other than residential and collective households, such as hotels, boats, work sites and free markets. This explanation is also supported by the observation that most of the non-hukou migrants were direct relatives of hukou residents, which was not the case in the 1987 Survey and the 1990 Census.

The 1986 Survey is the only investigation primarily designed to study migration and offers by far the most detailed and comprehensive data about the migration process. It provides information on various types of migration at various geographical scales. It is also the only large data set which provides information on income. The income data for two separate years can be linked to the migration data to evaluate the relationship between income and migration.

However, the 1986 Survey also has drawbacks, some of which greatly hamper the construction of migration patterns, especially at the regional level. In the first place, the selected cities and towns are not evenly distributed across regions, which means that it is not possible to derive reliable general regional

33 Zhuang 1985.
34 These data are published annually by the MPS in Quanguo fenxianshi renkou tongji ziliao (National Population Statistical Materials by County and City). The 1992–1994 data are also available in Zhuang 1995.
36 Ma and Wang 1988. See also Appendix 2.

37 Day and Ma 1994.
38 One reviewer commented correctly that non-hukou migration was hardly possible for much of the pre-reform period, thus reducing the share of non-hukou migrants in the total number of migrants. If we only look at the five years prior to the 1986 Survey, we see that the share of non-hukou migration increased to 12.2%. But it is still much smaller than the 1987 figure.
40 Zhang Kaimin 1989. This explanation is not very convincing in view of the fact that the majority of these floaters stayed less than three months. Thus it seems that survey place does not adequately explain the low percentage of non-hukou migrants in the 1986 Survey.
patterns from this data set. In the second place, some of the selected cities are not representative. For example, the selected large cities are all newly established industrial cities which experienced larger overall mobility than others. In the third place, the sampling ratio for each city in the urban hierarchy is not the same, with one per thousand for cities with a population of 300,000 to 20 per thousand for cities and towns with a population less than 30,000. Finally, the 1986 Survey also shares the same problems associated with all retrospective surveys covering a long period, such as memory loss, attrition by mortality and out-migration, multiple moves, and migrant selectivity.

The 1988 Fertility Survey
The 1988 Two Per Thousand Fertility Survey was conducted by China’s State Family Planning Commission in July 1988. Though primarily concerned with fertility and family planning, it also included questions on migration. In addition to questions on birth place and hukou residence, it had several questions on migration and inter-provincial migration regarding migration time and reasons. There was also a question on migration origin for intra-provincial migration. Normally, inter-provincial migration is not listed separately in migration surveys. This survey only carries information on migration origins for inter-provincial migration.

Regarding data collection, the basic sampling unit was villages and street committees (which totaled 815). The sampled population was 2,076,861. The sampling ratio varied across provinces with Sichuan being the lowest with 0.88 per thousand and Tibet the highest with 16.43 per thousand. The final published tabulations took into account the different weighting assigned to the provinces. Out of the 2 million people surveyed, there were 767,576 cases of intra-provincial migration, and 113,198 cases of inter-provincial migration. The 1988 Survey covers both hukou and non-hukou migrants but does not differentiate them, and uses a six-month threshold to define “migration.” Those who stayed less than six months were also captured by the sample but under a different category: liudong renkou, or “floating population.” The published tabulations do not offer any information on the extent of non-hukou migration longer than six months. Nonetheless, numbers for the floating population are listed: 1.8% for intra-provincial migration and 2.1% for inter-provincial migration. In view of the 1988 Shanghai floating population survey, where more than half of total floaters stayed less than six months, the total size of the floating population included in the 1988 Fertility Survey is quite small. What remains unclear is whether the moves within townships were counted. Under normal circumstances, such moves should not be considered as “migration.”

Since migration was of secondary importance in the 1988 Fertility Survey, it is likely that it was not designed to capture a representative sample of migrants. The sex ratios (number of males per 100 females) revealed by the survey are quite puzzling: 47 for intra-provincial migration and 166 for inter-provincial migration. The comparative figures for the 1987 One Percent Survey are 71 and 124, respectively. Since we have reason to believe that the 1987 Survey is more representative because of its large coverage and resources, the sex ratios derived from the 1988 Fertility Survey look quite skewed and may indicate a biased sample. Despite the use of street and village committees, the urbanization level in this survey seems a little high. Based on the tabulations on hukou population distribution, the percentage of total sampled population in cities, towns and countryside are 10.5%, 22.7% and 66.6% respectively, which gives us an urban percentage of 33.2% for 1988. Similar to the 1986 Survey, the 1988 Fertility Survey is likely to suffer from the usual problems associated with retrospective surveys.

It should be pointed out that the categories of migration reasons in the 1988 Fertility Survey are very different from those in other surveys. It lacks the categories of retirement, family migration, and joining relatives, which are listed in the other surveys. But the 1988 Survey does single out demobilization, and employs two separate categories for industry (zuogong) and business (jing-shang). In the 1990 Census, by contrast, demobilization comes under the category “job transfers.”

Hukou migration statistics
There are several types of tabulated forms related to migration in police substations at the street government office level. There are questions about immigration and out-migration, and geographical scale (i.e., intra-provincial, inter-provincial or intra-city). The geographical scale is more detailed for within-city moves after the early 1990s, as moves from other districts or other street government offices have been added. There are several levels of registration. A move from one area to another outside the city proper (shiqi) is called “immigration” (hukou qian ru) or “out-migration” (hukou qian chu). A move within the city and between street governments is called “hukou change” (yidong). For a move within the area administered by the same police substation or street government, one does not need to change one’s place of hukou registration. Registration regarding migration is

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42 Migration selectivity refers to the fact that migration is not uniform across the population, but typically associated with the young and educated, so that a large percentage of total migration is generated by a small percentage of the population.
44 Chang 1993, 43.
46 The percentage is much different from those of the 1987 Survey and 1990 Census considering the small percentage of floating population. This goes against Liang and White’s (1996) claim that the 1988 Survey is superior to the 1990 Census and micro censuses because it includes the floating population.
47 Liang and Chen 1993, 503, 527, 539.
very detailed. Police substations (jiedao paichusuo) submit reports of hukou change to police subbureaus of the district government, who in turn report to the city public security bureau and provincial public security departments.

Although hukou migration registration is very rich in detail, the published statistics are broad and general. Currently, we have hukou registration migration data for two periods: 1954-1987, with numbers of immigrants and outmigrants per provincial level unit; and 1992 and after, with migration numbers for the lower administrative levels, such as city, town and county. Migration reasons are not stated for these published statistics on the national level, but some published studies and our own interviews show that more detailed statistics are indeed available for cities, as indicated by the original migration registration forms.

Unlike data collected at one point in time, the collection of hukou registration data is ongoing. The latter's quality is closely tied to the issues related to administration. Its drawbacks are related not so much to technical problems, such as sampling and coverage, but more to potential neglect and intentional distortion of data for various reasons. To understand why these take place, it is useful to take a closer look at the registration process and the interests of the people involved. First, we have the ordinary migrant. Some migrants are not allowed to change their official hukou residence due to government policies, but they stay anyway and become de facto residents in many senses. Others do not want to change their hukou when they are forced to move to places lower in the urban hierarchy, such as in the case of the First Five-Year Plan, and the rustication of urban youth during the Cultural Revolution. There are even cases where people change the place of their hukou registration but stay where they are in order to continue enjoying the benefits of education, medical facilities, etc.

Second, we have the government officials directly or indirectly involved in hukou registration. On the technical side, registration staff may often not be able to keep complete records or submit changes on time. On the non-technical side, the registrars and local officials may change hukou records for some form of benefit from governments or individuals or to avoid punishment from upper levels. In the 1960s, there was a widespread practice of creating non-existent hukou in order to increase the population number on paper, in the hopes of obtaining more financial and material support from the government. Since the mid-1970s, some local officials have registered newborns above the family planning quota in hukou records as "immigrants."

However, despite all these problems, hukou statistics are still the only set providing complete annual migration data for almost the entire period since 1949. People were well motivated to register changes in residence, since they could not survive anywhere in the long term as unregistered residents without provision of rationed grain, particularly in urban areas before the mid-1980s, though this situation has changed since the early 1980s. Manipulation of the records by local government officials has probably been rather limited, since population change is generally modest and gradual, and any drastic changes appearing in the records would arouse suspicion from upper-level governments. Moreover, local governments are subject to direct and indirect quota controls. Without assigned quota, they are restricted in allowing immigration to local areas. In addition, censuses and special campaigns were conducted to restore the accuracy and credibility of the hukou system. Therefore, the hukou statistics can still be regarded as a valuable source for migration data.

Sources on migration in the reform era
As the three abovementioned sources also cover a large part of the 1980s, there is an inevitable overlap with the 1990 Census and the 1987 Survey. Although this facilitates comparison, the pre-reform data sets suffer from drawbacks in that they are either solely limited to hukou migration or their small sampling ratios make them scanty representative. The coverage and sampling ratios of the 1987 Survey, 1990 Census and 1995 Survey, by contrast, are much larger. A brief comparison is presented in Appendix 4.

48 There are four types of registration forms related to change of hukou residence, two for the family household and two for the collective household. They are called hukou yi-dong ("change" not "migration") registration books. With regard to hukou decrement in the family household, the form has items such as "moving out to city (intra-province or inter-province)," "moving out to countryside (intra-province or inter-province)," "moving out to other parts of the city," "death," and "other reasons." Other information includes current address, detailed address of the place of destination, name of household head, the number of the certificate, the staff who processes the case and the signature of the cadre in charge. With regard to hukou increment, items include "moving in from city or town (intra-province or inter-province)," "moving in from the countryside (intra-province or inter-province)," "moving in from other parts of the city," "birth," etc. Other related items include the work unit which processes and sponsors the move, address at destination, original work unit, the archive number of documents related to the move, and the name of the officer who processed the case.

49 Yue 1983.

50 Ma et al. 1997.


52 Yang Zhihi 1996.


54 Hukou migration control was centralized in the hands of the Economic Planning Commission in 1989. Previously, it was subject to several plans, such as labor plans and MPS quotas, administered separately by many government branches. After 1989, beginning in large cities, non-agricultural hukou conversion and immigration was controlled by the planning commissions (from field interview).
The 1987 National Population Survey

The 1987 National Population Survey was conducted on July 1, 1987. It employed a three-layered sampling strategy. The residential committees and village committees were taken as the basic sampling units. The survey sampled 1,045 counties or cities, 6,270 townships or towns and urban street committees, 12,540 village committees or residential committees. It recorded 2.49 million households and 10.71 million people (including military personnel). The sampling ratio is 0.999%. Sampling ratios were not the same across provinces, ranging from 0.6% in Sichuan to 2.5% in Ningxia. Of particular interest is the oversampling of three centrally administered cities. This problem has been fixed by the SSB in the published migration tabulation by applying appropriate weights.

The 1987 Survey was the first large national survey which incorporated questions on migration, and its basic format was also used in the 1990 Census. There were four questions related to migration, one on hukou status and three on migration (see Appendix 2). The question on hukou was concerned with hukou residence and offered only three possible options, i.e., "local hukou," "non-local hukou," and "to be decided." This is a simpler format than in the 1990 Census, which divided non-hukou migrants into two types: "staying at survey place for more than a year" and "staying less than a year but away for more than a year from one's hukou residence." One of the questions about migration concerned the duration of stay at the survey place, with six choices, from less than a year to more than five years. As such, this survey provides information on the extent of non-hukou migration prior to five years before the survey date. For those who migrated within the five-year period, information was requested about province of origin, but not city and county. This means that migration flows within provinces cannot be determined.

The 1987 Survey covers the five years from mid-1982 to mid-1987, when the migration regime began to shift. Rural labor migration was on the rise, and many large coastal cities witnessed huge influxes of rural migrants. The government relaxed the urban administration standard, which partly caused the number of "cities" and "towns" to increase several fold. The 1987 Survey captures these changes in the migration process very well. In particular, it has a much better representation of non-hukou migrants than previous surveys. On the other hand, the increase in the number of "cities" and "towns" distorts the overall picture of migration. The survey captures the impression that the annual migration rate doubled from three per thousand in 1982 to seven per thousand in 1986, but even taking into account the great increase in migration in the mid-1980s, this is probably exaggerated. In part, it is an artifact of the post-1984 reclassification of cities and towns. However, it is difficult to gauge the extent to which urban reclassification influenced the survey results. As discussed earlier, another problem with the 1987 Survey is its use of the "first standard" of urban definition, which may distort the migration flows along the urban hierarchy by exaggerating both immigration and outmigration flows in urban places, particularly towns.

The 1990 Census

The 1990 Census was conducted on July 1, 1990. Since the census is supposed to count every citizen, there is no sampling error involved. But of course, there are the usual under-counting and double-counting, as in any census in the world. In China, prior to the census and micro censuses, there are usually large-scale campaigns to prepare for the actual counting, some involving the removal of people who are not in their de jure residence. As a result, the censuses may undercount non-hukou migrants, since many of them were asked to return to their hukou residence. Unlike the 1987 and 1995 micro censuses, the 1990 Census does not count children aged five and under as in the migrant category. Moreover, it only presents an overall number of migrants for the five-year period as a whole, without annual migration figures for the intervening years.

The census had three questions related to migration (see Appendix 2). The first is on hukou type and status. The 1990 Census is the only national data set that carries information on hukou status (i.e., agricultural and non-agricultural). The second question is about migration reasons, with the same possible options offered in the 1987 Survey. The third question is about residence five years ago and type of residence. A number of problems are connected with this last question, complicating the comparison with other data. First, because the survey asked about prior residence rather than the last move, it ignores moves to and from the hukou residence within the five-year period, thus recording only a large part, but not the full extent, of migration in that five-year period. Second, the 1990 Census uses different urban categories for "origin" and "destination." The urban categories listed are city street, town and township, while those listed for "destination" are city, town and county. This makes tabulation of migration flows along the rural-urban hierarchy problematic and complicates comparison with other data sets.

The 1990 Census uses a one-year requirement to determine who is a non-hukou migrant, which is stricter than the micro censuses but similar to the 1986 Survey. Moreover, the geographical threshold for determining a move is also larger than in the micro censuses: only moves crossing the boundaries of

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56 Ma et al. 1997.
59 Other research seems to share our assumption. Ma et al. (1997) dropped the first two years of the 1987 Survey to avoid inconsistency across the years.
60 Renkouban 1991.
61 The undercounting may be less severe in China's 1990 Census than in other countries, although censuses in China have their particular problems, as discussed below.
cities and counties are counted as “migration.” Since the smallest administrative unit in the 1987 Survey was the town and the urban district in the 1995 Survey, the 1990 Census should include fewer people classified as “migrants” than these micro censuses.

The 1995 National Population Survey
The 1995 Survey was conducted on October 1, 1995. It was administered by the National Population Sampling Survey Office under the State Council at the top and the population survey groups of township, town and street office government at the bottom. It sampled 1,558 counties or cities, and 47,471 village and residential committees. The total population covered was 12.37 million. The sample size of provinces was proportional to the square root of total population per province. The sampling unit was the residential committee or village committee.

The provincial governments employed two types of sampling strategy: (1) a two-stage sampling method by which townships (town, street) were sampled directly from provinces, and then residence and village committees; and (2) a three-stage sampling method by which counties (city and urban district) were first sampled and then township (town and street), and committees. One can see that the scope of the 1995 Survey is much larger than the 1987 Survey, including almost four times the number of basic units (village and residential committees) than the latter. It is thus less clustered and should be more representative.

There were five questions related to migration. The first was on hukou type, as in the 1990 Census; and the second on time of migration into the survey place (before 1990 or after; the latter specified by year). The other three questions, which were new to the 1995 Survey, concern the type of origin. One was aimed specifically at non-hukou migrants to determine whether they came from another county, city or city district. The other two were aimed at those who had moved within the five-year period and inquired after the place of origin and place of residence five years ago. The answer to these two questions might well differ, for example in cases of migration from a third place, return migration, and so on. A drawback of the 1995 Survey is that it omitted the question on migration reasons, which means that this survey cannot be used in studies on the motivations and channels of migration in the early 1990s and changes in migration patterns over time.

While the 1995 Survey maintained the same six-month standard as in the 1987 Survey for “duration of stay at survey residence” in defining migration, it also introduced certain changes. It defined “migration” as any move across the boundary of a city (county level), county, or urban district with hukou change, or being away from the place of origin for six months without hukou change. Because this survey used the urban district as the smallest administrative unit, for the first time information was provided on intra-city migration on the national level. Since a city is generally regarded as a single labor market, some hold that moves within a city should not be classified as migration, which is associated with a change in employment and social networks. However, some researchers argue that it is useful to count moves within cities, especially in view of the huge size of China’s large cities. Furthermore, the 1995 Survey posed several questions on migration origins, particularly for non-hukou migration. Cross-comparison of tabulated outcomes to these questions may yield additional information on interesting aspects of the migration process such as return migration. Lastly, the 1995 Survey is also the only one that includes information on actual origins with regard to intra-provincial migration, which can be used to construct intra-province migration flow matrices. In sum, the 1995 Survey provides hitherto unavailable data which may shed additional light on national migration patterns.

Further Issues

In the following sections, we will address three further issues associated with the comparison of the major national data sets: (1) the divergent results they yield even for the same period; (2) the issue of whether the hukou migration statistics include intra-city movements; and (3) the limitations and opportunities offered by the major data sets in studying spatial patterns of migration.

Divergent migration rates
It is natural that the volume of migration fluctuates across time and space as socioeconomic conditions change. But different sources may use different means to measure migration even for the same period. The major national data actually yield widely diverging migration rates. The greatest difference is between the hukou statistics on the one hand and the census and micro censuses on the other. The annual immigration rates calculated from hukou statistics are around 17 and 18 per thousand in the mid-1980s, while the annual rates, based on both hukou and non-hukou migration, taken from the 1987 Survey and 1990 Census are only about 6 and 7 per thousand (see Table 2). This is quite puzzling at first glance, as one would expect the latter rates to be higher than the former. We have calculated the immigration rates in the mid-1980s from the 1986 Migrant Survey micro data, and the rates obtained are in the same order of magnitude of those based on hukou migration data.

63 Renkouban 1997.

64 Zhang Shanyu 1995.
Table 2. Comparison of annual migration rates for China, mid-1980s (per thousand).

<table>
<thead>
<tr>
<th>Year</th>
<th>MPS</th>
<th>1986 Survey</th>
<th>1987 Survey</th>
<th>1990 Census</th>
</tr>
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<tr>
<td>1982</td>
<td>17.24</td>
<td>17.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>14.98</td>
<td>15.8</td>
<td>3.40</td>
<td></td>
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<tr>
<td>1984</td>
<td>17.43</td>
<td>21.8</td>
<td>4.83</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>19.01</td>
<td>26.4</td>
<td>6.52</td>
<td></td>
</tr>
<tr>
<td>1986</td>
<td>17.52</td>
<td>7.40</td>
<td>6.25</td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>18.59</td>
<td>6.45</td>
<td>6.25</td>
<td></td>
</tr>
</tbody>
</table>

Sources: SSB 1988, and 1990 data from Zhuang 1995. The 1986 rates were calculated by the authors on the basis of the 1986 Survey micro data.

The discrepancies shown in Table 2 and the apparent large inconsistency noted above suggest that a systematic comparison of major data sets is necessary before any further work can be done. In his article on hukou statistics, Zhang (1999) briefly compared the hukou migration rates with those of 1987 and 1988 Surveys and duly noted the differences. He concluded that the hukou statistics include intra-city moves. Our view, however, is a different one, as explained in the next section.

Do hukou migration statistics include within-city moves?

The issue whether or not hukou migration data include intra-city moves is not directly addressed in the literature. Some researchers suggest that they do, while others disagree. Arguments put forward in favor of the former view are the facts that (1) the migration rate in hukou statistics is higher; and (2) the hukou administration area is very small compared to the city as a whole, since all moves across hukou areas have to registered, they probably end up in the statistics reported to higher-level authorities.

However, documentary materials suggest that the hukou statistics do not include intra-city movement. Prefacing the population and migration statistics, MPS explains that immigrants and outmigrants are those who move in or out of a city (excluding counties under city administration), a town or township. Those who change residential address within the city, town or township are not counted in the immigration and outmigration statistics. Such changes can be regarded as population movement or population moving within city, town and township, and are thus discounted from the migration figures.

While it is true that all moves across the hukou administration area are registered, it should be pointed out that hukou migration across city boundaries is treated differently from that within the city: "Citizens are not granted migration certificates when they change their hukou residence within cities (not including suburban counties); only if they move out of cities, or move between towns (townships) within counties." This difference makes logistical sense since the government’s major concern is to control immigration into cities. Thus, it is reasonable for the state to keep specific statistics on migration across city boundaries.

One way to address the question is to compare the migration figure in a particular city as reported in the hukou migration statistics with that reported in a survey or census which does not include within-city movement, assuming that both of them are accurate. If the former is substantially higher than the latter, this would support the argument that within-city movement is included in the hukou data. But if the figures fall in the same range, this would suggest that it is not. The problem, however, is that one has to be sure that one is comparing the same thing. The ideal case would be a city that does not administer any counties because inclusion of counties complicates the comparison in view of the different spatial thresholds used in defining migration. The former count "migrants" as those who move across the boundaries of towns and townships, while the 1990 census only takes into account those who move across county boundaries. This difference tends to introduce an upward bias in the hukou statistics. Therefore, what we need is a case in which the data on the city proper is distinct from the data about its counties.

On the national level, only three centrally administered cities match this requirement. We chose Shanghai and compared the immigration volumes as listed in the 1990 Census with those in the hukou statistics. From the 1% 1990 Census Migrant Micro Data, we calculated the number of immigrants who came

66 Scharping 1997, 36; Zhang Li 1999.
67 Yang Yunyan 1994, 128.
68 According to the regulations, when citizens move out of their hukou administration area, they or their household heads should apply for outmigration to the hukou registration departments (usually Public Security Bureaus), in order to obtain migration documents, and then they have to cancel their original hukou (Zhang and Wang 1995, 484).
to the city proper with an official change in hukou. The total number was 341,500. The number of immigrants according to the hukou statistics was 511,000. Thus, the census figure is only about 67% of the latter. As already indicated above, we should expect a larger figure from the hukou statistics in view of the following three factors:

(1) the Census did not include those who immigrated at age five and under;
(2) the Census did not include those who moved away from Shanghai and returned within the five-year period prior to the time of survey;
(3) of those people who migrated several times during the preceding five years, the Census only recorded one move, while the hukou migration statistics recorded all of them.

The above three factors may make up an additional 30 to 40% to the Census figure, and this more or less removes the difference between both sets of statistics. Thus, our small “test” is consistent with the MPS (1988) explanation that hukou migration statistics do not include within-city movement.

We may also approach the issue from yet another perspective. What is the volume of migration if within-city movement is included? Or, put in other words, how large is within-city movement compared to across-city migration? Though we do not have systematic data, anecdotal evidence suggests that within-city movement is substantial. The hukou statistics of Baotou city show that within-city movement was almost triple that of across-city movement during the period of 1974–1982. During our field interviews in Wuhan, we also found that about half of total migration took place within the city. There is no reason to assume that this should not apply to Shanghai. Therefore, if the published hukou migration statistics had included within-city movement, the hukou migration figure would have been several times larger than it is now.

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Spatial patterns

The study of spatial patterns is an important topic in migration studies. Researchers are interested in the migration flows across geographical boundaries, rural-urban migration and its contribution to urban growth. We may also include migration flows across geographical areas and throughout the urban hierarchy. What light do the major national data sets shed on the spatial patterns of Chinese migration?

All the surveys and the 1990 Census carry information on geographical patterns, albeit to a different extent. The hukou migration statistics on national and city levels recorded by the MPS, for example, do not carry information on migration origins. Interestingly, while there are many studies on geographical migration patterns on the provincial level, there are none concerning the intraprovincial level. This might be explained by the importance of inter-provincial migration in terms of population redistribution and regional development, or simply, the lack of data. Most surveys and censuses do not provide any information on geographic origins of migration. Only the 1995 Survey recorded the origins of migration for intra-provincial migration (see Appendix 2), which made it possible for the first time to examine migration flows within provinces. For example, it would be interesting to map the geographical patterns of migration within Jiangsu and Guangdong Provinces and investigate the possible causes of these patterns. This could throw some light on questions such as the impact of township and village enterprises on migration, or the validity of the “migrant network” hypothesis.

The 1986 Survey lists questions on types of origin that carry implicit information on migration distance. It is actually the only data set that provides information on migration distance before the reform era. For within-province migration, it uses categories of “other city,” “other county within city,” “suburban county,” “within town,” and “within county outside town” (see Appendix 2). These categories give some idea of the distance involved, and migration along the urban hierarchy, although there is no information on actual places as in the 1995 Survey.

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72 Shanghai in the 1990 Census tabulation includes all the counties. Here we need to restrict our investigation to the immigrants coming into the city proper (not including towns and counties).
73 The total number of migrants into greater Shanghai, according to the full census data, is 873,762, a smaller figure than the 1,179,000 from the 1% micro migrant sample.
74 The number of immigrants is available for 1985 to 1988 in Gui and Liu 1992, 537. Since the Census covers the period from July 1, 1985 to July 1, 1990, we first extrapolated numbers for 1989 and 1990, and then averaged those for six months in 1985 and 1990. This is reasonable since the number of hukou migrants was moderate in this period.
75 This estimate is based on the 1986 and 1995 Surveys.
76 Yue 1983, 350.
77 Everything else being equal, we may assume that the larger the city, the more districts it has, and thus the larger is its volume of within-city movement.

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78 In the migration registers, migration origins have to be specified, sometimes to the extent of providing information on previous work units and address (see discussion in the text earlier).
79 Chan et al. 1999; Ma 1996; Ding 1994; Liang and White 1996.
80 The 1995 Survey tabulation data do not include this information, only the micro data set.
81 The essence of the hypothesis is that migration flows tend to concentrate in certain places since migrants often rely on migration networks of friends and relatives for information and accommodation before and after they migrate. For detailed analysis, see Greenwood 1969, and Massey et al. 1993, 4.
Information on migration along the urban hierarchy is widely available, and it is one of the most often researched aspects of Chinese migration. All the major national data sets, except the hukou statistics, list questions concerning the origin of urban migration. However, comparison across data sets is very complicated due to different definitions, urban reclassification, urban growth, spatial coverage, sampling bias and so on. As discussed earlier, the 1987 Survey and 1990 Census use the "first" and "second" standard, respectively, to determine what "urban" means, which makes them incomparable. The different definitions of "urban" for origin and destination in the 1990 Census also do not help. Urban reclassification complicates and hinders comparison, especially if one wants to compare a period in which large-scale reclassification has taken place with an earlier period.

Conclusion

It is clear that no single data set provides all the information needed to understand the complicated process of migration in China. Each data set has its own strengths and drawbacks. Knowing them is a prerequisite in selecting the right data sets for a particular kind of research. For example, for research into the spatial migration patterns within a province, or the extent of intra-city movement, only the 1995 Survey carries the appropriate information. For studies on the impact of hukou status on migration, only the 1990 Census is a useful source. Moreover, an accurate understanding of the pros and cons of all the available data sets will help one avoid many of the inherent pitfalls not readily apparent in making generalizations from a single data set, as well as explore different perspectives from which to examine the overall picture of Chinese migration. A thorough awareness of the various comparability problems will provide the researcher with the basis needed to combine data from the different sets to construct an overview of the patterns and changes in Chinese migration during the last half century. The aim of this article is to take a first step to move away from the current overreliance on single data sets, and encourage future systematic comparison and synthesis of the available national data on Chinese migration.

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Bibliography


### Appendix 1. Categories of Migration Reasons in Major National Migration Data Sets

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<table>
<thead>
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<table>
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<tr>
<td>Back to origins</td>
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</table>

Notes: The categories were taken from the survey questionnaires; the Census and statistical tabulation in the Hukou migration statistics from the Ministry of Public Security. Job transfer in the 1990 Census also included demobilized soldiers and officers (see note 14).
### Appendix 3. Coverage, Definitions and Potential Biases of Pre-Reform National Migration Data

<table>
<thead>
<tr>
<th>Data sources</th>
<th>Coverage</th>
<th>Definition of &quot;Migration&quot;</th>
<th>Definition of &quot;Urban&quot;</th>
<th>Error and Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986 Survey of 74 Cities and Towns</td>
<td>74 cities and towns in 16 provinces</td>
<td>One year for non-hukou migrants</td>
<td>Large or small urban centers</td>
<td>Non-random sampling in choosing cities and towns</td>
</tr>
<tr>
<td></td>
<td>All types of movement (immigration, migration, short-term and long-term out movement, temporary migration)</td>
<td>City and town boundary as spatio-temporal threshold (including suburban districts but excluding suburban county)</td>
<td>N.A.</td>
<td>Different sampling ratios for cities and towns</td>
</tr>
<tr>
<td></td>
<td>All years before 1987</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1988 Two Per Thousand Fertility Survey</td>
<td>All China through 815 sampling units</td>
<td>Six months for non-hukou migrants</td>
<td>Resident and village committees (second standard)</td>
<td>Migration questions of secondary importance</td>
</tr>
<tr>
<td></td>
<td>Move into sampling units</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inter-provincial migration asked separately</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All years before 1988</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministry of Public Security Hukou Registration</td>
<td>Province as unit for 1953–1987</td>
<td>Any move across the boundary of city, town, or township associated with official change in resident hukou (excluding suburban county)</td>
<td>Administrative status (first standard)</td>
<td>Problems associated with registration and administration, e.g., unregistered moves, under reporting or over reporting for financial or political reasons</td>
</tr>
<tr>
<td></td>
<td>Hukou migration only</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Further disaggregation into pref, city, town and county from 1992 onwards</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SOURCES:**
### Appendix 4. Coverage, Definitions and Potential Biases of Post-Reform Migration Data

<table>
<thead>
<tr>
<th>Data sources</th>
<th>Coverage</th>
<th>Definition of Migration</th>
<th>Definition of Urban</th>
<th>Error and Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987 1% Population Sample Survey</td>
<td>Whole China Migration between 1982–87</td>
<td>Six months for non-hukou migrants; City, town and county as the minimum unit (includes only that part of intra-county migration which is into registered towns); Ask about the last move and time stay in survey place (so non-hukou migrants for more than five years);</td>
<td>Administrative standard (first standard)</td>
<td>Different sampling ratios for provinces (e.g., higher for the three largest cities) but adjusted in published data</td>
</tr>
<tr>
<td>1990 The Fourth Population Census</td>
<td>Whole China Migration between 1985–90 for age five and above</td>
<td>One year for non-hukou migrants; City and county as the spatial threshold; Ask about usual residence exactly five years ago</td>
<td>Village and street committees (second standard)</td>
<td>Inconsistency of urban definition for origin and destination;</td>
</tr>
<tr>
<td>1995 1% Population Sample Survey</td>
<td>Whole China Migration between 1990–95</td>
<td>Six months for non-hukou migrants; Spatial boundary of city (county-level), county and urban district; Ask about both usual residences exactly five years ago and the last move;</td>
<td>Village and street committees (second standard)</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:**
2. 1990 Census: Yang 1994
4. Since the last move could have been more than 5 years prior to the survey, the 1987 Survey provides information on non-hukou migrants staying more than 5 years.

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### Appendix 5. Reference Guide to the Major National Data Sets

<table>
<thead>
<tr>
<th>Major Data Set</th>
<th>Data Description</th>
<th>Related Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995 1% National Population Survey</td>
<td>Remklouban 1997</td>
<td>Ma 1999</td>
</tr>
</tbody>
</table>

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### Appendix 6. Migration in China: A Review of Available Data and Research

There was little research on Chinese migration before the economic reforms, whether inside or outside the country. For Western scholars in particular, lack of information was the main obstacle, while Chinese research was hampered by the fact that social science as a whole was a forbidden area, including the topic of human migration. For the pre-reform era, data on migration is limited to three kinds of sources, all of which were restricted to official use only and not published: (1) the household registration migration statistics, which include detailed information about migration and residential mobility; (2) the first two censuses of 1953 and 1964, which did not pose any migration-related questions; (3) official documents on regional labor transfer in the mid-1950s and investigations into urban employment and unemployment in the 1950s and 1960s as well as past migration. These documents yield a certain amount of migration information for the first ten years of the PRC.\(^3\)\(^1\) Research published in the pre-reform period is rare. Bernstein's work on the rustication of urban-educated youths is admirable considering the difficulties in obtaining information (Bernstein 1977). His major source of data was the newspapers, and the actual experiences of many informants. White's and Howe's studies of the labor system touched on migration in the 1950s and 1960s (White 1978; Howe 1971).

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\(^3\) During our search of the archives, we came across some interesting migration tables with detailed information on immigration and outmigration for a few cities.
Even in the first ten years after 1978, migration studies did not advance much, due to the lack of data. Without direct information on migration, some researchers used the 1982 Census to estimate net migration at the provincial level (Banister 1986; Goldstein 1990). But in the late 1980s, migration became a focus of official and academic attention as rural laborers started to flood the coastal cities. A number of national migration surveys were conducted, notably the 1986 Urban Migration Survey of 74 Cities and Towns. Other large surveys also began to include migration questions, for example the 1987 National Population Survey and even the 1988 Fertility Survey. In addition, the government ended the practice of restricting access to the hukou migration statistics for official use only and released them for publication. The results of the 1990s Census were also published. Furthermore, there was a spate of small surveys on specialized topics and specific areas, some conducted in the late 1980s, such as the Shanghai Floating Population Survey, but most in the 1990s (Gui and Liu 1992; Zhang 1989; Goldstein and Goldstein 1996). Research based on all these new data began to appear in the mid-1990s, which added to the pool of knowledge concerning various aspects of the migration process, such as:

1. the basic scale, patterns, and factors of migration in different periods (Ma and Wang 1993; Shen and Tong 1992; Ma 1996; Zhang and Wei 1995);
2. how the post-reform economic transition radically transformed migration patterns (Yang 1994; Ma 1996; Yang and Goldstein 1990; Day and Ma 1994);
3. the strong impact of socialist institutions, particularly the hukou system on Chinese migration (Zhang and Wang 1995; Chen and Selden 1994; Yang 1993)
4. the increasing influence of economic factors on internal migration, albeit filtered through institutions (Chan et al. 1999; Chan and Zhang 1999; Liang and White 1996, 1997; Fan 1996; 1999);
5. the increasing share of rural migrants in Chinese internal migration (Rozelle 1999; Roberts 1996; Wan 1995; Ma 1999);
6. basic interrelationships between migration and the labor market (Knight and Song, 1995);
7. the impact of recent migration on Chinese society (Solinger 1999; Chan 1998; Smith 1997; Zhou 1996).

In general, scholars tend to focus only on one data set. For example, Ma and Wang published several monographs using the 1986 Survey data (Ma and Wang 1988, 1989, 1993, 1994; see also Day and Ma 1994). Liang and White based two publications on the 1988 Fertility Survey (Liang and White 1996, 1997). Ma, Liaw and Zeng focused on the 1987 National Population Survey (Ma et al. 1996, 1997). Zhang Qingwu published several articles based on the hukou migration statistics (Zhang 1994; Zhang and Wei 1995; Zhang and Wang 1995). Rarely does one come across research based on several data sets. This is quite understandable since these data are not widely available, and even if one obtains access, the cost involved in familiarizing oneself with every data set is high. This is especially true for micro data, which require tremendous effort and time to process and adapt to workable formats.

In the last few years, a large number of surveys have been conducted, most of them small-scale and specialized (Goldstein and Goldstein 1996; Wang 1995; Rozelle 1999; Liu 1995; Zhao 1999; Roberts 1996). Although research based on these special surveys can throw much valuable light on certain aspects of the migration process, a systematic exploration of the major national data sets is needed to obtain an overall picture of Chinese migration in the long-term and on a national scale.

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84 These examples are most relevant for those who have access to the micro data. Compared to the published tabulated data, the micro-data list individual cases and allow testing of specific research questions.
85 For exceptions, see the introduction to this article.