
Paper 11

Changing urbanization processes and in situ rural-urban transformation: Reflections on China’s settlement definitions

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China’s urbanization has experienced tremendous changes since the 1980s. One of the most important changes has been the emergence and development of in situ urbanization in the Chinese countryside. This new urbanization pattern has been mainly achieved through the transformation of rural settlements into urban or quasi-urban ones through the growth of manufacturing and other non-agricultural activities in rural areas. It has transformed the traditional function and landscape of many rural areas, and created many new urban or quasi-urban centers, which have attracted many rural residents in the neighboring areas to settle in instead of migrating to existing cities, especially large ones.

However, until recently such an important change in China’s urbanization process has not been well understood by students of urbanization. This situation has much to do with the inadequacy of China’s settlement definitions, and has been further complicated by China’s urban administrative and definitional changes since the 1980s (Zhu, 1998). Although these problems have been realized since the 1980s and to a certain extent solved by the adoption of the new urban definition for the 2000 census, China’s urban definitions and statistics are still confusing and subject to misinterpretation. More importantly, China’s current settlement definitions, including the one adopted in the 2000 census, are still based on the traditional built-up area based dichotomous approaches, and therefore not well equipped to fully reflect the in situ transformation of rural areas. Obviously, there is a need to further improve China’s settlement definitions and ways of monitoring settlement changes, and a close examination of China’s new urbanization patterns and the related definitional, statistical, and conceptual issues is a necessary step.
Examined in the international context, the above problems with China’s urban definitions are not unique to China. As pointed out by Hugo, Champion and Lattes (2001), ‘the simple urban/rural dichotomy has long been recognized as an over simplification of the complexity of human settlement systems and the fact that these systems are constantly undergoing change’. In fact, in developed countries, various efforts have already been made to revise the obsolete urban definitions to reflect the blurring rural/urban distinction and to introduce new dimensions relevant to modern settlement systems (e.g. Lang, 1986; Coombes and Raybould, 2001). The blurring rural/urban distinction is also true of developing countries other than China, evidenced by the existence of commuters and circular migrants with double residential identities in terms of the population and the existence of ‘Desakota regions’ in Southeast Asia in terms of the landscape (Hugo, 1982; McGee, 1991). Therefore, a discussion on China’s urban definitional problems is of great significance not only because of the practical need in China itself, but also due to its importance for a better understanding of today’s changing rural-urban transformation process and residential systems in the world. As I have demonstrated elsewhere (Zhu, 1999), not only are the scale and geographical coverage of the in situ rural-urban transformation in China unparallel in developing countries, but also the context of this transformation, such as the geographical locations both within and beyond the vicinity of large cities, high population densities, and improved transport and communication facilities, is of great importance for conceptualizing the urbanization processes and defining settlement systems in the international context, especially in developing regions.

This paper tries to address the above issues. It starts with reviewing China’s overall urbanization process since the early 1980s, and the relevant definitional and policy changes. Then it examines in more details the process of in situ urbanization, focusing on
various dimensions of the new rural-urban transformation pattern and the blurring of rural/urban distinction in the new urbanization process. The last part of the paper will discuss the implications of China’s settlement system changes, especially the new form of in situ rural-urban transformation and the blurring of rural/urban distinction, for the modification of settlement definitions and of ways for monitoring settlement evolution.

The Hukou system and urban definitions before the reform era

China was a typical dichotomous society in terms of rural-urban relation before the reform era. Its unique ‘Hukou system’ (the household registration system) divided people into two distinct groups: the agricultural population and the non-agricultural population. As most of the non-agricultural population lived in the urban areas, the agricultural/non-agricultural dichotomy was very much identical to the rural/urban dichotomy. While those people with non-agricultural Hukou status enjoyed many privileges provided by the State, including heavily subsidized food and housing, free education, medical care, old-age pensions and other services, it was extremely difficult for ordinary rural residents to have their Hukou status transferred from an agricultural one into a non-agricultural one, and hence to move from rural to urban areas, as having non-agricultural urban Hukou status was a precondition to have access to urban employment, commodity supply, and housing, which was strictly controlled by the State. In a similar way, the Hukou system also effectively prevented people moving from a place lower in the residential hierarchy to one higher in the residential hierarchy, especially large cities (Zhu, 1999: 102-4).

As the Hukou system effectively separated the rural population from the urban population

1 China’s Hukou system can be dated back to the Northern and Southern Dynasties some 1,500 years ago (Liu, 2001: 100). Its recent form in the PRC era was shaped through the promulgation of ‘PRC regulation on household registration’ in 1958. This regulation stipulates that all citizens must register themselves to relevant authorities at the places of their permanent residence, with the household as the basic registration unit; all births, deaths and migrations are required to be registered by the same authorities; and the transfer of one’s household registration from a rural to an urban place needs to be approved. Besides, all people are assigned a registration status as either ‘agricultural’ or
and controlled rural-urban migration and urbanization, China’s rural/urban settlement definitions were relatively simple before the reform era. According to the latest urban definitions before the 1980s promulgated in 1963 (Central Committee, 1986: 96-7), they were basically based on the size of the population and the proportion of its non-agricultural population by Hukou status. A place could qualify as a town, the urban unit lowest in the urban hierarchy, if it had a minimum of 3,000 persons with 70 percent being non-agricultural, or a population of 2,500 to 3,000 with more than 85 percent being non-agricultural. An urban place with a population of more than 100,000 could qualify as a designated city, but its suburban area should be restricted to a certain scope so that the agricultural population of the city would not be more than 20 percent of the total population of the city. These rural-urban definitions were adequate in reflecting China’s urban settlement system before the reform era.

Urban statistics based on the above urban definitions were also relatively reasonable in reflecting China’s urban population and urbanization process before the reform era. Before the 1980s China's urban population was primarily composed of the non-agricultural population of cities and towns (NAPCT) as its main part and the rest of the total population in the urban administrative areas (including the suburban areas outside the cities and towns proper) as its subsidiary part. The urbanization process was mainly determined by the growth of the NAPCT, which was sponsored and strictly controlled by the State and therefore whose statistics were important for the planning purpose of the government. However the total population of cities and towns (TPCT), which includes the total population within the administrative areas of designated cities and towns (including the agricultural population of suburban areas), was usually regarded as a more reasonable representation of the size of the total urban population, because

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1 ‘non-agricultural’ in the registration system.
2 Places commanding special administrative, strategic, or economic importance could qualify for city or town designation with a smaller population. For more details see Zhu (1999: 211-8).
most of the agricultural suburban population were often considered either involved in non-agricultural activities or/and using the urban infrastructure intensively in the urban administrative areas (Chan, 1994: 23-30; Zhu, 1999: 41). Both series of data on urban population (TPCT and NAPCT) were published annually for different purposes of use, with the former referred to as the first urban definition (National Bureau of Statistics of China, 2001: 103).

**China’s urbanization since the 1980s: changing definitions and processes**

New urbanization processes vis-à-vis new urban definitions
The adoption of economic reform and open door policies since the late 1970s have fundamentally changed the simplicity of the urbanization process and the applicability of the above urban definitions in China. These changes can be summarized in the following three aspects.

1. *The breakdown of the Hukou system*
Since the 1980s, the invisible wall created by the *Hukou* system between the cities and the countryside has gradually fallen down with the implementation of various reform policies. In the early 1980s, China introduced the household responsibility system and subsequently abolished People’s Commune system in the rural areas. These reform measures revealed and intensified the once seemingly invisible problem of rural surplus labor. According to Taylor and Banister (1991: 90-1), the number of rural surplus laborers was 132.3 million in 1980, accounting for 42.5 percent of the total agricultural workers. Since they could no longer rely on the People’s Communes for employment and livelihood, many of them would have to enter cities to find outlet. At the same time, the government gradually loosened the control over rural-urban migration and the agricultural to non-agricultural transfer of *Hukou* status, and the economic development
and reform also undermined the effectiveness of the *Hukou* system in controlling rural-urban migration. In 1984 the State Council decided to allowed farmers and their dependents to move to designated towns (excluding county-level government seats) for permanent settlement, provided they met certain conditions so that they did not add financial burden to the State (China, State Council, 1984a). In 1985 the Ministry of Public Security promulgated ‘Interim regulations regarding the management of temporary residents in cities and towns’, symbolizing the beginning of legal residential status of migrants without local *Hukou* registration (Liu, 2001: 102). Since then, it has become increasingly easier for rural residents to enter urban areas as temporary residents and seek employment and living opportunities, mostly through non-State sectors, although they are still disadvantaged in the urban areas because of their agricultural, non-local *Hukou* status. Thus since the 1980s an increasing number of temporary residents, or more commonly referred to as the ‘floating population’, have entered Chinese cities and towns. According to some widely accepted estimate, the volume of the floating population increased from 30 million in 1982 to about 80-100 million in the mid-1990s, with most of its members in the urban areas (Zhu, 2001a). A considerable proportion of the floating population leave some members of their families behind at home, change their living and working places frequently, and do not have the intention of settling down in a final destination, due to not only their unfavorable *Hukou* Status, but also their household strategies to minimize migration cost and bring back as much saving as possible to their hometowns (Zhu, 2001a). The emergence of and the fast increase in the floating population makes *Hukou* no longer a useful criterion for defining rural/urban population, and raises the issue of how to categorize the floating population to reflect their double identities in relation to both their hometowns and their temporary places of residence.

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3 These disadvantages include restricted access to certain kinds of employment, extra fees for children’s education, no entitlement to some social benefits such as subsidized medical insurance and low price housing, etc. However, these disadvantages have been also increasingly reduced in the process of reform. In fact, many cities in China introduced new regulations to allow temporary residents to have local urban *Hukou* status in 2001, and it seems that more and more cities will follow the suit.
2. The definitional and administrative changes and the emergence of reclassification as a major component of urbanization

Since the 1980s rural-urban reclassification has become a major component in China’s urban growth and urbanization. Contrary to the policies restricting urban development before the reform era (Chan, 1994), the Chinese government has taken increasingly more positive attitude towards the designation of cities and towns, and the number of officially designated cities and towns has increased substantially since 1978, as can be seen from Table 1. This is a sharp contrast to the stagnant number of cities and the shrinking number of towns in the pre-reform era. However, the designation of cities and towns since the 1980s has been accompanied by profound rural/urban administrative and definitional changes, which caused rural/urban administrative boundaries irrelevant for defining rural/urban population and the total population of cities and towns (TPCT) invalid for reflecting the real urban situation. The most important change of this kind was that in 1984 China’s State Council relaxed the criteria for the designation of town status, and adopted the policies of ‘abolishing townships and establishing towns’ (chexiang jianzhen) and ‘town administering village’ (zhengguancun) whereby townships were abolished and their territories and populations were placed under the jurisdiction of towns (China, State Council, 1984b; Ma and Cui, 1987: 384-5; Lee, 1989), to promote the development of small towns, which were regarded as reservoirs of rural surplus labor and focal points of rural development. According to the new criteria and administrative structure, townships with a total population of less than 20,000 can be designated as towns if the non-agricultural population in the township government seat is more than 2,000; townships with a total population of more than 20,000 can be designated as towns if the

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4 For a better understanding of the following discussion on China’s urban and rural definitions and administrative structure please refer to Figure 1.
5 Please note that although ‘town’ and ‘township’ have very similar meaning in English, they are widely used as the translation of the Chinese terms ‘zhen’ and ‘xiang’ respectively, whereas ‘zhen’ is an urban administrative unit while ‘xiang’ is a rural administrative unit in China’s administrative system (see also Figure 1).
non-agricultural population in the township government seat is more than 10 percent of the total township population. It is important to note that the conversion of a township into a town involves not only the territory and its population of the built-up area, but the entire territory and population of the administrative area, making the total population of the town (TPT) a serious over-representation of the really urbanized population of the town.

Table 1 about here

Figure 1 about here

Similarly, in 1986 the policy of ‘abolishing counties and establishing cities’ (chexian jianshi) was introduced, with the effect of exaggerating the really urbanized population of the cities represented by the statistics of the total population of cities (TPC) because of the inclusion of many agricultural areas and their populations into TPC. The city definitions have also experienced major changes since the 1980s. Apart from changes in the criteria on the size of population and the share of non-agricultural population, the new definitions introduced economic criteria for the designation of cities, and made the criteria dependant on the population densities. The latest version of the city definition promulgated in 1993 is summarized in Table 2.

Table 2 about here

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6 This does not preclude some economically developed towns that have become the regional economic centers being designated as cities and separating from the rest of the counties.

7 Counties meeting the criteria in this table are designated as county-level cities. They can be further designated as prefecture-level cities if meeting certain higher criteria (Dai, 2000: 77). Besides, cities are also classified into small cities (with a non-agricultural population smaller than 200,000), medium-sized cities (with a non-agricultural population of 200,000-500,000), large cities (with a non-agricultural population of 500,000-one million), and very large cities (with a non-agricultural population of more than one million), according to their size of the non-agricultural population.
3. The increasing prevalence of in situ rural-urban transformation

While the increasing rural-urban migration and reclassification described above are visible changes in the urbanization process, since the 1980s there have been some equally important, albeit latent processes behind the above changes, which have made a great contribution to China’s urbanization, but are not fully reflected in the conventional urban definitions and statistics (Wang and Zhou, 1996; Zhu, 1998). The most important of such processes has been the fast development of rural enterprises, which were named commune and brigade enterprises before 1984 and have been renamed township and village enterprises (TVEs) since then. Contrary to it’s policies restricting rural areas from participating in the industrialization and urbanization processes, since the 1980s the Chinese government has actively encouraged the development of TVEs in the rural areas, which were expected to play major roles in absorbing rural surplus labor, promoting the development of small towns, and preventing too many farmers from entering cities. As will be examined in more detail later, this development has not only been the major driving force for the substantive urban development of small towns, but profoundly changed the traditional function and image of rural settlements in China, especially its coastal areas, bringing urban-like forms of production, infrastructure, and landscape to an increasingly wide areas well beyond the boundaries of urban built-up areas. This kind of rural-urban transformation poses great challenges to the traditional dichotomous settlement definitions and statistics, because what it involves is not a clear-cut transition from a definitely rural to a definitely urban settlement, but the accumulation of degree of urbanity in rural settlements. China’s official rural/urban boundaries and the Hukou-based rural-urban classifications have become even less meaningful, as more and more rural settlements and their residents can perform urban functions and obtain urban characteristics without having non-agricultural Hukou status or locating in urban areas.

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8 Foreign funded enterprises have been another force promoting rural-urban transformation in China. However if they are located in the rural areas, they are often TVEs as well (Zhu, 2000: 421; Ru, 2001: 99-100).
The statistical series of NAPCT, although still used for urban and other social economic planning by the government, has thus become a serious underestimate of the real scale of rural-urban transformation in China.

Modifications to the urban definitions in the 1990 and 2000 censuses

To tackle the problems of inconsistency between the administrative boundaries of cities and towns and the boundaries of their really urbanized areas, two modifications were made to the official urban definitions in the 1990 and 2000 censuses. The first modified urban definition was commonly called the second definition and adopted in the 1990 census (National Bureau of Statistics of China, 2001: 103). According to this definition, the city population refers to the populations in the districts of designated cities with district establishment, and the populations in the streets administered by designated cities without district establishment; the town population refers to the populations in the residents’ committees of designated towns administered by the cities without district establishment and designated county towns. In other words, the modified definition takes TPCT as the urban population for cities with district establishment, and the NAPCT as the urban population for cities without district establishment and for towns. The census result on China’s urbanization level based on this definition seemed to be widely accepted and considered temporally and internationally comparable (Chan, 1994: 30-3), and since then China’s National Bureau of Statistics has produced a third series of data on China’s urban population for the period between 1982 (the year of the third national population census) to 1999 (the first two being TPCT and NAPCT) based on the second definition.

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9 The non-agricultural population of a city without district establishment or a town by Hukou status is almost identical to the population of its streets in the former case or the population of its residents’ committees in the latter case, as pointed out by Zhou and Sun (1992: 21-7).

10 In China Statistical Yearbook (2001) the 2000 census definition rather than the 1990 census definition is used for the data of the year 2000 urban population (National Bureau of Statistics of China, 2001: 91). It is still not clear whether a new adjusted series of data on urbanization based on the 2000 census definition will be created.
However, this modification does not solve the fundamental problem with China’s urban definitions, as it is actually a mixture of the old administrative boundary based definition and *Hukou* based definition. In fact, it makes the problem even more complicated, because it takes different criteria for the population of cities with district establishment and the population of cities without district establishment and towns, making the urban population data incomparable among provinces and between cities and towns (Zhou and Sun, 1992). Its acceptability for measuring China’s urban population as a whole is more out of coincidence than out of reasonableness, as the definition is internally inconsistent, with the effect of exaggerating the city population while underestimating the town population.

Thus in the 2000 census, a more sophisticated modification was made to the urban definition and the new definition was referred to as the third definition (National Bureau of Statistics of China, 2001: 103). According to the third definition, cities only refer to the cities proper of those designated by the State Council. In the case of cities with district establishment, the city proper refers to the whole administrative area of the district if its population density is 1,500 people per km² or higher; or the seat of the district government and other areas of streets under the administration of the district if the population density is less than 1,500 people per km². In the case of cities without district establishment, the city proper refers to the seat of the city government and other areas of streets under the administration of the city. For the city district with the population density below 1,500 people per km² and the city without district establishment, if the urban construction of the district or city government seat has extended to some part of the neighboring designated town(s) or township(s), the city proper should include the whole administrative area of the town(s) or township(s).

Similarly, the new definition stipulates that towns only refer to designated towns proper.
The town proper in turn refers to the seat of the town government and other areas of residents’ committees under the administration of the towns; if the urban construction of the town government seat has extended to the seat(s) of the neighboring villagers’ committee(s), the whole area(s) of the villagers’ committee(s) should be included in the town proper. All areas outside cities and towns are referred to as the countryside. It is noteworthy that a distinction is made between market towns and the rest the countryside, with the former referring to the seats of townships and non-designated towns serving as certain economic, cultural and service centers and acknowledged by the county governments.

By now we have three official urban definitions in China: the total population of cities and towns (TPCT), with the non-agricultural population of cities and towns (NAPCT) as its supplement, the 1990 urban definition, and the 2000 census definition. As analyzed earlier, the first definition (TPCT) and its supplement (NAPCT) have lost much of their credibility in representing the real urban population in China, and the second one was a mixture and unsuccessful compromise of the first and supplementary ones. The new definition adopted in the 2000 census is essentially built-up area based. It solved the over-bounding problem of TPCT, the under-bounding problem of NAPCT, and the problems of inconsistency and incomparability of the 1990 census definition by introducing the population density criterion for cities with district establishment, conforming to the conventional international practice in urban definitions. Because the new definition covers the neighboring townships or villages extended to by the urban construction of cities or towns, it also reflects some evident result of in situ urbanization in the rural areas. By conventional standards, this seems to be a satisfactory definition.

Urbanization trends reflected in the statistics based on the urban definitions so far

Having reviewed China’s urban definitions and their changes since the 1980s, we can
now look at Figure 2 to examine China’s urbanization trends since the late 1970s measured by different urban definitions. The urbanization trend before 1982 can be represented by the series of TPCT. As the figure shows, China’s urbanization started from a low level, with urban population only 17.9 percent of the total population, and increased to 21.1 percent in 1982. The series based on NAPCT is parallel to that of TPCT but lower due to its more restrictive definition, indicating the fact that China’s urbanization trend at the beginning of reform was still closely associated with the growth of *Hukou* based non-agricultural population of cities and towns (NAPCT). However since 1983, especially 1984, urbanization level measured by TPCT has increased dramatically, and differed widely from that measured by NAPCT, reflecting the over-bounding problem of the TPCT caused by the urban administrative changes. As can be seen from the figure, the series of TPCT became increasingly unreasonable, with its proportion of the total population surpassing 50 per cent in 1989, and even 73 per cent in 1999.

The new series based on the 1990 census created for the period between 1982-1999 is also presented in the figure. According to this series, China’s urbanization level increased from 21.1 per cent in 1982 to 26.4 percent in 1990, and further to 30.9 per cent in 1999. Although this is a better estimate on China’s urbanization level and its changes than the series of TPCT, caution should be exercised in explaining the data due to the problems mentioned earlier. In fact, only by comparing the urbanization level of the year 1999 from this series with the urbanization level of the year 2000 (36.2 percent) from the 2000 census result, it is obvious that the series based on the 1990 census definition is on the lower side of the real urbanization level, as it is unlikely for the 1990 census definition based urbanization level, which increased on average for 0.62 percent annually during the period 1982-1999, to increase for 5.33 percent in a single year. This problem is actually a
reflection of the fact that the 1990 census definition for towns and cities without district establishment is NAPCT based, missing out a large number of people in the built-up areas of cities and towns newly established since the 1980s, which greatly outnumber the people improperly included in the urban population by the 1990 census definition for cities with district establishment. The author has been able to get the relevant result of 2000 census for Fujian province processed to obtain the data of urban population by the 1990 and 2000 census definitions respectively to demonstrate quantitatively the problem with the 1990 census urban definition. The result shows that if the 1990 census definition were used to replace the 2000 census definition, Fujian’s urbanization level would be 34.3 percent rather than 41.6 percent, and its town population and city population would be 2.44 million and 9.26 million rather than 6.35 million and 7.83 million respectively. This means that Fujian’s urbanization level would be underestimated by 7.3 percent; Fujian town population would be underestimated by 3.91 million; however Fujian’s city population would be overestimated by 1.43 million. This exercise indicates again that the 2000 census urban definition is a significant improvement over the 1990 census urban definition. By this definition, China’s urban population was 458.44 million, and its proportion of the total population was 36.22 percent, on November 1, 2000. This has been the most reasonable picture of China’s urban situation by conventional definitions so far.

Blurring of urban/rural distinctions and various dimensions of China’s in situ urbanization

By conventional built-up area based dichotomous approaches, the adoption of the 2000 census urban definition seems to have solved most of the problems with China’s urban definitions. However, from the perspective of in situ urbanization, many problems still remain. Here the term ‘in situ urbanization’ refers to the aforementioned fact that rural
settlements and their populations in some areas with high population densities and good transport conditions, especially those in the coastal provinces, have transformed themselves into urban or quasi-urban ones through functional and landscape changes of the settlements and the permeation of urban or quasi-urban facilities. Unlike conventional patterns of urbanization, the emergence of such an urbanization pattern has made the rural/urban distinction blurred, and extended the scope of rural-urban transformation beyond the boundaries of urban built-up areas. From this perspective the 2000 census definition is only suitable for reflecting visible rural-urban transformation within urban built-up areas, but not adequate for reflecting latent quasi-urban changes beyond those areas, which have become increasingly important since the 1980s. Therefore China’s settlement definitions need to be further improved to take into consideration of these changes, and this section will focus on examining various dimensions of such changes to provide a basis for a later discussion on this issue. As relevant data at the national level is not easily available, the following discussion will be mainly based on the case of Fujian Province, which is located in southeast China, well known for the in situ transformation of rural settlements driven by TVE development, but will also make use of available data from some other coastal provinces. Although this will not provide a complete picture of China’s in situ urbanization, it is sufficient to bring up its major dimensions.

The development of TVEs and functional and physical changes in the countryside

The most important latent dimension of China’s in situ rural-urban transformation has been the functional changes of rural settlements brought about by the development of township and village enterprises (TVEs). It is not the task of this paper to give a complete picture of this development, however its enormous scale and impact on China’s rural development and the Chinese economy can be illustrated by the following facts: In 1978 the number of TVE employees was only 28.26 million, but this number increased to

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11 For a detailed study on Fujian’s urbanization patterns since 1978 see Zhu (1999).
130.5 million in 1997 (National Bureau of Statistics of China, 1998: 420). In 1999 the value-added of TVEs amounted to 2,530 billion Yuan, accounting for 30 percent of the national GDP. TVEs’ export value also accounted for one third of China’s total export value this year (People’s Daily, 21 September 2000). In general, it is well accepted that TVEs account for one third of the national economy in China, and half of the economy or even more in some coastal provinces like Fujian.

It’s not hard to imagine that such a large-scale TVE development has had great impacts on the transformation of rural settlements in China. However to have a more complete and deeper understanding of such impacts, two important characteristics of TVEs should be examined by looking at some data from Fujian.

The first important characteristic of TVEs is that they are predominantly non-agricultural, especially manufacturing enterprises. As can be seen from Table 3, only a small fraction of TVEs and their employees are engaged in agricultural activities. The largest industry for TVEs is manufacturing, followed by the industry of wholesale, retail sales and trade. This is completely different from the traditional image of rural areas, which are identified with agricultural activities.

Table 3 about here

The second important characteristic of TVEs is that they are small, and mostly township- or village-based, as the term literally means. As can be calculated from Table 3, the average number of employees for each TVE in Fujian in 1999 was only 6.7. In fact, many TVEs in Fujian are households or joint-household enterprises, as I have examined elsewhere. Table 4 shows the distribution of 50,178 TVEs covered in the 1996

12 For more detailed discussion on the characteristics and development of TVEs and their roles in in situ urbanization see Zhu 2000: 414-22.
agricultural survey. These TVEs should meet the conditions of having at least 8 employees or other criteria to be covered in the survey, and therefore had bigger size than the TVEs not covered in the survey. However even among these enterprises, nearly 80 per cent of them and 70 per cent of their employees were found to be located in the villages. It can be inferred from Table 4 that those TVEs not covered by the survey are mostly located in the villages, as the table shows the trend that the smaller the enterprises, the more likely they are located in the villages.

Table 4 about here

One obvious effect of the fast development of TVEs with the above characteristics on the transformation of rural settlements is the great changes in the employment structure of rural areas. As can be seen from Table 5, in 1984 agricultural employment still accounted for 83 per cent of the total employment in Fujian’s rural areas; but in the 1996 agricultural survey, this proportion has dropped to 61.8 per cent of the employment; in plain rural areas, non-agricultural activities were very close to overtake agricultural activities in the employment structure. In many coastal areas, non-agricultural activities have already been dominant in the areas officially defined as rural, as I noted elsewhere (Zhu, 2000). This kind of changes is not unique to Fujian. In China as a whole, only 7.1 percent of its rural labor force was engaged in non-agricultural activities in 1978, but this share increased to 31.2 percent by the end of the year 2000, largely due to the development of TVEs (National Bureau of Statistics of China, 1998: 387-8; 2001: 363). In southern Jiangsu Province, non-agricultural sectors overtook the agricultural sector as early as in the 1980s (Ru et al., 2001: 161-4). Since ‘an increase in the number of people engaged in non-agricultural activities’ is considered to be an important component of urbanization (United Nations, 1993:2-1), the above-mentioned changes in the

13 Evidence shows that these two characteristics apply to TVEs in China as a whole as well (Tang and Kong, 2000: 10, 391, 425), although there are some regional variations.
employment structure in many China’s rural areas certainly increased their urban characteristics.

Table 5 about here

However, the increase in urban characteristics caused by TVE development has taken forms different from the conventional patterns of urbanization. In the early stage of TVE development, the above structural changes were rarely accompanied by spatial concentration of people and enterprises. Rather, in most cases the fast development of TVEs brought the industrial and other non-agricultural activities, which are considered to be the most important urban functions, down to the bottom hierarchy of the rural settlements. Thus urban elements have been increasing in many rural settlements; however they have not been increasing in a concentrated way, and therefore cannot be reflected in the built-up area based urban definitions. This is still the case for most small TVEs today.

Since the 1990s, some TVEs in Fujian as well as in many other parts of China have started more concentrated development by moving to industrial zones, some of which are part of the built-up areas of designated towns. The inflow of foreign investment in the rural areas since the late 1980s, which is often connected with TVEs and mostly concentrated in major development and industrial zones, has further enhanced the above trend. TVE development and foreign investment have also promoted the development of public facilities, infrastructure, and service sectors, and the revenues from TVEs and other enterprises have been the major source of funds financing these developments (Fan, 1998; Zhu, 2000; Ru, et al., 2001: 49).

Such a trend has led to spatially more concentrated physical changes. This is partly evidenced by the significant population growth in towns transformed from townships and
new cities transformed from towns in Fujian Province revealed by the 2000 census, which dominated the general urban population growth since the 1980s (Zhu, 2001b). However, such town related urban growth was only a partial result of the above physical changes, which have occurred on the basis of the existing rural settlement system. Some relatively large industrial zones are located in the seats of designated towns, but many more are still located in so-called central villages, which are at the level between the town or township and the village in the settlement system, or even in ordinary villages14. In the former case, these zones will be included in the urban areas according to the 2000 census urban definition and reflected in the census result, however in the latter case many of them will be left out by the new definition. Even if the seats of their villagers’ committees are extended to by the urban construction of the towns proper and therefore included in the urban areas according to the 2000 census definition, they are obviously a transitional area between urban and rural, not orthodox urban built-up areas in the conventional sense. This kind of urban or quasi-urban physical changes, together with the more widespread functional changes in the rural settlement, cannot be adequately reflected in the current settlement definitions.

The increasing universality of urban facilities in rural areas

The second latent dimension of China’s in situ urbanization is that while TVE development has brought urban economic functions and the accompanying physical changes to the rural areas, many urban or urban-like facilities, which are not necessarily related to TVE development, have also permeated the rural areas. As can be seen from Table 6, most villages in Fujian Province have access to public electricity, postal services, public roads suitable for motor vehicles, TV communications, primary school, primary health care clinics, and telephones, although the coverage of telephones in the villages is still relatively low. At the town- or township-level, more urban facilities can be found. In

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14 In an extreme case, there are 40 industrial zones at the municipal or town level, but 535 at the central village or village level, in Jinjiang Municipality of Fujian Province with a total areas of 649 km² where I conducted fieldwork.
Fujian Province, 93 per cent of towns and townships have cultural centers, 97 per cent have secondary schools, and 98 per cent have hospitals, according to the 1996 Agricultural Survey. The universality of the above facilities at the bottom hierarchy of the rural settlement system is further enhanced by modern transport and communication facilities, such as highways, IDD telephone and fax services, and even the Internet, which connect many rural settlements closely with major urban centers not only in the province, but in other part of China. This aspect of rural transformation has also been identified by Jones (1997) in other part of East and Southeast Asia, and he regards them as one respect in which conventional data understate levels of urbanization already achieved in those regions. If these urban elements are also taken into account in Fujian Province, then the rural-urban transformation in this province is much more profound than reflected in the official urban definition.

Table 6 about here

High population densities and improved transport and communication conditions: two enabling factors for in situ urbanization

From early discussion in this paper it may be noted that Chinese government policies have played important roles in the emergence and development of the above unconventional, dispersed rural-urban transformation patterns. However, this should not lead to the conclusion that these patterns are mainly the artifacts of the Chinese government policies. Rather, it should be noted that such unconventional rural-urban transformation processes have been occurring under some equally unconventional conditions: rapid population growth, and widespread, better transport and communication facilities make spatial concentration less important in the urbanization of many developing regions today than suggested by the conventional theories and the past experience of developed countries. Evidence from Fujian suggests that these two factors have facilitated the dispersed in situ rural-urban transformation.
The roles of high population density

Compared with developed countries in the past, rapid population growth is the most distinctive condition under which developing countries have been urbanizing. This difference is magnified by the fact that developing countries have little opportunity to export people to the New World, as many Western countries did over the nineteenth century (Beier, 1976: 4; Todaro, 1981: 12). So far much attention has been paid to the fact that high population growth can lead to fast expansion of existing cities in developing countries; however, the fact that high population growth rate can also lead to very high rural population densities and thus facilitate the creation of urban-like settlements on a widespread regional basis, is often neglected.

The comparison between Fujian Province and some developed countries in the past can illustrate this point. Fujian Province has a total area of 121,400 km². By the 2000 population census, its population density had reached as high as 286 persons per km². The 27 coastal counties and municipalities, where 56 percent of Fujian’s population and 66 percent of its TVE employees live, have a total area of 29,266 km² and an average population density of as high as 663 persons per km². This area size is similar to that of Belgium (29,456 km²) or Holland (32,538 km²) at the end of the 19th century (Weber, 1968: 182), but as Table 7 shows, the population density of Fujian’s coastal area is several times higher than those of Belgium and Holland at that time.

As a consequence of high population density in the rural areas, rural settlements with the population size and density of an urban or semi-urban place are not unusual in Fujian’s coastal area. In the above 27 coastal counties and municipalities, nearly 50 per cent of
their towns and townships have population densities higher than 800 persons per km$^2$ (calculated according to data provided by Civil Affaires Department of Fujian Province; April 2000). This compares to the average population density of 1,000 people per km$^2$ of the urbanized areas in USA in 1990 (U. S. Bureau of the Census, 1990, cited in Zhou and Shi, 1995: 295), and 400 persons per km$^2$ as the density criterion for identifying urban territory proposed in the US (Lang, 1986: 13). In Jinjiang, a place with a population of 1.5 million and well known for TVE development, the population density was as high as 1,506 persons/km$^2$ in 1990, before it was designated as a city. In terms of settlements size, villages with a population of 2,000 persons are not unusual in this area (Zhu, 1999: 160). Many villages have even expanded and connected to each other, forming bigger incorporated villages (Chen and Huang, 1991:43). Therefore, although many settlements in these areas are still regarded as rural, in a way they have already achieved urbanization in terms of population size and density, and a certain degree of specialization and scale economy is also achievable for non-agricultural industries (Zhu, 2000: 421); what they need to complete the urbanization process is to transform their functions from rural to urban. The fast development of TVEs served just this purpose.

*The role of improved transport and communication facilities*

Improved transport and communication facilities are further factors enabling *in situ* rural-urban transformation in Fujian. Again this point can be illustrated by comparing Fujian Province with developed countries in the past. In the period when developed countries were urbanized, and even in the middle of the twentieth century when many cities developed in developing countries, widespread motor transport was still not available, and dense settlement near the center was required so that people could walk to work and goods could flow easily between manufacturers, wholesalers and retailers, causing huge concentrations of persons in small areas (Hackenberg, 1980: 404; Speare et al., 1988: 193). However, the *in situ* rural-urban transformation in Fujian has been
occurring under very different transport conditions. Here relatively cheap transport such as motorcycles, buses and trucks has increased rapidly and become commonplace since the late 1978, and the road networks serving these vehicles have also improved tremendously. In Fujian Province as a whole, the number of motor vehicles increased by more than 11 times in the period 1978-2000, from 26,148 to 321,278, and the length of highways increased 75.5 percent in the same period, from 29,109 to 51,073 kilometers, including 345 kilometers expressways connecting major cities along the coast (Statistical Bureau of Fujian Province, 2001: 243-4).

Such improved transport conditions have two major effects: on the one hand, they greatly reduce the separating effect of distance between major cities and the rural areas, making geographical proximity to large cities less important in development\textsuperscript{15}. The wide use of modern communication services in business activities, especially IDD telephone and fax services, further enhances this effect. On the other hand, they connect almost all rural settlements together by easily available and affordable means of transport, making internal agglomeration of people and enterprises less necessary. This is confirmed by my survey of 100 enterprises in Jinjiang Municipality and Huian County in Quanzhou, a prefecture-level municipality well know for TVE development, showing that although none of the enterprises were located in cities, only a small proportion of their managers felt inconvenience in terms of transport (2%), acquisition of raw materials or parts (5.1%), and sales of their products (9.1%). A newly emergent terminology called ‘half-hour urban agglomeration’, which refers to the fact that most small cities and towns can be reached by usually half a hour bus drive from Quanzhou’s city center, also reflects the role of improved transport conditions in the emergence of the dispersed urban settlement patterns in this area (Policy research Office and Department of Construction, 2001)\textsuperscript{16}.

\textsuperscript{15} It took me at least 4 hours to travel from Fuzhou, the provincial capital to Linjiang, one of my field sites before the express way was put into use. But now it takes only 2 hours to complete the same journey.

\textsuperscript{16} The improved transport conditions could also give rural laborers the option of commuting to urban jobs without moving permanently to existing urban areas, as pointed out by Hugo’s study on rural-urban commuting and circular
This kind of transport conditions was rare in the past experience of developed countries. They greatly facilitate the circulation of commodities and people, and increase the accessibility of rural areas to external resources and markets, making it more feasible for non-agricultural activities to be located in rural areas. Given such conditions, it should not be surprising that the dispersed TVE development and small urban or quasi-urban settlements can emerge and develop against the conventional wisdom.

The above examination on high population density and improved transport conditions shows the underlying background for the emergence of in situ urbanization in Fujian and the importance of taking into consideration these two dimensions in conceptualizing China’s new urbanization processes and defining China’s settlements. Since both the urbanization processes and the conditions under which China is urbanizing have changes so much, it is necessary to explore a new conceptual framework and settlement definitions reflecting these changes. It is this issue that the next section turns to.

**China’s settlement definitions in the twenty-first century: A continuum and evolutionary approach**

After examining China’s changing urban definitions and urbanization processes, especially the in situ rural-urban transformation, we are now in a better position to seek more adequate settlement definitions and the ways of monitoring settlement changes in China. In this section I will first assess the current settlement definitions against the background of preceding analysis, and then propose some suggestions for defining and monitoring China’s settlement system.

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migration in West Java of Indonesia as early as in the early 1980s (Hugo, 1980). However in Fujian Province, rural-urban commuting and circular migration of local farmers are not significant compared to in situ rural-urban transformation, due to the lack of economic strength of the major urban centers and well developed rural non-agricultural activities.
Remaining problems with the current settlement definitions

To begin with, it should be kept in mind that China’s current settlement definitions are composed of two parts: the criteria for the designation of cities and towns and the 2000 census urban definition delineating the scope of the built-up areas for those designated cities and towns. These definitions are still not adequate to reflect the changing reality of China’s settlement system, although modified several times since the 1980s. This is most evident in the following three aspects.

First, the built-up area based approach and the settlement classification of the current definitions are too simplistic to reflect settlement changes and the blurring of rural/urban distinction. This is especially the case for the rural settlements undergoing tremendous functional and landscape changes driven by the development of TVEs, with urban facilities increasingly permeating in the rural settlement system. As analyzed earlier, although this kind of development may not be enough to qualify the rural settlements as conventionally conceived urban places, an undeniable fact is that they all possess some urbanity to different degrees, and it is imperative that China’s urban definitions take into account this fundamental change in the settlement system. In fact, the 2000 urban definition does make difference between market towns and the rest of the countryside, and this is actually recognition that there is a need to redefine the rural settlement system in terms of their urbanity. However, such a differentiation is not used in the data collection and final tabulation of the census data; even if used, it is far from enough to reflect the complexity of temporal evolution and spatial continuum of China’s settlement system, and a new way of defining and monitoring the system need to be found. This kind of approach is also urgently needed for the planning purpose of China’s settlement system, because China’s current urban planning regulations either do not cover most of the officially defined rural settlements, or are not suitable for regulating the in situ rural-urban transformation process, due to their insensitivity to the changes outside
officially define urban areas (Zhu, 1999:196-8). This view has been echoed in the recent discussion on the revision of China’s Urban Planning Act, in which some urban planners proposed that the Urban Planning ACT be replaced by a rural and urban planning act, so that rural and urban areas can be treated as integral parts of regional development (Zhang, 2001). To meet this end, a geographically more inclusive settlement definition reflecting the whole continuum of rural-urban changes is indispensable for the planning practice.

This gives rise to the need of further improving the way the 2000 census definition used to delineate urbanized areas for the designated cities and towns. Essentially this is a built-up area based method. Whether a townships or a village on the edge of an urban area is included in a city or town proper depends on the judgment on whether it is extended by the urban construction of the city or town. This not only causes the problem of being subjective, but is not able to identify changes in small settlement units such as central villages or even smaller villages, which are not contiguous to the designated cities and towns but undergoing rapid rural-urban transformation, and some of which may become future urban centers. The increasing prevalence of urban facilities in the rural areas cannot be adequately reflected in this kind of approach either. Given the widespread geographical distribution of in situ rural-urban transformation and the need of integral rural/urban planning, identifying these settlement units and their degree of urbanity has become increasingly necessary.

Second, a further related problem with the current urban definitions concerns the double identities of the floating population in relation to their places of origin and destination. Most urban populations in China now involve a significant part of people working and residing in the city, but keeping close ties with their places of origin in rural areas through the flow of remittances, frequent visits (especially at the time of spring festival), and eventual return migration. In fact, most members of the floating population have their
own home and land, and many of them leave some members of their families, at the place of origin. This further obscures the rural/urban distinction in China. Obviously, members of this part of the urban population are less committed to the destination cities; they also have different need for housing and other urban services from those of permanent urban settlers. Thus, to the interests of the floating population as well as the rural and urban areas of which they are a part, China’s urban definitions and statistics should be able to identify members of the floating population in the cities, while still counting them in their home communities. The current urban definitions need to be modified and the current urban statistics need to be improved to achieve this purpose.

Third, since population densities and improved transport and communication facilities are two enabling factors facilitating in situ rural-urban transformation, they should be taken into account in settlement definitions. However in the current urban definitions, transport and communication facilities are not considered at all. The population density is rightly used in the 2000 census for cities with district establishment to determine whether the whole administrative area of a city district can be included in the city proper; but in the criteria for the designation of cities, the population density is used as an intervening variable to make a place with higher population density more difficult to acquire official urban status, as can be seen from Table 2. This is contradictory to the point made earlier that high population density helps a place to achieve urbanization.

Apart from the above problems, two other problems also need to be addressed. The first one is that the current criteria for the designation of cities and towns still carry some legacies of the Hukou system, taking the size of the non-agricultural population by Hukou status as an important criterion for the designation of cities and towns. As analyzed earlier, such a criterion is increasingly irrelevant because of the gradual collapse of the Hukou system. In fact, in Guangdong, Fujian and Hunan Provinces, it has been announced that
the categories of agricultural and non-agricultural *Hukou* will be completely abolished, and only the place of residence will be registered in the *Hukou* system (*Xinhua Net*, 5/12/2001; *People’s Daily*, 24/12/2001, *China Youth Daily*, 1/1/2002). This makes the criterion of agricultural/non-agricultural *Hukou* status not only unreasonable, but also not feasible for the designation of cities and towns. The second one is that the criteria for the designation of cities include indicators for the absolute volume of economic activities, such as the GDP, the gross output value of industry, and the amount of financial revenue. It is even proposed that similar indicators should be introduced to the criteria for the designation of towns (Dai, 2000: 181). These economic indicators do not reflect the essence of urban settlements, making the criteria for the designation of cities and towns unnecessarily more complicated. In fact, the function of cities and towns as the places for non-agricultural activities can be adequately reflected by the criterion of employment structure, which is the criterion used by most countries in defining urban places. Some Chinese geographers also use the structural indicators, i.e. the proportion of non-agricultural employment in the labor force and the proportion of non-agricultural added value in the GDP as the major criteria for determining the outer zones in their study on China’s major metropolitan areas (Hu, et. al., 2000: 43-5). The official criteria for the designation of cities can be also modified following this line.

Some guidelines for the modification of China’s settlement definitions
To solve the above problems with China’s current urban definitions, I propose the following guidelines for their modification:

1. Similar to the old definitions, the new settlement definitions can still be divided into two parts: the criteria for the designation of cities and towns and the criteria for determining the degree of urbanity of all village level geographical units. While the criteria for determining the degree of urbanity of all village level geographical units can
be used to delineate the boundaries of cities and towns proper, like the 2000 census definition but in a finer way, they will be also used to monitor the rural-urban evolution of all the units. They should be applied not only to designated cities and towns, but also to officially defined rural areas. These can be implemented and maintained jointly by the census office and the construction department of the government through China’s well-organized administrative network, using SIS technology as suggested by Hugo, Champion and Lattes (2001). By doing so, no major changes in China’s rural/urban administrative structure are needed, however the evolution of China’s settlement system, and the reality of blurred rural/urban distinction, can be adequately reflected. Such an approach can also ensure a certain degree of continuity between the old and new definitions, and the comparability of data under the two sets of definitions.

2. The criteria for the designation of cities and towns can still be threshold ones, but they need to be revised according to the analysis in the preceding section. There are three main aspects of revision in these criteria. First, the population density should be used as a criterion for the town where the county government seat is situated and for the resident’ committee where the township government seat is situated when designating a new city or town respectively, rather than only as an intervening variable. Possible criteria could be 1,500 persons/km$^2$ for the city and 800 persons/km$^2$ for the town. This is not only necessary to make the criterion of population density consistent with its role in the settlement evolution analyzed above, but also a way to avoid the situation where some counties with dispersed population distribution are designated as cities, which has happened before. The second aspect of revision is to cancel the criteria of absolute values for GDP, the gross output value of industry, and the financial revenue to make the criteria simpler and more relevant to urban functions. The third aspect is related to the categories of cities and towns. Towns can be categorized into two groups: central towns serving as the center of a county and ordinary towns. The category of city size mentioned earlier
should be based on the population of the built-up areas rather than the non-agricultural population by *Hukou* status, and the size criteria for the categories of small, medium, and large cities also need to be adjusted. For example, the upper limit of large cities may be increased to 1 million people. In some more developed areas, the category of metropolitan region may be introduced.

3. Following the scoring system adopted by the Central Bureau of Statistics of Indonesia (BPS, 1988, cited in Firman, 1992: 96-9), a continuous, multi-dimensional scoring system can be introduced for the criteria for determining the degree of urbanity of all village level geographical units. The criteria should be able to reflect the following major dimensions of the settlement system in China: population density; ‘urban’ facilities, which must include transport conditions to reflect the accessibility of the unit; and employment structure of the population. A unit can be assigned a score for each of the above dimensions, and a total score taking consideration of all the dimensions. A threshold value can still be assigned to decide whether a unit is urban or rural, and those contiguous to the designated cities and towns should be included in the cities and towns proper; scores above or below the value should also be scaled, and new settlement categories can be created for the unit with those scores. In this way, all geographical units with different degree of urbanity (or rurality) (such as central villages, market towns, etc) will be covered by the settlement category system. Details of the system, including the way of assigning score, the selection of ‘urban’ facilities, the new settlement categories, and the cutting point for urban and rural, still need to be further explored.

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17 Population size is not included as a criterion for reflecting the urbanity of the unit. However, it is an important threshold criterion for the designation of cities and towns.

18 In Indonesia the following facilities are used as criteria for the scoring system: primary school, junior and senior high school, cinema, hospital, maternity hospital, clinic, road negotiable by three- or four- wheeled motorized vehicle, post office or telephone, market, shopping center, bank, factory, restaurant, public electricity, party-equipment renting service (Firman, 1988: 107). Similar criteria are also used in Taiwan for identifying ‘urban localities’ (Tsai, 1982: 212). These can be taken as references for the selection of ‘urban’ facilities in the scoring system of China. On the basis of this, some more facilities relevant to the accessibility of localities, such as accessibility and distance to expressways and designated cities and towns, should be included.
4. Although China’s *Hukou* system has lost its functions in defining rural/urban settlements, it can be modified rather than abolished to reflect the double residential identities of the floating population in settlement statistics. Some information of this kind is already available from the 2000 census results, and it can be provided on a regular basis by making use of the temporary and permanent registration of the *Hukou* system. Under this system, migrants without local permanent *Hukou* status at the places of their destination need to be registered as temporary residents while keeping their permanent *Hukou* registration at their places of origin. This kind of registers can be used to identify people with double residential identities, although some efforts are needed to tackle the problem of under-reporting of the number of such migrants, especially those short distance migrants. The availability of such information will make it easier for relevant government departments of migrant destination cities and towns to have better urban planning and provide better services according to the different needs of their residents with different residential status, as analyzed earlier; and for temporary residents having stayed in their places of destination for certain period of time (e.g. half a year) to be taken into account in the population size criterion of settlement definitions and explicitly counted in for the purpose of defining settlement types.

After the above modification, China’s settlement definition and the statistics based on it would be more adequate for the purposes of monitoring the settlement evolution, reflecting the variation in the settlement system, and integral rural/urban planning.

**Conclusions**

Many efforts have been made to modify settlement definitions in China since the 1980s in order to capture the fast changing reality of the settlement system. However this has not been a simple task, as can be seen in this paper. Even the urban definitions adopted in the 2000 census, which finally enable us to present a reasonable estimate of China’s
urban situation according to the conventional dichotomous, built-up area based approach, still carry some legacies of the old settlement definitions based on China’s planned economic system in the past, and are not compatible with the fast development of market-oriented reforms. More importantly, the important role of in situ urbanization in China’s urbanization process suggests that more fundamental modifications to China’s current settlement definitions and the ways of monitoring settlement changes are needed to reflect the blurred rural/urban distinction and to cover the temporal evolution and spatial continuum of the settlement system. Such modifications should not be considered premature for the current stage of China’s development, given the changing context of China’s industrialization and urbanization compared with developed countries in the past. As such context is not unique to China, many other developing countries, especially those densely populated regions with good transport conditions, may also need to consider similar issues.

References
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### Table 1 Number of cities and towns in China, selected years

<table>
<thead>
<tr>
<th>Year</th>
<th>1949</th>
<th>1956</th>
<th>1978</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cities</td>
<td>132</td>
<td>193</td>
<td>667</td>
<td></td>
</tr>
<tr>
<td>Towns</td>
<td>3,672</td>
<td>2,173</td>
<td>20,312</td>
<td></td>
</tr>
</tbody>
</table>


### Table 2 The latest criteria for the designation of cities promulgated in 1993

<table>
<thead>
<tr>
<th>The town where the county government is situated</th>
<th>Population density of the county (persons/km²)</th>
<th>&gt;400</th>
<th>100~400</th>
<th>&lt;100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-agricultural population (000s)</td>
<td></td>
<td>120</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>Non-agricultural population by Hukou (000s)</td>
<td></td>
<td>80</td>
<td>70</td>
<td>60</td>
</tr>
<tr>
<td>% of the population using running water</td>
<td></td>
<td>65</td>
<td>60</td>
<td>55</td>
</tr>
<tr>
<td>% of paved road</td>
<td></td>
<td>60</td>
<td>55</td>
<td>50</td>
</tr>
</tbody>
</table>

Fairly good public facilities, infrastructure and drainage system

<table>
<thead>
<tr>
<th>The county</th>
<th>Non-agricultural population (000s)</th>
<th>% of non-agricultural population in total population</th>
<th>Gross output value of industry at the township level and above (million Yuan)</th>
<th>% of gross output value of industry in the total gross output value of industry and agriculture</th>
<th>GDP (million Yuan)</th>
<th>% of tertiary sector value in GDP</th>
<th>Local budgetary financial revenue</th>
<th>Total value (000s)</th>
<th>Yuan / per capita</th>
<th>Total value (000s)</th>
<th>Yuan / per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>150</td>
<td>30</td>
<td>1,500</td>
<td>80</td>
<td>1000</td>
<td>20</td>
<td>60,000</td>
<td>100</td>
<td>50,000</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120</td>
<td>25</td>
<td>1,200</td>
<td>70</td>
<td>800</td>
<td>20</td>
<td>50,000</td>
<td>80</td>
<td>40,000</td>
<td>80</td>
</tr>
</tbody>
</table>

A certain part of the revenue is turned over to the higher authorities

Table 3 Industry structure of TVEs in Fujian, 1999

<table>
<thead>
<tr>
<th>Industry</th>
<th>TVEs Number</th>
<th>% of total</th>
<th>TVE employees Number</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>11,874</td>
<td>1.50</td>
<td>188,700</td>
<td>3.56</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>243,878</td>
<td>30.85</td>
<td>3,111,347</td>
<td>58.74</td>
</tr>
<tr>
<td>Construction</td>
<td>37,496</td>
<td>4.74</td>
<td>529,031</td>
<td>9.99</td>
</tr>
<tr>
<td>Transport</td>
<td>141,149</td>
<td>17.86</td>
<td>336,708</td>
<td>6.36</td>
</tr>
<tr>
<td>Wholesale, retail sales and trade</td>
<td>237,673</td>
<td>30.07</td>
<td>689,994</td>
<td>13.03</td>
</tr>
<tr>
<td>Tourism and catering trades</td>
<td>92,710</td>
<td>11.73</td>
<td>326,815</td>
<td>6.17</td>
</tr>
<tr>
<td>Other</td>
<td>25,736</td>
<td>3.26</td>
<td>114,272</td>
<td>2.16</td>
</tr>
<tr>
<td>Total</td>
<td>790,516</td>
<td>100.00</td>
<td>5,296,867</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: calculated according to 1999 statistics of TVE Management Bureau of Fujian Province.

Table 4 Location of TVEs\(^a\) in Fujian Province, 1996 agricultural survey

<table>
<thead>
<tr>
<th>Location</th>
<th>Enterprises Number</th>
<th>% of total</th>
<th>Employees Number</th>
<th>% of total</th>
<th>Average number of employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large and medium-sized cities</td>
<td>615</td>
<td>1.23</td>
<td>32,156</td>
<td>2.17</td>
<td>52</td>
</tr>
<tr>
<td>Seats of county governments</td>
<td>2,035</td>
<td>4.06</td>
<td>64,987</td>
<td>4.38</td>
<td>32</td>
</tr>
<tr>
<td>Industrial and mining areas</td>
<td>168</td>
<td>0.33</td>
<td>5,710</td>
<td>0.38</td>
<td>34</td>
</tr>
<tr>
<td>Seats of township or town governments</td>
<td>8,176</td>
<td>16.29</td>
<td>365,198</td>
<td>24.62</td>
<td>45</td>
</tr>
<tr>
<td>Villages</td>
<td>39,184</td>
<td>78.09</td>
<td>1,015,172</td>
<td>68.44</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>50,178</td>
<td>100</td>
<td>1,483,223</td>
<td>100</td>
<td>30</td>
</tr>
</tbody>
</table>

\(^a\): only include those having at least 8 employees or meeting certain other conditions.

Source: 1996 Agricultural Survey of Fujian Province.
### Table 5 Employment structure in the rural areas of Fujian Province, selected years (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Primary sector</th>
<th>Secondary sector</th>
<th>Tertiary sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984&lt;sup&gt;a&lt;/sup&gt;</td>
<td>82.83</td>
<td>9.27</td>
<td>7.90</td>
</tr>
<tr>
<td>1996, all rural areas&lt;sup&gt;b&lt;/sup&gt;</td>
<td>61.78</td>
<td>20.26</td>
<td>17.96</td>
</tr>
<tr>
<td>1996, plain rural areas&lt;sup&gt;b&lt;/sup&gt;</td>
<td>52.94</td>
<td>24.57</td>
<td>22.49</td>
</tr>
</tbody>
</table>

Sources: <sup>a</sup> Statistical Bureau of Fujian Province, 1985: 74-5; <sup>b</sup> 1996 Agricultural Survey of Fujian Province.

### Table 6 Urban facilities in Fujian's villages, 1996 agricultural survey

<table>
<thead>
<tr>
<th>Facility</th>
<th>Total number of villages</th>
<th>Number of villages with the facilities</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to public electricity</td>
<td>15,087</td>
<td>15,066</td>
<td>99.86</td>
</tr>
<tr>
<td>Access to postal services</td>
<td>15,087</td>
<td>14,572</td>
<td>96.59</td>
</tr>
<tr>
<td>Access to public roads suitable for motor vehicles</td>
<td>15,087</td>
<td>14,424</td>
<td>95.61</td>
</tr>
<tr>
<td>Access to telephone</td>
<td>15,087</td>
<td>10,845</td>
<td>71.88</td>
</tr>
<tr>
<td>Access to TV communications</td>
<td>15,087</td>
<td>14,417</td>
<td>95.56</td>
</tr>
<tr>
<td>Primary school</td>
<td>15,087</td>
<td>13,895&lt;sup&gt;a&lt;/sup&gt;</td>
<td>92.10</td>
</tr>
<tr>
<td>Primary health care clinic</td>
<td>15,087</td>
<td>16,897&lt;sup&gt;b&lt;/sup&gt;</td>
<td>112.00</td>
</tr>
</tbody>
</table>

<sup>a</sup>: number of primary schools in the rural areas.  
<sup>b</sup>: number of clinics in the rural areas.  

Source: 1996 Agricultural Survey of Fujian Province.
### Table 7 Population density of Fujian in the 2000 census and some developed countries or regions at the end of the 19th century (persons per km²)

<table>
<thead>
<tr>
<th>Country</th>
<th>Density (persons per km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saxony</td>
<td>234</td>
</tr>
<tr>
<td>Belgium</td>
<td>206</td>
</tr>
<tr>
<td>England and Wales</td>
<td>192</td>
</tr>
<tr>
<td>Netherlands</td>
<td>139</td>
</tr>
<tr>
<td>Italy</td>
<td>107</td>
</tr>
<tr>
<td>Japan</td>
<td>107</td>
</tr>
<tr>
<td>Germany</td>
<td>92</td>
</tr>
<tr>
<td>France</td>
<td>73</td>
</tr>
<tr>
<td>United States</td>
<td>8</td>
</tr>
<tr>
<td>Fujian Province</td>
<td>286</td>
</tr>
<tr>
<td>Coastal area of Fujian Province</td>
<td>663</td>
</tr>
</tbody>
</table>

Source: Weber, 1968:147; population densities in Fujian are calculated according to data provided by Population Census Office of Fujian Province, May 2001.
Figure 1 China’s urban and non-urban administrative systems*

R: Residents’ Committees
V: Villagers’ Committees

* The shaded blocks are urban administrative units at various levels. Please note that not all areas within the urban administrative units (except streets and residents’ committees) are necessarily urban, nor are all areas within non-urban administrative units necessarily rural. The latest boundaries of the bona fide urban areas are delineated by the 2000 census urban definition (see the relevant contents of the text for more details).