Featured Graphic

Environment and Planning A

Environment and Planning A
2016, Vol. 48(2) 220–222

DOI: 10.1177/0308518X15621631
epn.sagepub.com
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Shrinking cities in a rapidly urbanizing China

Ying Long
Beijing Institute of City Planning, China

Kang Wu
Capital University of Economics and Business, China

Many cities across particular areas in Europe and North America have a dwindling population, emerging vacant spaces, and the underuse of existing urban infrastructure (Haase et al., 2014). As one of the more prosperous urbanized countries in the world, China has witnessed an unprecedented active stage of urban expansion (see the Beijing City Lab Ranking 8 for details, http://www.beijingcitylab.com/ranking/), which also attracted extensive attention from academics (Deng et al., 2010).

Our previous study on mushingrooming Jiedaos (the basic administrative unit of a city proper) indicates that urbanization in China often involves a significant political dimension. Largely rural settlements (e.g., *Zhen*) could be accorded with the city status (e.g., *Jiedao*) overnight by administrative power, which further accelerates the urban process (Wu et al., 2015).

Meanwhile, some large cities and inshore developed cities in East China have attracted huge numbers of migrants from rural areas and small cities during the last ten years. Vacant villages have been widely reported in the context of China (Long et al., 2012), while we observe shrinkage at township and city levels.

For all the townships in Mainland China, we estimated their population (residents not *Hukou*) based on the Population Censuses of China in 2000 and 2010, respectively. We found that 19 882 among all 39 007 townships were losing their population during 2000–10, and the total area was 3.24 million km^2, which covered almost about one third of the territories of China (Figure 1). Those shrinking townships are distributed in both rural and urban areas. Among them are 1147 urban townships with a total area of 47 420 km^2 in 367 cities.

Besides the shrinking townships observed, we further identify 180 shrinking cities in China including one provincial capital city, Urumqi—40 prefectural-level cities and 139 county-level cities (Figure 1). In addition, we use a cartogram to reveal population density in 2010 at the prefectural level, based on which shrinking prefectures are mapped (Figure 2).

More work is needed to understand these shrinking localities, the reasons behind the population falls, and possible policy tools. Both decision makers and city planners are accustomed to the urban growth and population increasing in China. We hope that these featured graphics will inform them of our findings. In addition, we have established the

Corresponding author:
Ying Long, Beijing Institute of City Planning, China.
Email: longying1980@gmail.com

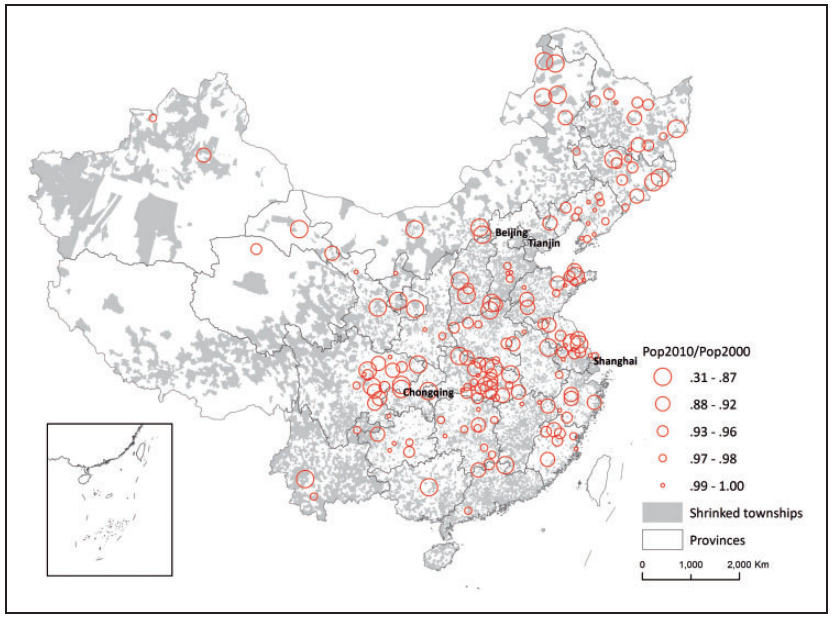

Figure 1. Shrinking territories at the township and city levels in China (Pop2010 = population in 2010, Pop2000 = population in 2000).

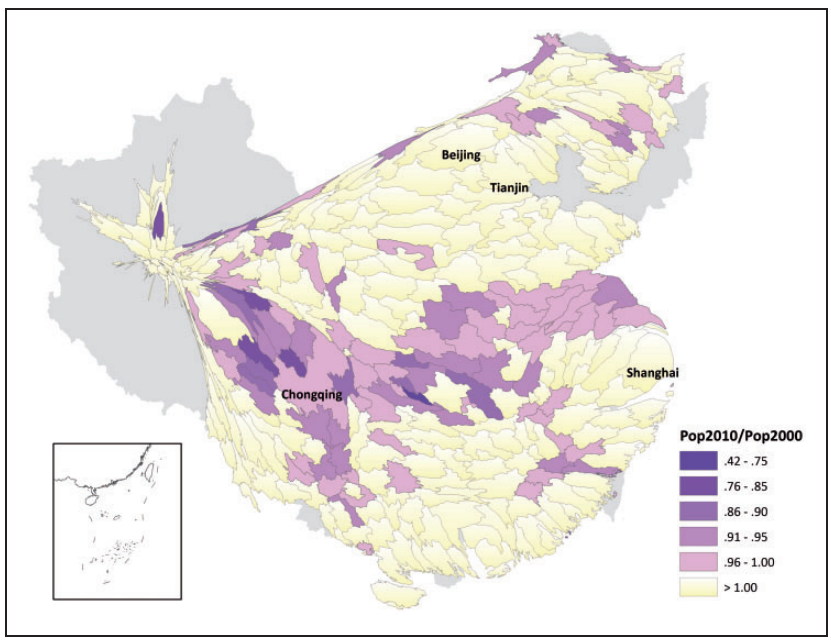

Figure 2. Prefectural level population variation in China.

Chinese shrinking city research network (http://www.beijingcitylab.com/projects-1/15-shrinking-cities/) for exploring this important issue via proposing necessary planning rules for shrinking cities.

Software: ArcGIS 10.2 and Cartogram Geoprocessing Tool (http://arcscripts.esri.com/details.asp?dbid=15638)

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