

Abstract Submission to ERSA 2017

Title: The Coupling and Coordination Relationships between Chinese Urbanization Quality and Its Ecological Capability——An Empirical Study Based on 30 Large-medium Cities

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Keywords: *Urbanization quality; Ecological environment; Coupling; Coordination*

The Coupling and Coordination Relationships between Chinese Urbanization Quality and Its Ecological Capability——An Empirical Study Based on 30 Large-medium Cities

Abstract: Since the reform and opening up, China's permanent urbanization rate increased year by year. With the rising urbanization rate, China's urban scale has expanded rapidly. Urbanization not only brings about agglomeration economic effect and scale effect in cities, but also makes the cities as the major areas of energy consumption and frequently pollution. The coordinated development of urbanization quality and ecological environment carrying capacity is very important for China's future. Therefore, it is essential to evaluate the coupling and coordination relationships between cities' urbanization quality and their ecological carrying capacity, and further discuss the features and the laws of their spatial distribution, which carries significant meaning and practical value in promoting the coordinated development between China's urbanization quality and its ecological capacity. This paper carried out an empirical study on the coupling and coordination relationships and the spatial distribution features between urbanization quality and ecological capability by applying coupling degree and coordination degree method based on Chinese 30 large-medium cities. The results indicated that (i) from 2003 to 2014, the coupling degree across the 30 large-medium cities showed an increase trend from 0.3 to 0.5, which showed that the systematic coupling between China urbanization quality and ecological environment carrying capacity was in antagonistic stage and the index was gradually rising and close to 0.5. It tended to develop towards the running-in stage. Meanwhile, the coordination degree also showed the same increase trend from 0.246 in 2003 to 0.430 in 2014. The overall coordination gradually evolved from medium imbalance to endangered

imbalance, which indicated that urbanization quality and ecological environment carrying capacity in China has not coordinated effectively yet. Furthermore, the fact that Chinese urbanization quality lagged behind ecological environment carrying capacity explained its low coordination. The results indicated that China's urbanization quality requires to raise in a faster way than ecological environmental carrying capacity and more efforts should be made on economic and social development and progress.(ii)In the terms of temporal-spatial dynamic perspective, this paper found that the coupling degree between urbanization quality and ecological carrying capacity of 30 large-medium cities in China is in antagonistic, running-in and high-coupling stage on three time nodes respectively. From the features of evolving quantity of cities in the very stage, we found that the coupling condition between urbanization quality and ecological carrying capacity was turning better generally and the overall coupling degree was evolving towards the turning-in stage. However, China was still lack of cities in high-coupling stage and the overall coupling degree was not good enough. In addition, the coordination between urbanization quality and ecological capacity was mainly imbalanced on three time nodes, including medium imbalance, slight imbalance and endangered imbalance. Whereas, cities that overcoming imbalanced status were merely in reluctant coordination and initial coordination, which indicated that China's urbanization quality and ecological carrying capacity had not reached a good coordination status. To sum up, the overall levels of coupling coordination in major cities were rising slowly. Meanwhile, the spatial distribution pattern and structure of the coupling and coordination in these cities were gradually optimized, but no city had reached the ideal condition, China was lack of high coupling degree and quality coordination cities.

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