

The High-quality Development of China's Economy: Theory and Applications Special Issue

The world has undergone many changes unseen in a century because of the influence of COVID-19 pandemic and the change of international political and economic relations. Promoting the high-quality development of economy has become an important strategic measure for China to cope with the complex and changeable situations, which has increased China's ability to defense the internal and external economic uncertainty and injected positive energy into the world.

The high-quality development of China's economy has become a hot topic of academic research. Many scholars have conducted in-depth and extensive research on this topic. This research direction includes the following three research branches. First, both the connotation and denotation of high-quality development. Second, the problems and challenges faced by the high-quality development of China's economy and different paths towards promoting the high-quality development. Third, ways to construct a policy system in order to promote high-quality development.

In order to discuss the latest research progress of the high-quality development of China's economy and its theory and applications, *Journal of Systems Science and Information* (JSSI) publishes this special issue, which selected seven latest research papers on development, theory, and applications of high-quality development in China's economy in different fields, including four articles focusing more on theoretical exploration and three articles paying more attention to application of high-quality development in different industries in China. We will classify and review high-quality development related studies from the above two perspectives as follows.

1) High-quality development related theoretical research: In "The Interactive Impact of Trade Policy Uncertainty and Credit Constraint Heterogeneity on Firms' Export Margins: Theory and Empirics", Liu, et al. develop a trade model of heterogeneous firms and reveal the important effects of the interaction mechanism of trade policy uncertainty and credit constraint heterogeneity on the behaviors of exporters. The evaluation index system of regional innovation capacity under high-quality perspective is established in "Dynamic Evaluation and Analysis of Regional Innovation Capability in Eastern China from the Perspective of High-quality Development", where Xu, et al. improve the dynamic evaluation method based on gray correlation degree and TOPSIS. The rest two articles both develop the method of DEA model. Li, et al. measure the productivity change of China's banks who completed Mergers and acquisitions (M&A) during 2004–2018, by using a two-stage data envelopment analysis (DEA) method in "Productivity Analysis for Banks' Merger and Acquisition Using Two-Stage DEA: Evidence from China" and adopt the global Malmquist index (GMI) to evaluate the productivity change. In "Efficiency Analysis of Industrial Water Treatment in China Based

on Two-stage Undesirable Fixed-sum Output DEA Model”, Ma, et al. develop a two-stage undesirable fixed-sum output data envelopment analysis (DEA) model, adjust the industrial chemical oxygen demand (COD) emission during 2011–2015 and calculates the efficiency values by heuristic search algorithm.

2) Application scenarios of high-quality development: In “Investigating the Impact of Capacity Utilization on Carbon Dioxide Emission: Evidence from China’s Iron and Steel Industry”, Chen, et al. explore the impact of capacity utilization on carbon dioxide emission based on panel data of China’s iron and steel industry from 2005 to 2014 and test the heterogeneity in different sub-samples. Zhang, et al. study the dependence, asymmetry, and transmission direction of China’s real estate and economy based on China’s real estate investment (REI), commercial housing sales (CHS), and GDP data from 2001 to 2020 and demonstrate their correlation through the deep cross-correlation analysis (DCCA) algorithm, multifractal asymmetric detrended cross-correlation analysis (MF-ADCCA) algorithm and DCCA algorithm based on a time delay in “The Cross-Correlation Relationship Between the Real Estate Industry and High-Quality Economic Development”. In “Air Pollution, Environmental Regulations and Economic Growth — Estimation of Simultaneous Equations Based on Panel Data of Prefecture-Level Cities”, Wang, et al. explore the relationship between air pollution and economic growth under the perspective of high-quality development using the panel data of 289 prefecture-level and above cities in China from 2003 to 2017 with a method of 3SLS estimation.

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