



Regional disparities in China's marine economy



Baiqiong Liu^{a,b,c,d,*}, Min Xu^{a,b,c,d}, Jing Wang^{a,b,c,d}, Sumei Xie^{a,e}

^a School of Geography Science, Nanjing Normal University, Nanjing 210023, China

^b Key Laboratory of Virtual Geographic Environment (Nanjing Normal University), Ministry of Education, Nanjing 210023, China

^c State Key Laboratory Cultivation Base of Geographical Environment Evolution (Jiangsu Province), Nanjing 210023, China

^d Jiangsu Center for Collaborative Innovation in Geographical Information Resource Development and Application, Nanjing 210023, China

^e South China Sea Institute of Planning and Environmental Research, SOA, Guangzhou 440100, China

ARTICLE INFO

Keywords:

Marine economy
Regional difference
Gini coefficient
Theil index
China

ABSTRACT

Understanding the performance of each coastal area as it develops is the primary task of policy-makers in a marine economy; however, quantitative regional differences in China's marine economy have not been empirically examined. This paper offers a methodological contribution by applying a series of techniques, including the variation coefficient, Gini coefficient, and Theil index decomposition, to illustrate the relative differences among coastal areas. Additionally, the coastal areas of China were divided into two categories to reveal the provincial differences and regional disparities in China's marine economy. The results show that although the numerical economic differences in Gross Ocean Product (GOP) among coastal areas have increased significantly during the 21st century, the gaps among coastal regions have gradually decreased. In addition, China's marine economy presents three levels of regional development (developed, medium-developed, and developing). The results of the Theil index decomposition show that the overall difference in China's marine economy is derived mainly from differences within the three macro marine economic regions; these differences account for more than 95% of the overall difference. Furthermore, the underlying reasons for and driving mechanism of regional differences in China's marine economy can be illuminated in terms of differences in natural resource endowments and geographic locations; industrial agglomeration and diffusion; changes in regional development policy; and foreign investment. These findings offer basic data support and policy recommendations for marine economy management at the national and regional levels.

1. Introduction

The 21st century is the century of the ocean. With large-scale exploitation and utilization of land resources, conflicts between people and land are increasingly prominent. People have thus paid substantial attention to the development of marine resources and have gradually recognized the economic value of various marine sectors [1,2]. As a large country with a long coastline, China has abundant maritime resources and a vast ocean territory, and the Chinese government attaches great importance to the development of its marine economy. In 2003, China promoted its *Outline of the Planning of National Marine Economy Development* [3], which clearly showed the direction of marine industry development and marine spatial layout. In the context of *Massive Coastal Development* and the proposed *Powerful National Marine Strategy*, China's marine economy has achieved unprecedented success. According to the *China Marine Statistical Yearbook* [4], China's Gross Ocean Product (GOP) increased from 9518 billion yuan in 2001 to 60,699 billion yuan in 2014, and the proportion of GOP to Gross

Domestic Product (GDP) increased from 8.7% to 9.5%. The marine economy is thus becoming a new growth source for the national economy.

Nevertheless, regional differences in marine economies among coastal areas are fairly significant in China. In 2004, Guangdong's GOP accounted for 21.8% of China's national GOP, whereas Hainan's share was only 1.5%. Regional economists believe that modest regional differences play a positive role in the development of the marine economy because the economic gaps between different areas promote the spatial movement of production factors, which in turn creates an optimized and comprehensive resource configuration. In addition, a developed region may generate demonstration, motivation and conduction effects on an under-developed region through wealth accumulation and experience sharing. However, the constant increase in these regional differences will result in a concentration of capital, labor and technology in developed regions, which would place an undue burden on the developed region's infrastructure, environmental protection and social security. In under-developed regions, the drain of funds and

* Corresponding author at: School of Geography Science, Nanjing Normal University, Nanjing 210023, China.

E-mail addresses: liubq-2168@163.com (B. Liu), xumin0895@njnu.edu.cn (M. Xu), wangjing0108@njnu.edu.cn (J. Wang), missthank@163.com (S. Xie).

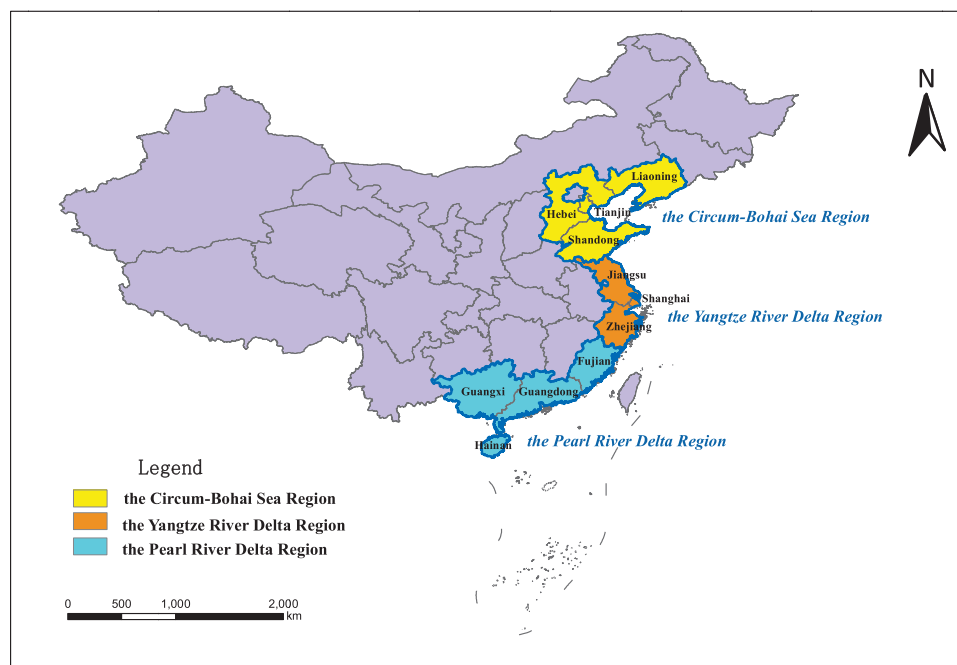


Fig. 1. China's 11 coastal provinces and three macro marine regions.

outflow of professional technical talent would lead to economic recessions. Thus, it is necessary to quantitatively measure regional differences in the marine economy, investigate its driving mechanism and factors, and offer basic data support and policy recommendations for marine economy management, eventually promoting the sustainable development of the marine economy.

Morrissey and O' Donoghue [5] estimate the Irish marine sector at the regional level in terms of 3 key economic parameters—gross value added, employment and productivity. Colgan [6] extends the analysis to include wages, establishments and outputs and finds that the ocean economy of the United States is rather different at the national, state and county levels. Morrissey [7] demonstrates marine-based employment and deprivation both across (inter) and within (intra) regions in England. Within China, Zhang [8] concludes that the differences among coastal provinces are decreasing based on the computation of a centralization index. Later, Zhao [9] argues that China's marine economy has maintained a higher growth rate than the national economy over the same period but still shows certain disparities compared to the global marine economy. Furthermore, Jiang [10] and Han [11] clearly state that China's marine economy exhibits regional characteristics and focuses on the regional contributions of the marine economy to the economies of China's coastal provinces.

Previous research has focused on the contribution of the marine economy to the national economy [1,2,12], on the contributions of the marine element [13,14], and on the economic differences between inland and coastal regions [15,16]. In addition, previous research mainly focuses on marine industrial, employment, population and GDP data [17,18]. However, because the accounting system of the marine economy was established rather late in China and coastal provincial data have proven difficult to obtain, little attention has been focused on GOP data, which constitute the final measure of marine economic activity in the national economy. Moreover, the quantitative regional differences in China's marine economy have not been empirically examined. This paper innovatively uses a series of techniques, including variation coefficient, Gini coefficient, and Theil index decomposition, to illustrate the regional disparities in China's marine economy.

The first contribution of this paper is to divide China's coastal areas into two categories to reveal provincial differences and regional

disparities in the development of the marine economy. Based on economic performance, China's marine economy presents three levels of development: developed, medium-developed, and developing. The second contribution of the present research is its adoption of GOP as an analytic parameter, which may allow this study to generate results that are more precise than those of studies using GDP as an analytic index.

The remainder of the paper is organized as follows: Section 2 provides an overview of data sources and study methods. Section 3 examines the absolute difference in China's marine economy and investigates the relative difference using three methods—the variation coefficient, the Gini coefficient, and decomposition of the Theil index. Section 4 discusses the factors and mechanism that drive regional disparity. Section 5 offers political recommendations and concluding remarks.

2. Data and methods

2.1. Data Sources

In China, scholars hold different views on the definition of the marine economy [13]. With the promotion of *Industrial classification for ocean industries and their related activities* (GB/T 20794-2006) [19] in 2006, China's marine economy has been defined officially as marine and marine-related industrial activities aimed at developing, utilizing and/or protecting the ocean. In addition, GB/T 20794-2006 introduced the concept of GOP, which is equal to the sum of the added values of marine economic activities. Therefore, GOP is to the marine economy what GDP is to the national economy.

In addition to the concept of GOP, the accounting system of the marine economy was established in 2006 to determine national and provincial GOP data. To ensure the continuity and comparability of GOP data, China's State Oceanic Administration (SOA) estimated comparable data from 2001 to 2005 [4]. Given the evolving process of China's marine economic statistics, provincial GOP, population, and per capita GOP were selected as analytical indicators during the 2001–2014 period to investigate regional disparities in China's marine economy. All data were selected from the *China Marine Statistical Yearbook* to ensure temporal and spatial consistency in measurements.

This paper divides China's coastal areas into two categories to reveal

Download English Version:

<https://daneshyari.com/en/article/5118255>

Download Persian Version:

<https://daneshyari.com/article/5118255>

[Daneshyari.com](https://daneshyari.com)