Inclusive Green Growth

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Inclusive Green Growth is a sustainable development mode that pursues the coordination of economic growth, ecological environment and social equity. It coordinates the contradictions and conflicts between man and nature and between man and man by changing and optimizing the mode of production. It is an important way and specific form to realize the coordinated development of the three systems of economy, society and nature. Inclusive Green Growth pursues fairness and efficiency, the internal consistency between development and environment, and is committed to achieving high-quality synchronous development of economy, society and ecology. Compared with Green Growth and Inclusive Growth, Inclusive Green Growth has richer theoretical connotation and practical value: the change of wealth system and development concept is its logical starting point; The coordinated reform of the socio-economic structure system based on the mode of production is the guarantee of its system; The overall coordination of growth and development is its prominent feature; Economic growth, inclusiveness and sharing, effective utilization and protection of ecological resources are its internal requirements; The equal participation and sharing of the whole people in the development process and development achievements is its value orientation. The comprehensive, coordinated and sustainable development of the three systems of economy, society and nature is its goal and requirement.

Inclusive Green Growth | entropy method | fiscal expenditure structure | efficiency evaluation | DEA-Malmquist model

1. Introduction

The capitalist mode of production and its black development system under industrial civilization not only produce natural alienation but also materialization and alienation of human and society, which will inevitably lead to various problems related to income gap and social injustice, as well as ecological economic problems such as environmental overdraft and ecological deficit. In order to cope with this unsustainable development dilemma, following the development ideas of inclusive growth and green growth, The World Bank issued “Inclusive Green Growth: the road of sustainable development” [1], which pointed out that inclusive, efficient, and affordable green growth is essential to maintain the future economic development. As a new sustainable growth mode, Inclusive Green Growth requires overcoming political and economic constraints, abandoning deep-rooted behavior and social norms, and developing innovative financing tools to change incentive methods and promote innovation, so as to solve the phenomenon of market, policy, and system failures that lead to the excessive use of natural resources. The five development concepts of “innovation, coordination, green, openness, and sharing” proposed by the Chinese government are new development concepts to promote balanced, inclusive, and sustainable

development under the logic of the new normal economy. On the one hand, these five new development concepts focus on inheriting and reflecting the most important aspects of the concept of inclusive growth. On the other hand, they highlight that China adapts to the era requirements of the world's green development trend under the rigid constraints of resources and environment, and it is unified with high-quality development. Therefore, the specific concept of Inclusive Green Growth summarizes the historical, realistic, and logical requirements of the five new development concepts, and it embodies the core connotation of high-quality development.

In order to realize the sustainable growth road of Inclusive Green Growth, macro governance at the national level is essential. As one of the most direct and effective means of government governance, fiscal policy has new requirements in the new era and new goals. On the one hand, in order to stimulate market vitality, the government streamlines administration and decentralization, and it promotes the process of marketization, which means that the growth rate of fiscal revenue is bound to slow down relative to the growth rate of GDP, and the decline of GDP growth further aggravates the decline of fiscal revenue level. On the other hand, the new development concept requires the government to increase the necessary expenditure in promoting non-economic development, so as to promote the comprehensive development level of various regions. On the basis of the absolute scale of fiscal expenditure unchanged or even reduced, we must optimize the structure of fiscal expenditure to meet the current needs of the overall development of the country. Therefore, it is particularly important to improve the efficiency of government expenditure structure under the goal of Inclusive Green Growth.

Data envelopment analysis (DEA) and its extended form are mostly used in the research of fiscal expenditure efficiency, and the principle is roughly the same. In this method, an efficient production frontier possibility boundary is constructed by using linear programming, and then, the efficiency differentiation results are obtained by comparing the decision-making units with different efficiency values with the production possibility boundary. The distinction of fiscal expenditure efficiency is mainly reflected in the selection of input–output indicators. From the perspective of input, the existing literature can be divided into three categories: the first category uses the total scale of fiscal expenditure or the scale of fiscal expenditure per capita as the input index to measure the fiscal expenditure efficiency. For example, Worthington (2000) [2] and Afonso (2006) [3] (2008) [4] measured the fiscal expenditure efficiency of Australia and Portugal, respectively. The second category is to study the efficiency of financial expenditure with specific financial entries as input indicators. For example, Gupta (2001) [5] and lavado (2009) [6] take medical and health expenditure as input indicators, Bardhan (2002) [7] takes public goods expenditure as an input indicator, Mikušová (2017) [8] takes education expenditure as an input indicator, while Wang (2018) [9] and Zhang (2019) [10] take environmental protection expenditure as an input indicator. The third category is to study the efficiency of different fiscal expenditure structures from a macro perspective. The earliest research can be traced back to Brueckne (1979) [11]; Li (2010) [12] and Deng (2019) [13] also conducted a series of studies on the efficiency of China's fiscal expenditure structure. From the perspective of output, most of the studies in the international literature are based on research on the efficiency of fiscal expenditure with economic growth or wage level as output [14][15]. With the continuous putting forward of various comprehensive objectives and requirements, scholars gradually put the comprehensive development index into the output for analysis. Taking Chinese scholars as an example, after the Chinese government proposed not to take economic growth as the only assessment index, scholars have invested in the research with a weighted index as the output index. Zhang (2017)

[16], Fan (2018) [17], Jianmin (2021) [18], Zhang (2021) [19], and other scholars have constructed different weighted output indexes for different research purposes to study the efficiency of fiscal expenditure.

2. The Efficiency of China's Fiscal Expenditure Structure under the Goal of Inclusive Green Growth

With more than 70 years of economic and social development, although the comprehensive national strength has been greatly strengthened, the non-inclusive and non-green problems under the mode of capital production are gradually exposed. We should guard against the endless expansion of capital. Under the background of China's economic new normal and the transformation of main contradictions, Inclusive Green Growth, as a new sustainable development path proposed by the international community, not only reflects the worldwide yearning for fair distribution and green environment but also reflects the main connotation of China's high-quality development goals, which is the inevitable requirement to meet the people's yearning for a better life. Fiscal expenditure is the most direct and effective means of fiscal policy. The efficiency of the fiscal expenditure structure reflects the level of national governance ability. In the reality of fiscal revenue and expenditure contradiction, appropriate adjustment of the fiscal expenditure structure can make the allocation of fiscal funds more effective and achieve better goals with lower governance cost. Therefore, we construct a theoretical model of the structural efficiency of government fiscal expenditure under the goal of Inclusive Green Growth. Secondly, according to the relevant theories and existing research basis, the evaluation index system of Inclusive Green Growth is constructed, and the relevant indexes are calculated and analyzed. Finally, we take Inclusive Green Growth as an output index and fiscal expenditure structure as an input index, and conduct DEA Malmquist index static and dynamic analysis. Based on this study, we give the following conclusions and suggestions.

(1) Different from the previous research results of Inclusive Green Growth from the perspective of counties (Li et al., 2021) [20] and counties (Chen et al., 2020) [21] or a few indicators (Sun et al., 2020) [22], this paper constructs an evaluation index system covering multiple dimensions from the perspective of regions, and it expands the application of Inclusive Green Growth at the provincial level. In particular, for China's fiscal policy system, the measurement results of Inclusive Green Growth at the provincial level can well match the regional fiscal expenditure. The fiscal expenditure efficiency is calculated, which provides a basis for the study of regional heterogeneity. The growth rate of the Inclusive Green Growth index shows a downward trend year by year under the background of the new normal economy. After the implementation of the supply-side structural reform in 2016, the downward trend of the growth rate has eased. The recovery of the overall index growth rate benefits from the increase in the growth rate of the inclusive level, while the growth rate of the green level has had little change in recent years. Therefore, at a time when the international trade is not optimistic, the domestic economy has great downward resistance, and the technological revolution has not yet arrived, the government should focus on technological breakthrough, social equity, and environmental protection, continue to deepen the supply-side structural reform, and do a good job in the internal adjustment of the country, so as to lay the foundation for the next economic boom.

(2) The efficiency of fiscal expenditure structure with the goal of Inclusive Green Growth has a large space–time difference in the study period, and the difference has gradually expanded in recent years. The result is different from that of the traditional fiscal expenditure structure with GDP as output (Li, 2010) [12]. It is also different from the fiscal expenditure structure efficiency of green growth considering environmental factors (Qi and Zhao, 2020) [23] and inclusive growth considering social equity (Liu, 2020) [24] in recent years. The fundamental reason is that this paper studies inclusive green growth as a whole system. Without considering social equity and green environment, the efficiency of the fiscal expenditure structure measured only by GDP almost completely tends to increase the proportion of economic construction expenditure. China's eastern, central, and western regions should adopt this fiscal policy under the traditional thinking. However, the infrastructure construction in some areas of China is relatively perfect, and the problems of income distribution and environmental protection are becoming more and more prominent. The efficiency evaluation results of fiscal expenditure structure with Inclusive Green Growth as the new development goal show regional heterogeneity, and the tendency of fiscal expenditure structure in different regions should be different. For the eastern region, the average change rate of TFP of the fiscal expenditure structure under the Inclusive Green Growth goal is lower than that of other regions, and the fiscal expenditure structure should be inclined to social expenditure and green expenditure. In order to maintain the frontier of efficiency, the financial expenditure structure should focus on economic expenditure. There are great differences in the total factor productivity level of the central region's fiscal expenditure structure. Benchmarking cities should be set up to promote the demonstration effect.

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