Innovations

A study of Green Economic Growth with Financial perspectives: Evidence from High Polluting Asian Economies

Dr. Bhupendra Kumar
Accounting & Finance, College of Business & Economics Debre Tabor University Ethiopia
ORCID: 0000-0002-9609-2311
Dr. Vijayalakshmi P
Associate Professor,Faculty of Management Studies,
CMS Business School Jain (Deemed-to-be University) Bangaluru, India
Professor. Rajiv U Kalebar
Assistant Professor,
Faculty of Management Studies, CMS Business School
Jain (Deemed-to-be University) Bangaluru, India
Dr. Anil Kumar
Assistant Professor- History , Department of History, Government P.G . College Jalesar -Etah(U.P.)

Corresponding Author: **Dr. Bhupendra Kumar**

Abstract
In modern times, the economic development speed of Asian countries is not as fast as the average speed of European and American countries, and the economies of Asian countries have gradually normalized. ***Purpose:*** *Asian countries need to improve the speed of economic growth and economic benefits, and can only conduct market analysis through government departments and control the structure and model of financial expenditure, but such economic growth is at the expense of polluting the environment. To gather evidence for highly polluting Asian economies, it is necessary to analyze financial expenditure models in Asian countries and the impact of financial expenditure on green economic growth.* ***Methodology:*** *In this paper, the Cobb Douglas model was used to analyze the financial expenditure in Asia in detail, and the impact of the relevant policies of financial expenditure in Asia on the growth of Asia's green economy has been analyzed. Research findings: The environmental pollution index in Asia is generally high, and the financial expenditure on environmental protection can increase the growth rate of the green economy by 18.6%. Science and education expenditure, social security expenditure and employment expenditure can also increase the growth rate of the green economy to a certain extent and effectively reduce environmental pollution.* ***Research implications****: Financial expenditure in Asia severely constrains green economic growth, and the development of Asian economies has created highly polluting Asian economies.* ***Practical implications****: The structure of financial expenditure in Asia needs to be adjusted to increase the share of the green economy and adhere to sustainable environmental development.*

Keywords: 1.*Highly Polluting Asian Economies, 2.Financial Expenditure, 3.Green Economic Growth, 4.Cobb Douglas Model*

1. Introduction

In the past 50 years, the Asian economy has developed rapidly. The Asian countries focus on the development of heavy industry. While obtaining a lot of economic benefits, they also bring serious pollution to the natural environment. In order to maintain the economic development of the Asian region, the relevant governments in Asia implement financial expenditure measures. Through financial

expenditure, most of the resources are used to develop the economy, and the continuous development of the Asian economy will lead to an increase in financial expenditure. Increased financial expenditure and a lack of attention to the natural environment have made the green economy a small part of the overall economy. Asian countries are generally based on extensive economic development, which is a development model at the expense of ecological energy. Taking China as an example, extensive economic development has caused serious damage to China's water resources, land resources and forest resources. The economy of the Asian region is a model of highly polluting economies, and it is necessary to explore the specific structure of financial expenditure and the relationship between financial expenditure and green economies. There is also a need to improve the status quo of highly polluting Asian economies by restructuring financial expenditure. Therefore, this paper has research significance.

The development of the Asian economy requires the management of financial expenditure, and some researchers have analyzed that the financial expenditure in Asia are the reasons for the highly polluting Asian economies. Among them, Boso N's research showed that financial expenditure in Asia can speed up economic development, but the pollution to the environment is very serious [1]. Sang-Bin pointed out that the financial expenditure in Asia is mainly heavy industry, and the process of vigorously developing heavy industry will produce wastes that pollute the environment [2]. Yang J J said that financial expenditure can increase the speed of economic development, but it also produces a lot of pollutants [3]. Magablih A M's research showed that Asian countries tend to develop machinery, factories, etc. for financial expenditure, which has a greater degree of damage to the local environment [4]. According to Ranganathan M's investigation on Asian economic development, the financial expenditure structure of Asian countries is dominated by the chemical industry [5]. Financial expenditure by Asian countries is the main cause of heavy pollution in Asian economies, but no mention is made of the relationship between financial expenditure and green economic growth.

Green economy is the effective protection of the ecological environment. Many people have analyzed the financial expenditure and green economic growth in Asia. Among them, Hamid N A stated that there is an inverse relationship between financial expenditure and green economic growth in Asia. The development of the Asian region focuses on economic development, but does not do well in environmental protection [6]. Wu W's research showed that clean energy in the green economy industry can effectively reduce environmental pollution and achieve green economic growth [7]. Lin B pointed out that green economic growth is the manifestation of sustainable environmental development, and changing the structure of financial expenditure can lead to the trend of green economic growth [8]. Sheng W A analyzed the green economy in Asia and concluded that the focus of financial expenditure in Asia is not the development of the green economy [9]. Bezin E's research showed that financial expenditure should balance the relationship between Asian economic development and green economic growth, and adhere to the path of sustainable environmental development [10]. Although analyzing the relationship between financial expenditure and green economic growth can effectively improve the ecological environment, the analysis of the structure of financial expenditure is not thorough enough.

Financial expenditure is the government's control over the structure of the economic system, but Asian countries do not pay enough attention to the ecological environment. This paper uses the Cobb Douglas model to analyze the structure and model of financial expenditure in Asia, analyzes the reasons that affect the growth of green economy, and determines the current situation of pollution in Asian economies. The innovation of this paper is that it uses the Cobb Douglas model to analyze financial expenditure in Asia, and sets up a comparative analysis of the factors that affect green economic growth.

2. Methods of Discussing Financial Expenditure

Economic growth is a key indicator for assessing a country's level of economic progress, and Asian governments attach great importance to it. When the state needs to intervene and influence economic development, financial policy is one of the tools often used by the government in state management [11]. The overall scope of financial expenditure can be increased or decreased depending on the level of market intervention the government wishes to increase or decrease. If the government

intends to change the direction of the market, the proportional relationship between the many factors in financial expenditure can be changed. Financial expenditure plays a key role in Asian economic development. Asian countries pay too much attention to economic development, and they also need to attach great importance to the green economy. There is a feedback mechanism between financial expenditure and green economy. The structural model of financial expenditure is shown in Figure 1.

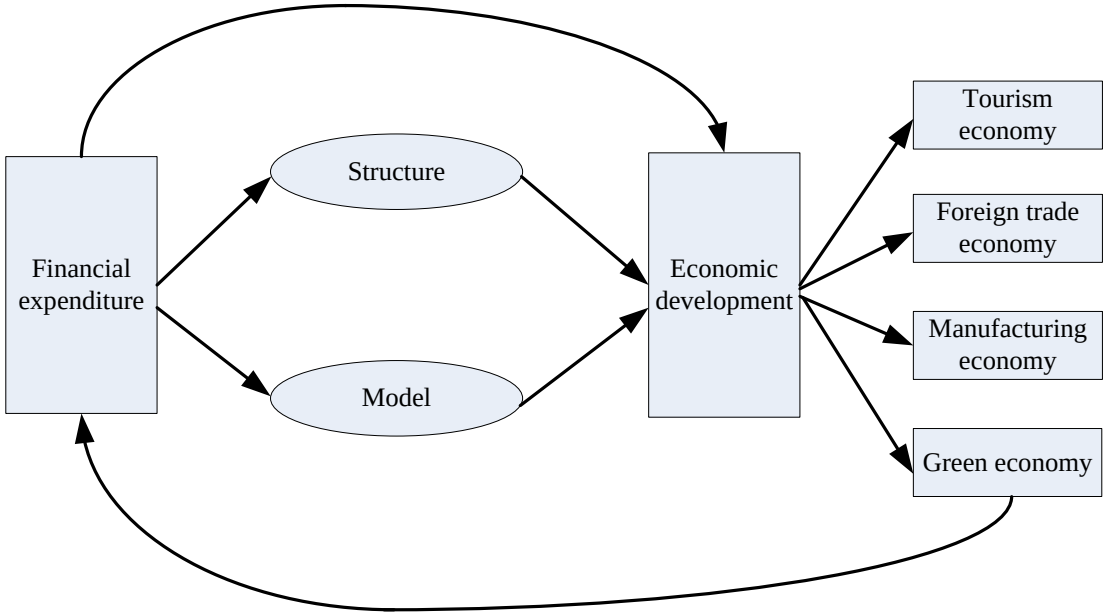


Figure 1. Structural model diagram of financial expenditure

In Figure 1, financial expenditure improves local economic development by changing its own structure and model to adjust the trend of economic development in Asia, and the development of green economy is the main economy in recent years. Green economy is the result of sustainable environmental development. If the green economy suffers a serious downturn, it will inevitably affect economic development. Therefore, financial expenditure must ensure the development of a green economy, and the structure of financial expenditure is usually analyzed by the Cobb-Douglas model [12].

2.1 Sustainable Environmental Development

Sustainable environmental development is a measure for the joint development of economic development and environmental protection. In the last century, due to the relatively backward economy in Asia, the vigorous development of the economy caused serious damage to the environment. With the continuous destruction of the environment, the economic growth rate of Asia was seriously stagnant. The situation of economic development and environmental pollution is an inverted U-shaped curve pattern, which can be represented by the environmental Nezkutz curve. Figure 2 is a graph of changes in economic development and environmental pollution.

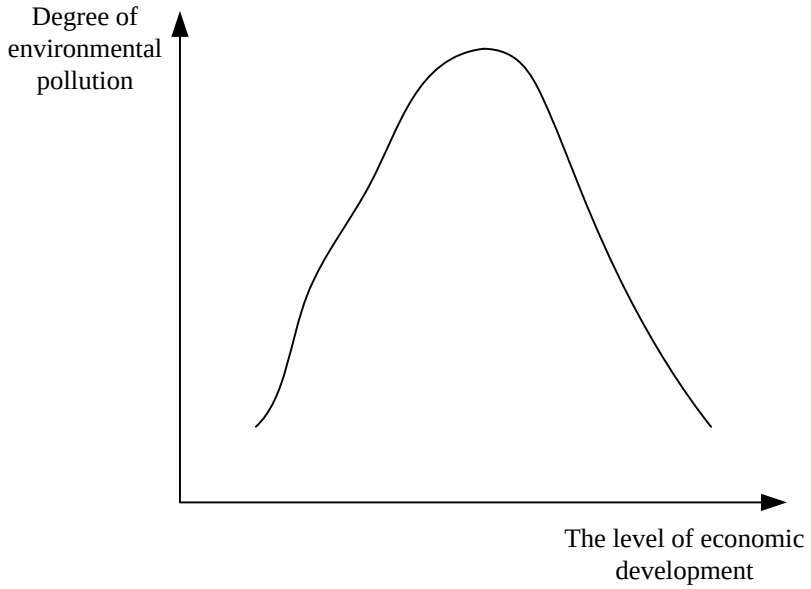


Figure 2. Changes in economic development and environmental pollution

In Figure 2, it can be clearly seen that when the level of economic development in Asia is relatively low, and people's damage to the environment is also low, which are in a state of harmonious coexistence with nature. However, when the economic development reaches the middle stage, all kinds of industrial equipment are developing in the form of maximization, and the environment has also suffered the greatest degree of damage at this time. When the Asian economy develops to a certain extent, the government reduces people's pollution to the environment by implementing environmental protection policies.

The growth of Asian economy requires not only the speed of economic growth but also the quality of economic growth, and green economy is the standard to measure the quality of economic growth [13]. However, in the analysis of the green economy, the measurement of carbon dioxide emissions in the environment is mainly used, but the representative data analysis is not comprehensive enough. Therefore, the entropy weight method is used to analyze the quality of economic growth.

2.2 Cobb Douglas Model

The growth of green economy and the development of Asian industries are in a negative correlation mode. The growth of green economy is affected by the government's financial expenditure. The Cobb-Douglas model is an economic growth analysis model. On the basis of the Cobb-Douglas model, green economic factors are added to conduct a detailed analysis of green economic growth [14]. The Cobb Douglas model is shown in Figure 3.

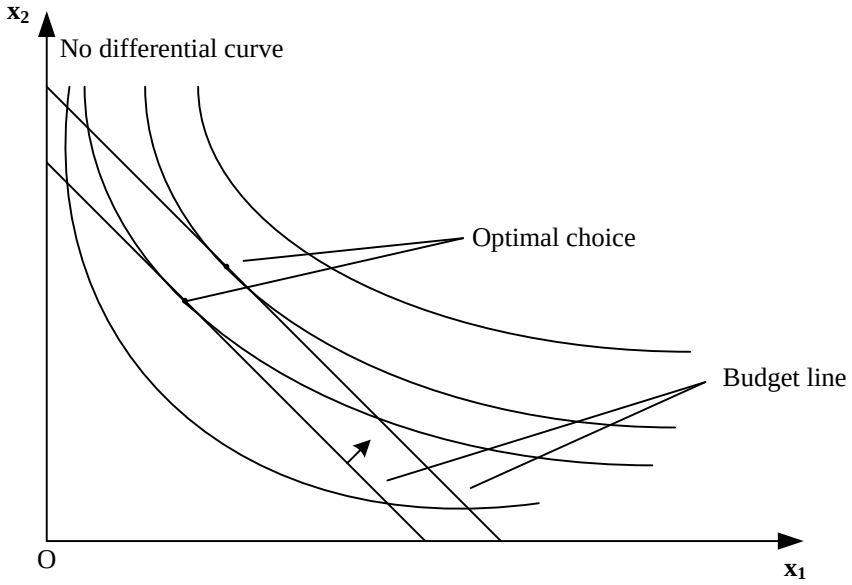


Figure 3. Diagram of the Cobb Douglas model

In Figure 3, x_1 and x_2 represent economic development and environmental protection respectively. Through the analysis of indifference curve and budget line to find the intersection point, this is the best choice for green economic development.

The specific expression formula of the Cobb Douglas model is as Formula 1:

$$U = A(t)B^a C^b \mu \quad (1)$$

In Formula 1, A represents the technical level of economic development in Asian countries. B represents the scale of the development of the labor force. C represents the amount of capital for economic development. U represents the gross output value of economic development.

According to the analysis of Formula 1, the main factors affecting the total output value of economic development are the technological level of A, the scale of development of B, and the amount of capital input of C. The values of the coefficients a and b of the development scale and capital investment can be combined in various ways. Specifically, they can be divided into three types:

Firstly, when $a+b>1$, it indicates that the current level of technology has the ability to convert the invested funds into more total output value.

Secondly, when $a+b<1$, it indicates that under the current technological level, the total output value of economic development and the capital invested are an inverse relationship.

Thirdly, when $a+b=1$, it means that no matter how much capital is invested, it will not cause changes in the total output value of economic development, and only the level of science and technology can increase the total output value [15].

However, in actual production and life, the Cobb Douglas model needs to consider many factors S $(S_1, S_2, \cdots, S_n)$ when analyzing the economic development of Asia. Then the formula is expressed as Formula 2:

$$U_t = AS_1^{a_1} S_2^{a_2} \cdots S_n^{a_n} \quad (2)$$

In Formula 2, a_n represents the coefficient of the n-th factor.

Taking the logarithmic simplification of both sides of Formula 2, Formula 3 can be obtained:

$$\ln(U) = \ln(A) + a_1 \ln(S_1) + a_2 \ln(S_2) + \cdots + a_n \ln(S_n) \quad (3)$$

In Formula 3, U represents the total output value.

Adding the Asian economic capital stock to the original Cobb-Douglas model, the new economic growth function is expressed as Formula 4:

$$U_t = F(B(t), C(t), D(t)e^k) \quad (4)$$

In Formula 4, D represents the stock of co-payment capital.

Introducing the financial expenditure to the Cobb Douglas model to make the scale of financial expenditure be H, then the impact model of the scale of financial expenditure on economic growth is as Formula 5:

$$U_t = F(B(t), C(t), H(t)) = AB^{a_1}C^{a_2}H^r \quad (5)$$

The logarithm of Formula 5 can be simplified to get Formula 6:

$$\ln(U) = \ln(A) + a_1 \ln(B) + a_2 \ln(C) + r \ln(H) \quad (6)$$

Formula 7 can be obtained through calculating:

$$r = \frac{dU * H}{dH * U} = \frac{M * H}{U} \quad (7)$$

In Formula 7, r represents the elasticity factor of financial expenditure.

Assuming that the scale of financial expenditure is denoted by g, then Formula 8 can be obtained:

$$g = \frac{H}{U} \quad (8)$$

Combining Formula 7 and Formula 8, Formula 9 can be obtained:

$$r = g * M \quad (9)$$

When the value of M is 1, $r = g$. At this time, the economic growth of Asia under this fiscal scale is optimal.

Regression analysis is carried out on the scale of financial expenditure, and Formula 10 is obtained:

$$\ln(U) = b + \ln(A) + b_1 \ln(B) + b_2 \ln(H) + \lambda \quad (10)$$

In the same way, the structure of financial expenditure is analyzed. Supposing that the scale of financial expenditure is E $(E_1, E_2, \cdots, E_n)$, then the impact model of the scale of financial expenditure on economic growth is as Formula 11:

$$U_t = F(A(t), B(t), E_1, E_2, \cdots, E_n) \quad (11)$$

In Formula 11, E_n represents the n-th financial expenditure structure.

Deformation of Formula 11 yields Formula 12:

$$\ln(U) = b + \ln(A) + b_1 \ln(B) + b_2 \ln(E_1) + \cdots + b_m \ln(E_n) + \lambda \quad (12)$$

In Formula 12, λ means the constant.

2.3 Entropy Weight Method

The entropy weight method is a common index evaluation and analysis method, which can objectively analyze the information contained in multiple indicators, and can effectively analyze the impact of financial expenditure on the green economy [16]. The structure of the entropy weight method is shown in Figure 4.

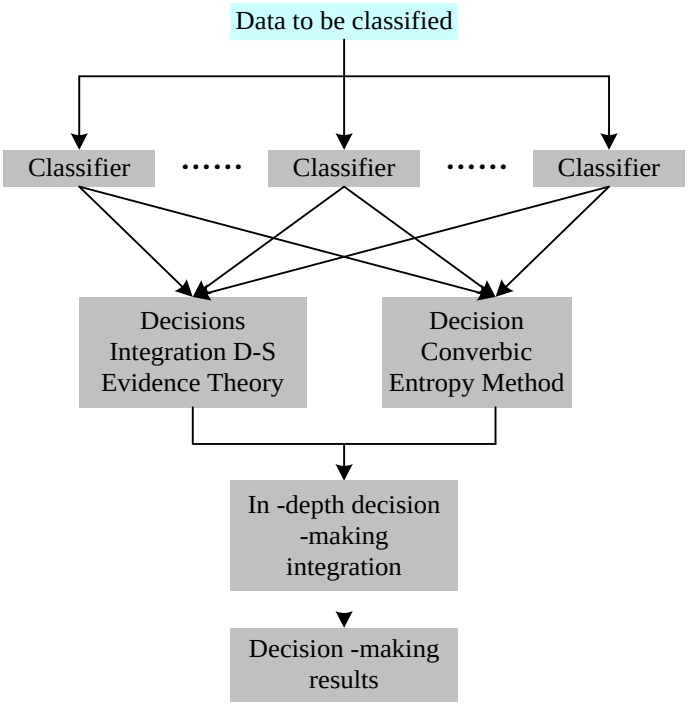


Figure 4. Structure diagram of entropy weight method

For the analysis of A regions in Asia, there are B evaluation indicators. Then the indicator evaluation of each region can be expressed as Formula 13:

$$S = (s_{ij})_{a\times b} \quad (13)$$

In Formula 13, the value range of i is $(1,2,\cdots,a)$, and the value range of j is $(1,2,\cdots,b)$.

To standardize different data, the processing process is as Formula 14:

$$s_{ij} = P + \frac{s_{ij} - \min(s_{ij})}{\max(s_{ij}) - \min(s_{ij})} * Q \quad (14)$$

In Formula 14, P is the normalized processing parameter, and Q is a scaling factor.

Assuming that $P=1$, $Q=1$, then the indicator weight corresponding to s_{ij} is expressed as Formula 15:

$$R_{ij} = \frac{s_{ij}}{\sum_{i=1}^{a} s_{ij}} \quad (15)$$

The entropy value of the j-th column index is calculated as Formula 16:

$$T_j = -d\sum_{i=1}^{a} R_{ij} \ln P_{ij} \quad (16)$$

Among them, d is expressed as Formula 17:

$$d = \frac{1}{\ln a} \quad (17)$$

The difference value of the index in the j-th column can be found through Formula 18.

$$f_j = 1 - T_j \quad (18)$$

In Formula 18, the larger the value of f_j, the higher the weight of the index and the more disordered the result of the index.

The comprehensive weight of each factor can be obtained by Formula 19:

$$w_j = \frac{f_j}{\sum_{j=1}^{b} f_j} \quad (19)$$

The analysis of the indicators affecting the growth of green economy is mainly carried out by analyzing the concentration of industrial waste, carbon dioxide and dust in the air [17].

3. Financial Expenditure and Experiment Design for Green Economy

3.1 Experimental Data

The economic development of Asian countries needs financial expenditure to adjust, but the proportion of green economy in Asian countries is not very high, and the governance of the ecological environment is not enough in the process of economic development [18]. Therefore, it is necessary to analyze the structure and scale of financial expenditure, to study the main financial expenditure in Asian Asian economies, and the impact of financial expenditure structure on the green economy. Among Asian countries, this paper selected China as an example to investigate China's major financial expenditure from 1990 to 2020. The main financial expenditure items in China are shown in Table 1.

Table 1. List of major financial expenditure items in China

Financial Expenditure Category	Specific Items of Financial Expenditure	Financial Expenditure Ratio
Economic development spending	Environmental protection	14%
	Geological prospecting	5%
	Urban and rural affairs	5%
	External trade affairs	6%
Administrative expenses	New deal management	4%
	External affairs	8%
	Judicial affairs	6%
	Science education spending	15%
Social education spending	Social security	16%
	Employment spending	15%
Defense spending	Defense spending	6%

In Table 1, the highest proportion of China's financial expenditure during 1990-2020 was social security expenditure. The proportion of financial expenditure that exceeded the average value included expenditure on environmental protection, expenditure on science and education, expenditure on social security, and expenditure on employment [19].

Due to the differences between Asian countries and regions, different regions have different degrees of environmental pollution. Taking China as an example, the regions were divided into eastern, central and western regions to investigate the pollution of different cities to the local environment [20]. The pollution index mainly measured carbon dioxide emissions. The pollution index of some cities in China from 2010 to 2018 is shown in Table 2.

Table 2. The pollution index of some cities in China

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018
Beijing	1.42	1.41	1.45	1.46	1.48	1.47	1.44	1.43	1.43
Tianjin	1.43	1.42	1.36	1.37	1.36	1.34	1.34	1.33	1.35
Jiangsu	1.55	1.56	1.64	1.58	1.62	1.59	1.58	1.59	1.60
Zhejiang	1.48	1.49	1.44	1.48	1.49	1.44	1.45	1.46	1.46
Xinjiang	1.10	1.11	1.12	1.16	1.14	1.15	1.16	1.11	1.10
Yunnan	1.16	1.18	1.17	1.16	1.18	1.13	1.16	1.15	1.13

In Table 2, the pollution index of eastern, western and central regions of China was counted. The larger the value of the pollution index, the higher the local pollution level. Data fitting was performed on the environmental pollution in the eastern, western and central regions, and the average comprehensive pollution index of each region was calculated. The environmental pollution in each region is shown in Figure 5.

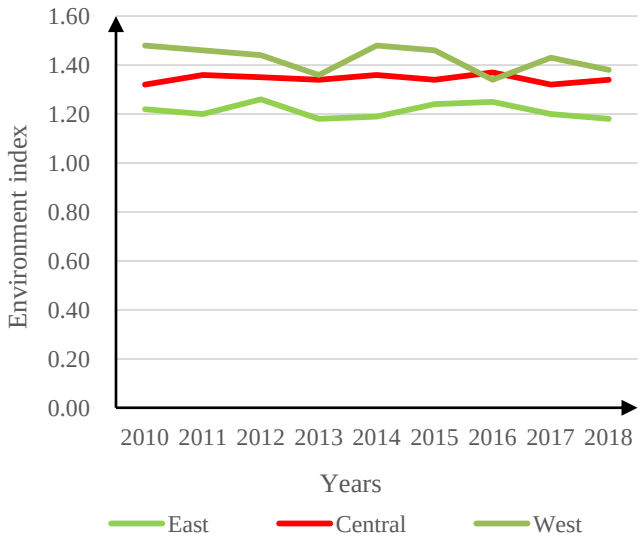


Figure 5. Map of environmental pollution by region

In Figure 5, the environmental index in the eastern region was low. The environmental index in the central region was stable, and the environmental index in the western region was high. Therefore, the environmental index is affected by regions, and there are different environmental index changes in different regions.

3.2 Experimental Design

Taking the Douglas production function as the basis for the analysis of financial expenditure, the structural model of financial expenditure was analyzed, and the impact on the green economy and the environmental pollution were analyzed through the main items of financial expenditure [21]. Since different regions have different effects on the local environment, this paper selected two Asian regions, Beijing and Tianjin, as the comparison sites for the experiment.

Validity analysis of green economy impact on environmental protection expenditures, science and education expenditures, social security expenditures, and employment expenditures was required before the indicators were compared, the purpose of which was to test whether these four indicators can be used to compare the green economy analysis between Beijing and Tianjin. The results of the validity analysis are shown in Table 3.

Table 3. Results of indicator validity analysis

Serial Number	Index	Beijing	Tianjin
1	Environmental protection expenditure	86%	78%
2	Science education spending	78%	84%
3	Social security spending	92%	88%
4	Employment spending	88%	89%
5	Average	86%	85%

In Table 3, the financial expenditure that most affected the green economy in Beijing was social

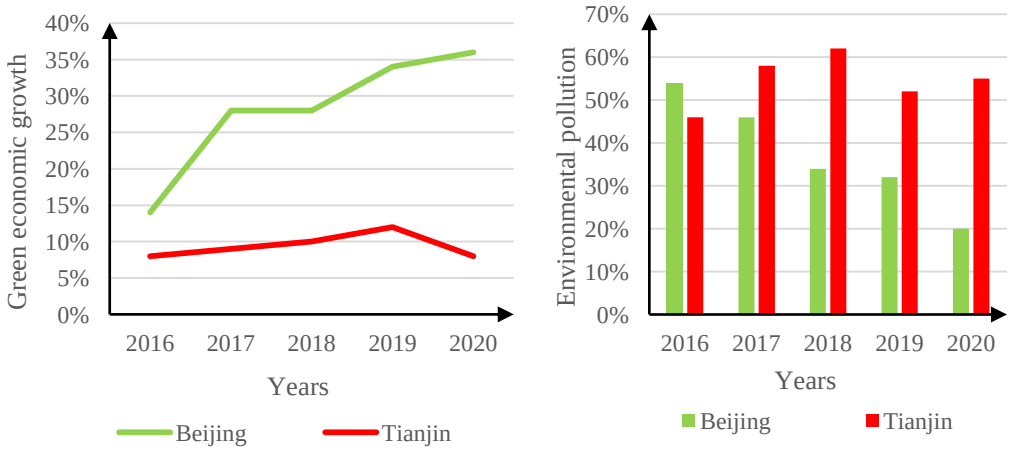
security expenditure, while the financial expenditure that most affected the green economy in Tianjin was employment expenditure. The four financial expenditure indicators in the two regions averaged 86% and 85%. Therefore, these four financial indicators can be used to compare the differences in green economy and environmental pollution between Beijing and Tianjin.

Since Beijing's financial expenditure is larger than Tianjin's, and Beijing and Tianjin are located in similar regions, regarding the impact of financial expenditure in Beijing and Tianjin, the impact of financial expenditure on green economic growth and the local environment can be analyzed [22].

4. Results and Discussion of Green Economic Growth

4.1 Financial Expenditure for Environmental Protection

Economic construction is the primary goal of the development of Asian countries, but the passage of economic development will also cause a certain degree of damage to the environment. Financial expenditure on environmental protection is an appropriate intervention by the government on environmental issues. In order to compare the impact of financial expenditures on environmental protection in Beijing and Tianjin on the green economy and the local environment, the experiment calculated the changes in the green economy and local environment of the two places from 2015 to 2020. Figure 6 shows the impact of environmental protection financial expenditure on Beijing and Tianjin.



(a) Green economic growth **(b) Environmental pollution**

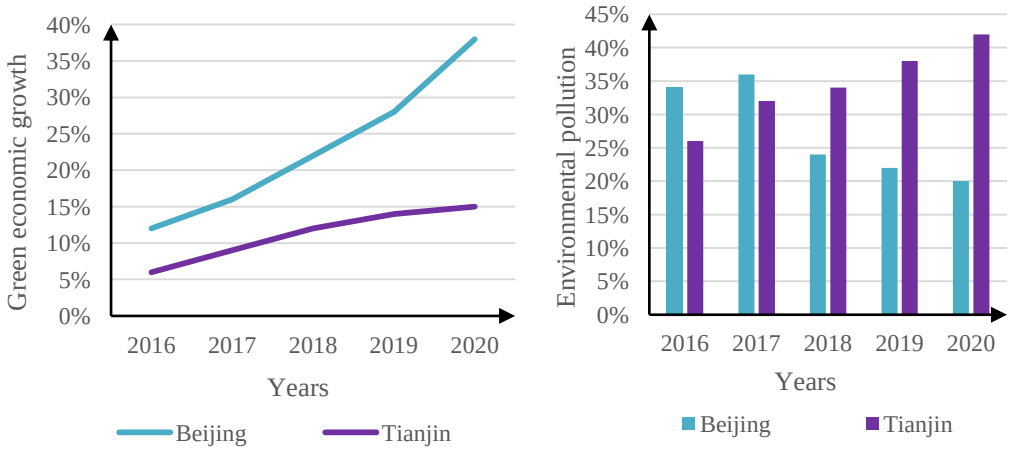
Figure 6. Comparison of financial expenditures for environmental protection

Figure 6(a) shows the growth of the green economy in Beijing and Tianjin from 2016 to 2020. Under the influence of environmental protection financial expenditure in Beijing, the growth rate of the green economy has continued to rise. Due to the relatively small proportion of financial expenditure on environmental protection in Tianjin, the impact on the growth rate of Tianjin's green economy was very slow, which even showed a downward trend in 2019. The average green economy growth rates in Beijing and Tianjin were 28% and 9.4% respectively. In Figure 6(b), it can be clearly seen that the average pollution level of Tianjin was more serious than that of Beijing, and the pollution level of Beijing was gradually decreasing. The average pollution level of the two places was 37.2% and 54.6% respectively. Therefore, increasing investment in environmental protection by increasing financial expenditure can effectively increase the growth rate of green economy and reduce environmental pollution.

4.2 Financial Expenditure on Science Education

Science education is also the main direction of financial expenditure. In order to compare the impact of science education financial expenditure on the green economy and environmental pollution, the experiment compared the data of Beijing and Tianjin between 2015 and 2020 [23]. The data was collected every one year, and the green economic growth rate and environmental pollution of the two places were counted. Figure 7 shows the impact of science education financial expenditure on Beijing

and Tianjin.



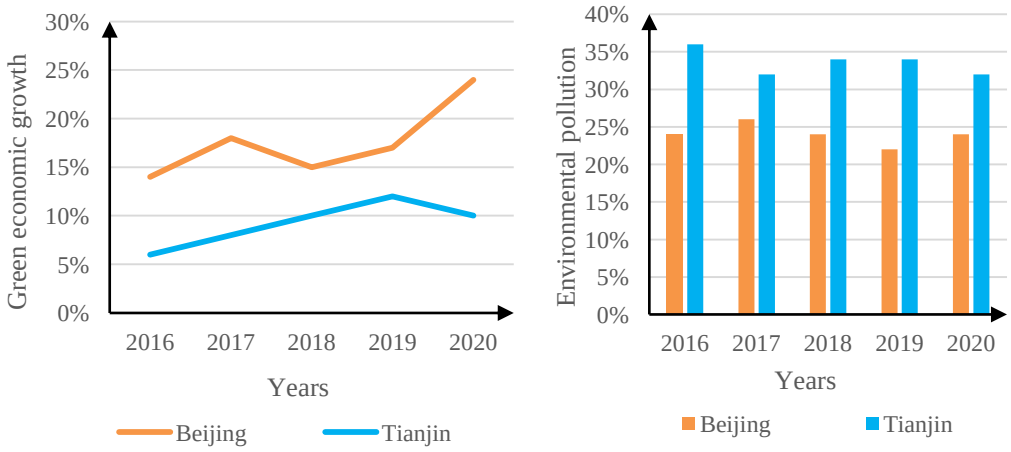
(a) Green economic growth **(b) Environmental pollution**

Figure 7. Comparison of financial expenditures for science education

In Figure 7(a), both Beijing and Tianjin had increasing green economic growth rates, but Beijing had a larger green economic growth rate. The average green economy growth rates for Beijing and Tianjin from 2016 to 2020 were 23.2% and 11.2% respectively. In Figure 7(b), the environmental pollution degree in Beijing was decreasing under the influence of the financial expenditure on science and education, while the environmental pollution degree in Tianjin area was increasing. The financial expenditure of science education can reduce the pollution to the environment to a certain extent.

4.3 Social Security Financial Expenditure

Social security financial expenditure is a kind of social security provided by the government to people. The control variable method was used for Beijing and Tianjin, and only the social security financial expenditures of the two places were controlled to be different. The environmental pollution in Beijing and Tianjin, as well as the green economic growth in the two places, was compared [24]. Figure 8 shows the impact of social security financial expenditure on Beijing and Tianjin.



(a) Green economic growth **(b) Environmental pollution**

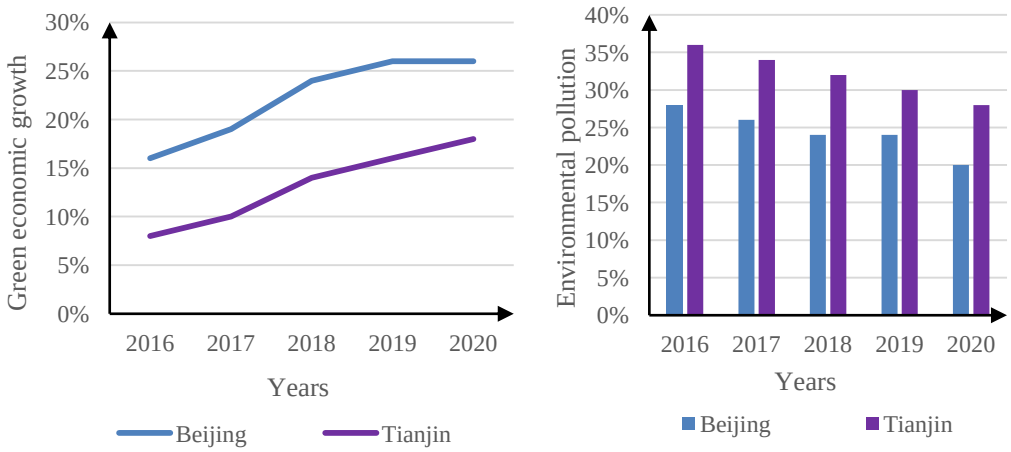
Figure 8. Comparison of social security financial expenditure results

In Figure 8(a), the growth rates of green economy in Beijing and Tianjin were generally in a slow upward trend, but the average growth rate of green economy in Beijing was higher than that in Tianjin. In 2020, the green economy growth rates of the two were 10% and 24% respectively. In Figure 8(b), the changes in environmental pollution in Beijing and Tianjin were relatively stable, and the average

environmental pollution of the two was 24% and 33.6%. Beijing can increase the growth rate of the green economy by increasing its social security financial expenditure, and by improving the environmental pollution situation.

4.4 Employment Financial Expenditure

The destruction of the environment is in large part due to illegal operations and uncontrolled claims to natural resources. Employment financial expenditure can solve people's employment problem to a certain extent, thus reducing the damage to the environment from the root. Figure 9 shows the impact of employment financial expenditure in Beijing and Tianjin on local green economic growth and environmental pollution.



(a) Green economic growth **(b) Environmental pollution**

Figure 9. Comparison of employment financial expenditure

In Figure 9(a), the growth rate of green economy in Beijing and Tianjin had been increasing under the influence of employment and financial expenditure, but the growth of green economy in Beijing was more obvious. The average growth rates of the two green economies were 22.2% and 13.2% respectively. In Figure 9(b), the environmental problems in Beijing and Tianjin had both improved to a certain extent, but the environmental pollution in Tianjin was more serious. The environmental pollution levels of the two were 24.4% and 32% respectively. Therefore, the implementation of employment financial expenditure can also improve environmental governance and enhance the growth rate of the green economy.

5. Conclusions

Through the analysis of China's main financial expenditure, this paper found that expenditures on environmental protection, science and education, social security and employment account for a relatively high proportion of financial expenditure. By investigating the environmental pollution in cities all over China, it is found that the damage to the environment is relatively serious in the process of economic development, and the severity is different in different regions. A comparative analysis of financial expenditure in Beijing and Tianjin was carried out. The experimental results showed that by increasing environmental protection expenditure, scientific education expenditure, social security expenditure and employment expenditure, the average growth rate of green economy can be increased by 9.6%, which can effectively reduce environmental pollution. Therefore, the Asian region has caused serious damage to the ecological environment in the process of economic development. Asian economies are economies with high pollution. However, by adjusting the structure and model of financial expenditure, such as increasing expenditure on environmental protection, the environment can be effectively protected. When this paper studies the impact of financial expenditure on the ecological environment, the subdivision of specific items of financial expenditure is not detailed enough. Green economic growth and environmental issues are not analyzed in other financial expenditure either. The

subdivision and analysis of the financial expenditure of Asian countries will be the direction of future research.

References

1. *BosoN, DansoA, LeonidouC, Uddin M, Adeola O, Hultman M, et al. Does financial resource slack drive sustainability expenditure in developing economy small and medium-sized enterprises?[J]. Journal of Business Research, 2017, 80(nov.):247-256.*
2. *Sang-Bin, Lim, Yong-Woo, Ko. Study on the Development of Local Tax Expenditure Budget System - Focusing on Comprehensive Financial Expenditure Report -[J]. Journal of Tax Studies, 2017, 17(2):81-103.*
3. *Yang J J, Maloney N J, Cheng K, Bach D Q. Financial burden in US patients with melanoma from 1997 to 2015: Racial disparities, trends, and predictors of high expenditures[J]. Journal of the American Academy of Dermatology, 2021, 84(3):819-821.*
4. *Magablih A M. The Role of Internal Financial Controls, In Raising the Efficiency of the Accounting and Auditing of Government Revenue, Expenditure Control and Corruption Checking: The Case of Jordan[J]. International Journal of Asian Social Science, 2018, 8(8):509-517.*
5. *Ranganathan M, Narayana. Universal social pension for elderly individuals in India Public expenditure requirements and fiscal sustainability[J]. Indian Growth & Development Review, 2017, 10(2):89-116.*
6. *Kumar B. & D. Singh (2021). The impact of branch expansion dimensions on deposit mobilization with special reference Dashen bank S.C, Ethiopia. International Journal of Mechanical Engineering I ISSN: Vol. 6 P.625-636*
7. *Wu W, Cheng Y, Lin X, Yao X. How does the implementation of the Policy of Electricity Substitution influence green economic growth in China? [J]. Energy Policy, 2019, 131(AUG.):251-261.*
8. *Lin B, Zhu J. Fiscal spending and green economic growth: Evidence from China[J]. Energy economics, 2019, 83(Sep.):264-271.*
9. *Sheng W A, Lw B, Xz A. Impact of the green credit policy on external financing, economic growth and energy consumption of the manufacturing industry[J]. Chinese Journal of Population, Resources and Environment, 2022, 20(1):59-68.*
10. *Bezin E. The economics of green consumption, cultural transmission and sustainable technological change[J]. Journal of Economic Theory, 2019, 181(MAY):497-546.*
11. *Kumar B. (2021). Innovation in corporate cash holding & management: an empirical investigation. Empirical Economics Letters, ISSN 1681 8997*
12. *Weerasinghe A S, Ramachandra T. Economic sustainability of green buildings: a comparative analysis of green vs non-green[J]. Built Environment Project and Asset Management, 2018, 8(5):528-543.*
13. *Kumar B. (2021). Determinants of internet financial reporting: in the case of Ethiopian insurance and banking sector companies. Innovations, 2021, 66: 760–778.*
14. *Sethi N, Mishra B R, Bhujabal P, Tyler D C, Connelly J. Do market size and financial development indicators affect human capital of select south Asian economies? [J]. International Journal of Social Economics, 2019, 46(7):887-903.*
15. *Kumar B.(2020). Determinants of dividend payout ratio: empirical evidence from Ethiopian private banks. Palarch's Journal of Archaeology of Egypt/Egyptology*
16. *[16] Kumar, Ajay, Rohila, Anil, Kumar, Pal, et al. Profitability and resource use efficiency in vegetable cultivation in Haryana: Application of Cobb-Douglas production model[J]. The Indian Journal of Agricultural Sciences, 2018, 88(7):1137-1141.*
17. *Huo Z, Guo M, Xiao L, He Z, Rong X, Wei B, et al. TACD: A throughput allocation method based on variant of Cobb-Douglas for hybrid storage system[J]. Journal of Parallel and Distributed Computing, 2019, 128(6):43-56.*
18. *Kolak O I, Feyzioglu O, Birbil S I, Noyan N, Yalqindag S. Using emission functions in*

modeling environmentally sustainable traffic assignment policies[J]. Journal of Industrial & Management Optimization, 2017, 9(2):341-363.

19. *Kumar B, Manrai A K, Manrai L A. Purchasing behaviour for environmentally sustainable products: A conceptual framework and empirical study[J]. Journal of retailing and consumer services, 2017, 34(1):1-9.*
20. *Abdul-Wahab S A, Hassan E M, Al-Jabri K S, Yetilmezsoy K. Application of zeolite/kaolin combination for replacement of partial cement clinker to manufacture environmentally sustainable cement in Oman[J]. Environmental engineering research, 2019, 24(2):246-253.*
21. *Acquaye A, Ibn-Mohammed T, Genovese A, Afrifa G A, Yamoah F A, Oppon E, et al. A quantitative model for environmentally sustainable supply chain performance measurement[J]. European Journal of Operational Research, 2018, 269(1):188-205.*

Corresponding Email: ***drbkumar@dtu.edu.et*** **,** ***dr.vijayalakshmi@cms.ac.in*** **,** ***prof.rajiv@cms.ac.in*** **,** ***drgautamanilkumar99@gmail.com***