

CHINA CONDUCTS RESEARCH ON THE RELATIONSHIP BETWEEN INVESTMENT AND CARBON EMISSIONS IN COUNTRIES ALONG THE "BELT AND ROAD"*

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Abstract

This paper mainly focuses on the investment of countries along the "Belt and Road", "Belt and Road" carbon emissions, "Belt and Road" countries carbon emission reduction targets, policies and actions of countries along the "Belt and Road", and "future outlook", these aspects, stabilize the economic development of countries along the routes, accelerate the development of digital economy of countries along the "Belt and Road", and analyze the investment and carbon emissions of countries along the "Belt and Road".

Keywords: Belt and Road; Countries Along the Belt; Carbon Emissions; Carbon Emission Impact Factors; Carbon Emission Reduction Targets.

Introduction

As China's economic development has entered a new era, under the "Belt and Road" initiative, the digital economy of countries along the Belt and Road has entered a brand new stage of development. Strengthening the construction of digital economy in countries along the "Belt and Road" route can help countries' international trade and economic development. China's carbon emissions account for 28% of the global total, and the global carbon reduction trend is closely related to China's energy conservation and emission reduction. Therefore, this paper study the carbon emission relationship between countries invested by countries along the "Belt and Road" will provide new ideas for countries to conduct regional cooperation across administrative boundaries to promote green development.

In the field of power reduction, the development of renewable energy, clean energy and improved energy efficiency, emission reduction is mainly to improve fuel economy and vehicle emission standards, promote the application of clean fuel and technology, improve road networks and develop public transportation; in agriculture and forestry, strengthen land management, promote agricultural and animal husbandry reduction, increase forestry carbon sink, and participate in REDD + (reduce deforestation and forest degradation) projects; the industrial sector mainly promotes industrial energy conservation and promote industrial modernization. In addition, some countries have put forward emission reduction measures in waste treatment or to promote carbon reduction by using the market mechanism, levying a carbon tax, and raising the low-carbon awareness of the whole society.

In 2011, China, Turkey, Iran, and other countries had high carbon emissions, while Kyrgyzstan, Tajikistan, and others had low carbon emissions. By 2015, the spatial separation of carbon emissions tended to be stable, and the carbon emissions in some small countries in West Asia and Eastern Europe increased steadily. In terms of per capita carbon emissions, Ukraine, Kazakhstan, and other high-value countries in 2011, and by 2015, China replaced Ukraine with high per capita carbon emissions. Although the current greenhouse gases leading to climate change are largely due to the industrialization process already experienced in

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developed countries, the pressure on future carbon emissions will mainly come from developing countries. The 22 countries along the Belt and Road route have reached carbon peaks, but there is still a long way to go to achieve the goal of net zero emissions.

Research Objective

The study primarily investigates the relationship between investment in countries along the Belt and Road.

Literature Review

At the end of 2020, Chinese domestic investors set up more than 11,000 overseas enterprises in 63 countries along the "Belt and Road", involving 18 industrial categories of the national economy. Direct investment reached 22.54 billion US dollars, up 20.6% year on year, accounting for 14.7% of China's foreign direct investment flow in the same period, one percentage point higher than the previous year. In terms of industry composition, investment in manufacturing was \$7.68 billion, up 13.1% year on year, 34.1%; construction industry \$3.76 billion, or 16.7%; power production and supply industry \$2.48 billion, 11%; leasing and business services \$1.94 billion, or 8.6%; wholesale and retail \$1.61 billion, 7.1%; Scientific research and technology services \$870 million, 3.8%; Information transmission/software and Information technology services \$8.2 million, 3.6%; financial industry \$80 million, 3.5%. In terms of country composition, it mainly flows to Singapore, Indonesia, Thailand, Vietnam, the United Arab Emirates, Laos, Malaysia, Shupu Village, Pakistan, the Russian Federation, and other countries. From 2013 to 2020, China had accumulated direct investment of US \$139.85 billion in countries along the Belt and Road (Yuan & Sun, 2016).



Figure 1 China's investment in countries along the "Belt and Road" from 2013-2020 (US \$100 million)

The development of the digital economy in countries along the "Belt and Road" route cannot be done without the help of a large number of outstanding talents, especially high-tech talents (Guan & Roger, 2016). For example, countries along the Belt and Road can conduct extensive cooperation with Chinese universities to set up a "Digital Economy talent training base" and a "Digital Economy learning Group". Let the talents in the digital economy of different countries learn and share with each other, and jointly improve their professional knowledge and professional ability in the digital economy (Fu & Si, 2017).

For the network infrastructure of countries along the "Belt and Road", on the one hand, it needs to develop the foundation of digital economy and realize the coverage of "information technology". Increase the network infrastructure to ensure that the network infrastructure is "large", "high accuracy", and "strong security". On the other hand, we emphasize the combination of cloud computing and the digital economy. Countries along the "Belt and Road" can set up "cloud computing centers" to provide convenient cloud computing services for various digital economy cooperation.

In the "Belt and Road" environment, the digital economic cooperation between countries along the routes is becoming more and more frequent. How to build a network security protection system has become the focus of attention of countries along the Belt and Road (Liu, 2019). We will standardize the development of the digital economy in countries along the Belt and Road, and remind countries along the Belt and Road to take reasonable and legal means to carry out their own digital economic activities.

As mentioned above, per unit GDP energy consumption, log consumption, cement consumption and carbon dioxide emissions of countries along the "Belt and Road" are more than 50% higher than the world average, and per unit GDP steel consumption, non-ferrous metal consumption and water consumption are twice or more than those of the world average. Therefore, it can also be said that the industrial structure of the countries along the "Belt and Road" itself focuses on high carbon emissions. In addition, many countries along the "Belt and Road" are limited by their own economic development level, financial strength and technical level, and it is of great difficulty to achieve net zero emissions based on their subjective will or objective strength. The objective of this paper, then, is to find out how to achieve zero emissions as much as possible in the countries along the "Belt and Road". The main study of this paper is Factors affecting carbon emissions and carbon emissions from major countries along the Belt and Road " route (Guan et al., 2016)).

Research Methodology

This study uses a quantitative research approach to investigate the phenomenon. Quantitative research involves collecting and analyzing numerical data to expose the big picture. It can be used to gather insights into a problem for research. Quantitative research is the opposite of qualitative research, which involves collecting and analyzing non-numerical data. Firstly, on the basis of combining the relevant research literature and searching the relevant documents and data to understand characteristics, strategies and phenomena. Secondly, empirically applying scientific indicators and data to expose the research questions.

Findings and analysis

The spatial pattern of countries' carbon emissions along the Silk Road Economic Belt from 2011 to 2015 remained stable. China was the largest carbon emission country,

Kazakhstan, Turkey and Iran were high-value emission countries, and the carbon emissions of other countries were at a low level. The overall carbon emissions along the Silk Road Economic Belt from 2011 to 2015 are upward, and economic activity is the leading positive factor affecting the growth of carbon emissions; population size has a stable impact on carbon emissions. Population scale effect has a significant impact on countries with large population changes; the impact of economic activity effect on the carbon emissions of various countries shows an "inverted U" curve; the industrial structure effect and technical efficiency effect have an obvious negative effect on carbon emissions.

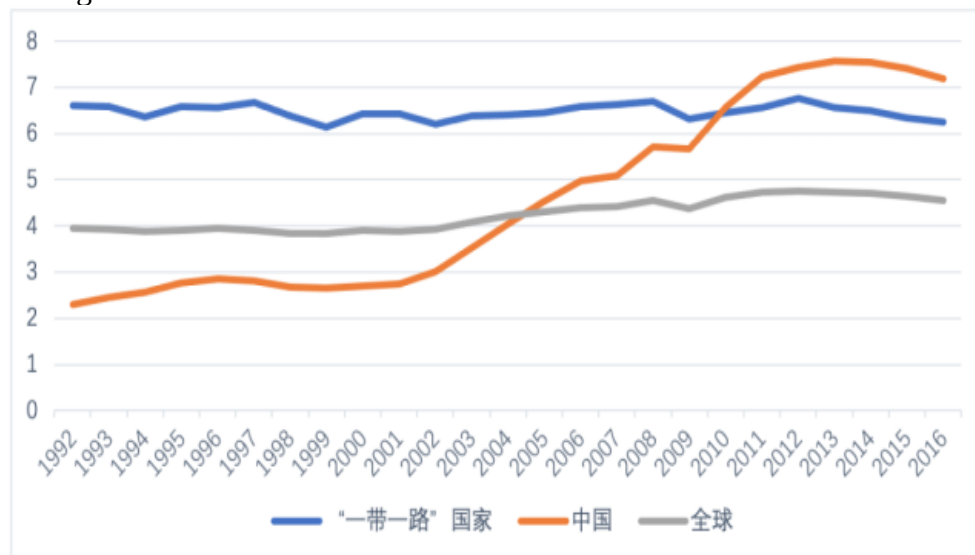


Figure 2 Global carbon emissions curve trend chart

According to the per capita carbon emission curve, the carbon emissions from countries along the "Belt and Road" route have been declining in recent years. The per capita carbon emissions of countries along the Belt and Road routes are far higher than the global average per capita. However, since 2011, per capita carbon emissions from countries along the Belt and Road route are decreasing, showing a slow downward trend. In terms of countries, India, Russia, Iran and other countries have large emissions, while Qatar, Kuwait and Bahrain have high per capita emissions. According to the 2016 carbon emissions data released by the World Bank, the per capita carbon emissions of 63 countries along the "Belt and Road" were 6.25 tons, and although the per capita carbon emissions decreased by 0.36 tons in 25 years, they are still 1.7 tons higher than the global emissions of 4.55 tons that year. Of the 63 countries along the Belt and Road, 22 have reached carbon peaks, accounting for 34.9% of countries along the Belt and Road, while the remaining 41 have yet to peak carbon emissions. Both carbon peak countries have not reached the peak; most have put forward conditional emission reduction targets and measures.

Conclusion and recommendations

The "Belt and Road" regional cooperation strategy is an international platform promoted by China. Reducing carbon emissions through intergovernmental cooperation is an effective way to control greenhouse gas emissions. Firstly, strengthen regional international cooperation and solve overcapacity enterprises through regional cooperation platforms.

Secondly, promote industrial innovation mode, build a network, information platform and green data center, and accelerate the development of green technology, equipment, and products. It will improve the energy consumption structure and efficiency of terminal energy products and promote the industrialization and scale of resource recycling. Finally, it will improve the carbon emission-related systems, connect the carbon emission rights of cooperative countries, and fully open up the carbon emission trading market.

It is suggested that the countries along the Belt and Road should adhere to the principles of green energy, green production, green life and green finance, and further strengthen the green "Belt and Road" cooperation with China, especially the construction projects with great impact on the environment. Next, in future, in some energy-intensive industries, countries along the Belt and Road can directly introduce energy conservation and emission reduction technologies from China, such as electric vehicles and high-speed rail technology in the transportation industry. Moreover, in the manufacturing sector, through the trade and imported investment with China, countries along the Belt and Road can use technology spillover and capital to promote industrial upgrading, improve production efficiency, and thus reducing the intensity of carbon emission. Furthermore, in the construction field, in addition to continuing to expand its investment in infrastructure, China's cooperation with countries along the Belt and Road can also expand to some other areas, such as green and energy-saving buildings and urban renovation projects. Finally, under the green "Belt and Road" initiative, China should focus on environmental cooperation with countries along the Belt and Road on clean and renewable energy sources such as hydro-power, solar, and wind power. China has advanced technology and rich experience in these fields and can help countries along the Belt and Road.

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