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## **CARBON TAX DESIGN AND ITS IMPACT ON CHINESE REGIONAL ECONOMY BASED ON EMPIRICAL ANALYSIS**

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### **Abstract**

The adoption of Carbon tax is usually thought to be one kind of important economic measures to reduce carbon emissions. On the one hand, the adoption of carbon tax can reduce the use of fuels that contain high percentage of carbon, and promote the development and use of renewable energy. On the other hand, the measure will affect energy prices, supply and demand, and income distribution, thus causing negative effects on economic growth. This paper discusses the design of the basic taxation system, and introduces the production function expansion model to analyze the economic impact of carbon tax collection on provinces and cities in China. However, the impact of carbon tax collection on the regional economic growth, energy consumption and income distribution can be dramatically different based on different levels of economic development, industrial structure, and energy resources in different regions. The main conclusion of this analysis is that the policy-making process should be based on local economic conditions, which can avoid possible negative effects on economic growth and income distribution. Moreover, it is necessary for carbon tax policies to coordinate with other relevant policies, so that good effects will be achieved.

*Key words:* carbon tax, design, regional economy, taxation system

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