

IMPACTS OF COAL RESOURCES TAX REFORM ON CHINA'S ECONOMY BASED ON A DYNAMIC COMPUTABLE GENERAL EQUILIBRIUM MODEL

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Overview

Coal resources tax reform from quantity-based collection to ad valorem collection has been raised by China's government recently. This paper conducts a dynamic computable general equilibrium (CGE) model to estimate the effects of the change. The model contains 40 sectors, including 6 fossil sectors and 4 electricity sectors. Based on the data for the year 2007, we apply the model to simulate the impacts of quantity-based collection and ad valorem collection on China, especially for the macroeconomy, energy structure, sectoral output, and total carbon emissions. The results indicate that the coal resources tax reform from quantity-based collection to ad valorem collection can restrain the output of sectors heavily dependent on coal, thus changing sectoral energy use and the whole energy structure in China. Besides, the total carbon emissions will be cut down effectively due to the reform policy, even though the GDP will be somewhat affected negatively.

The paper is organised as follows: After the introduction the second section gives a detailed description of our dynamic computable general equilibrium model, together with the model calibration and the data. The third section reports the results and analyzes the impacts of the reform policy on the macroeconomy, energy demand and structure, sectoral output and carbon emissions in China. In Section four, we conclude the paper and provide some policy implications.

Methods

Dynamic computable general equilibrium model.

Results

First, the coal resources tax reform from quantity-based collection to ad valorem collection can promote the production in the sectors which are not highly dependent on coal and otherwise restrain those of the high coal-intensive sectors.

Second, the energy structure in China will be changed. The demand of coal will be cut down, while the use of oil as well as gas will be increased, under the reform policy.

Third, total carbon emissions in China would be decreased effectively.

Finally, the GDP will be affected negatively, but on a small scale.

Conclusions

We employ a dynamic computable general equilibrium (CGE) model to estimate the effects of Coal resources tax reform from quantity-based collection to ad valorem collection on China. The simulation results demonstrate that, this reform policy can effectively improve the energy structure in China and reduce the carbon emissions.

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