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# RELATIONSHIP BETWEEN ENERGY CONSUMPTION, ECONOMIC DEVELOPMENT AND CARBON EMISSIONS IN CHINA

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## Abstract

Based on the improved C-D production function model, the relationship of China's energy consumption, economic growth and carbon emissions are comprehensively studied in this paper through the panel data in China from1991 to 2009. The research shows that energy consumption and economic growth have a long-term equilibrium and a one-way causality relationship from energy consumption to economic growth. In both elasticity coefficients and contributive rate, energy consumption plays the most important role among energy consumption, fixed capital and human capital. It is estimated China's carbon dioxide emissions will be reduced by 34.53% in 2020 compared with that in 2005 but there is a great pressure to realize this goal. Empirical research results indicate that the energy consumption contributive rate to economy growth will decline by 8.5% with those targets during the period of 2010-2020. The results of the research in this paper are against Environment Porter Hypothesis.

*Key words:* energy consumption, economic growth, carbon emission; empirical research

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