



北京理工大学学报 编辑部声明

经济成本的Monte Carlo模拟[J].北京理工大学学报(社会科学版),2013,15(4):1~6

经济成本的Monte Carlo模拟



二维码(扫一扫试试)

Monte Carlo Simulation of Cost to China's Economy of Oil Dependence

投稿时间: 2013-05-02

DOI:

中文关键词: [石油依赖](#) [经济成本](#) [蒙特卡洛模拟](#) [敏感度分析](#)

English Keywords: [oil dependence](#) [economic costs](#) [Monte Carlo simulation](#) [sensitivity analysis](#)

基金项目:国家自然科学基金资助项目(71271074)

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摘要点击次数: 263

全文下载次数: 178

中文摘要:

2011年中国成为世界第二大石油消费国,经济的石油依存度越来越高,财富转移、潜在GDP损失、宏观经济调整成本是石油进口国石油依赖经济成本三个重要组成部分.运用蒙特卡洛模拟方法,预测中国2015—2035年石油依赖的三部分成本,并进行相应的敏感度分析.结果表明:在当今国际石油价格越来越不受供需控制和我国居高不下的进口规模情况下,财富转移成为我国石油依赖总经济成本中的主导部分,占到总经济成本的65%左右.需求价格弹性、潜在GDP损失乘数、GDP价格弹性及完全竞争下的市场价格是影响石油依赖经济成本的主要参数.2035年前我国石油依赖的经济成本占GDP的比重维持在2.3%左右,难以实现石油独立.

English Summary:

In 2011, China became the world's second largest consumer of oil with increasing degree of dependence on oil. Economic costs of China's oil dependency are analyzed from three sections, which include transfer of wealth, possible cost of GDP and macroeconomic adjustment costs. The total economic costs of China's oil dependence from the year 2015 to 2035 can be predicted by Monte Carlo Method and the relevant sensitivity analysis can be carried out. The results indicate that transfer of wealth plays the leading part, which accounts for 65 percent of the total economic costs due to oil dependence. Price elasticity of demand, potential GDP loss multiplier, price elasticity of GDP and the market price under complete competition are the main influencing parameters. Before 2035, the ratio of economic costs of oil dependence to GDP in China will maintain at about 2.3%, which is difficult to achieve oil independence.