

环境与社会

产业结构、技术进步、对外开放程度与单位GDP能耗 ——基于省级面板数据和协整方法

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摘要:

运用面板协整技术研究各影响因素对中国各省区单位GDP能耗的影响方向和影响强度, 面板单位根检验和协整检验表明, 全国各区域单位GDP能耗和各影响因素均为一阶单整变量, 存在协整关系。协整方程表明, 产业结构对单位GDP能耗的负影响东北最大, 中部最小, 西部为正影响; 技术进步对单位GDP能耗的负影响东部最大, 西部其次, 中部最低; 对外开放程度对单位GDP能耗的负影响西部最大, 东北最小, 中部为正影响。误差修正模型表明, 东北调整到均衡状态的速度最快。根据实证结果, 建议由此在制定“十二五”节能降耗目标时应该分区域实行不同的降耗目标和实现路径。

关键词: 面板协整 单位GDP能耗 产业结构 技术进步

The Relationship between Industrial Structure, Technical Progress, and Opening Degree with Unit GDP Energy Consumption Based on Provincial Panel Data and Co integration Approach

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Abstract:

The panel based unit test and co integration test demonstrate that throughout the nation, the East, the Central, the Northeast and the West there exists a co integration relationship between the four above mentioned variables which are all proved as one order co integration ones. Furthermore, the co integration equation discloses the facts as follows: first, the Northeast achieves the highest contribution rate of industrial structure change related to reduction of unit GDP energy consumption while the East and the Central are at the lowest level, and the effect of the West is positive; second, as for the technical progress effect on unit GDP energy consumption decline, the East stands in the breach, with the West and the Northeast in the wake of it; third, the West ranks number one followed by the East and the Northeast in terms of the contribution rate of opening up degree as to unit GDP energy consumption reduction, and the effect of the Central is positive. In addition, the error correction model indicates that the Northeast has the strongest capability of adjusting itself into balanced state. In strict accordance with the empirical consequence, it is advisable to implement tailored policies and measures for regions with different characteristics when we decide on energy conservation objective in the twelfth "Five year Plans".

Keywords: panel co-integration unit GDP energy consumption industrial structure technical progress

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