

基于前沿分析方法的中国工业部门 广义碳生产率指数测算及变化分解

赵国浩¹, 高文静²

1. 山西财经大学管理科学与工程学院, 山西 太原 030006;

2. 山西财经大学经济学院, 山西 太原 030006

Comprehensive Evaluation of Generalized Carbon-productivity Index in China's Industrial Sector Based on Frontier Analysis Methods

ZHAO Guo-hao¹, GAO Wen-jing²

1. School of Management Science and Engineering, Shanxi University of Finance and Economics, Taiyuan 030006, China;

2. School of Economics, Shanxi University of Finance and Economics, Taiyuan 030006, China

- 摘要
- 参考文献
- 相关文章

Download: PDF (671KB) HTML (1KB) Export: BibTeX or EndNote (RIS) Supporting Info

摘要 碳生产率能将低碳经济的两大目标融为一体,工业部门作为能源密集型部门,是二氧化碳排放的主体,其碳生产率的变化深刻影响着中国整体碳生产率的格局。目前,大部分学者都用GDP与二氧化碳排放量的比值作为衡量碳生产率的指标,然而二氧化碳排放空间作为一种投入要素,其产出除了经济绩效外还包括环境、就业等综合绩效。本文基于广义碳生产率的概念,通过对前沿分析方法的比较,选择基于方向性距离函数的DEA方法,测算了中国工业部门各细分行业从2004-2009年的广义碳生产率指数,并对其变化进行了分解。结果表明:(1)中国工业部门广义碳生产率指数整体小于1,说明广义碳生产率水平整体上存在下降的趋势;(2)引致工业部门广义碳生产率指数整体小于1的主要原因是技术效率和规模效率低下。

关键词: 中国工业部门 广义碳生产率 技术效率 规模效率

Abstract: At present, the ratio of GDP and carbon emissions is usually used as an indicator to measure carbon-productivity. However, as a input factor, the output of carbon emissions space not only includes economic performance but also includes the environment, employment and other integrated performance. Under the concept of generalized carbon productivity, using the data from the China Statistical Yearbook, the generalized carbon-productivity index from 2004-2009 of Chinese industrial sector is evaluated, based on directional distance function and data envelopment analysis method. The results indicate that, firstly the overall carbon-productivity index of Chinese industrial sector is less than 1, which means that there is a downward trend of generalized carbon productivity. Secondly, downward trend is mainly due to the low technical efficiency and scale inefficiency.

收稿日期: 2011-06-08;

基金资助:国家自然科学基金项目(70873079,71173141);山西省自然科学基金研究项目(2009011021-1);山西省研究生创新项目(20113092)

引用本文:

赵国浩, 高文静. 基于前沿分析方法的中国工业部门 广义碳生产率指数测算及变化分解[J]. 中国管理科学, 2013,V(1): 31-36

Service

- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器

Email Alert

RSS

作者相关文章

- 赵国浩
- 高文静


[1] Beinhocker E, Oppenheim J, Irons B, et al. The carbon productivity challenge: curbing climate change and sustaining economic growth [R]. McKinsey Global Institute, 2008. 

[2] Lynn P, Ernst W, Nathan M, et al. China's industrial sector in an international context [R]. Lawrence Berkeley National Laboratory, 2000.

[3] Kaya Y, Yokobori K K. Environment, energy and economy: strategies for sustainability [M]. Tokyo: United Nations University Press, 1997.

[4] Business Korea. Current issues and implications of Korea's carbon productivity [EB/OL].

[5] 何建坤, 苏明山. 应对全球气候变化下的碳生产率分析 [J]. 中国软科学, 2009, (10): 42-47, 147.

- [6] 谌伟, 诸大建, 白竹岚. 上海市工业碳排放总量和碳生产率关系[J]. 中国人口·资源与环境, 2010, 20, (9): 24-29.
- [7] 魏梅, 曹明福, 江金荣. 生产中碳排放效率长期决定及其收敛性分析[J]. 数量经济技术经济研究, 2010, (9): 43-52.
- [8] 潘家华, 张丽峰. 我国碳生产率区域差异性研究[J]. 中国工业经济, 2011, (5): 47-57.
- [9] 刘国平, 曹莉萍. 基于福利绩效的碳生产率研究[J]. 软科学, 2011, 25, (1): 71-74.
- [10] Aigner D, Lovell C A K, Schmidt P. Formulation and estimation of stochastic frontier production function models [J]. Journal of Econometrics, 1977(6): 21-37.
- [11] Meeusen W, van den Broeck J. Efficiency estimation from Cobb-Douglas production functions with composed error[J]. International Economic Review, 1977,(18): 435-444.
- [12] Färe R, Grosskopf S, Lovell C A. Production frontiers [M]. Cambridge: Cambridge University Press, 1994.
- [13] Chambers R G, Chung Y, Fare R. Benefit and distance functions [J]. Journal of Economic Theory, 1996, 70(2): 407-419. 
- [14] Färe R, Grosskopf S, Weber W L. The effect of risk-based capital requirements on profit efficiency in banking[J]. Applied Economics, 2004, (36): 1731-1743.
- [15] Kuosmanen T. Weak Disposability in Nonparametric Production Analysis: Reply to Färe and Grosskopf[J]. Applied Economics, 2005, (2): 539-545.

何枫 陈荣. R&D与广告对中日家电企业技术效率影响的比较研究

- [1] [J]. 中国管理科学, 2008, 16(4): 140-147