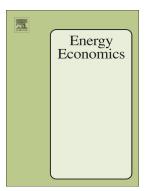
Accepted Manuscript



Contributions to sector-level carbon intensity change: An integrated decomposition analysis

Qunwei Wang, Ye Hang, Bin Su, Peng Zhou

PII:	S0140-9883(17)30434-6
DOI:	https://doi.org/10.1016/j.eneco.2017.12.014
Reference:	ENEECO 3853
To appear in:	
Received date:	18 June 2017

Revised date:19 November 2017Accepted date:14 December 2017

Please cite this article as: Qunwei Wang, Ye Hang, Bin Su, Peng Zhou, Contributions to sector-level carbon intensity change: An integrated decomposition analysis. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Eneco(2017), https://doi.org/10.1016/j.eneco.2017.12.014

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Contributions to sector-level carbon intensity change: an integrated

decomposition analysis

Qunwei Wang^a, Ye Hang^{a,b}, Bin Su^{b,*}, Peng Zhou^a

^a College of Economics and Management, Nanjing University of Aeronautics and Astronautics, 29 Jiangjun Avenue, Nanjing 211106, China

^b Energy Studies Institute, National University of Singapore, 29 Heng Mui Keng Terrace, 119620, Singapore

Abstract: Exploring the factors driving sector-level carbon intensity change is important to inform targeted emission reduction policies. This paper proposes an integrated decomposition approach, combining production-theoretical decomposition analysis (PDA), index decomposition analysis (IDA) and attribution analysis (AA). The proposed approach can decompose sector-level carbon intensity change into nine driving factors, including two new pre-defined factors (i.e. the potential regional output structure effect and the output gap effect). This provides more detailed information about the influence of production technology related components, i.e. technical efficiency and technological change, and the contribution of each region to the individual driving factor. Industrial sectors across 30 provinces in China are used to demonstrate the integrated decomposition approach. The decomposition and attribution results show that the desirable output technological change effect is the dominant factor in decreasing industrial carbon intensity, of which Hebei, Shandong, Jiangsu, Liaoning and Henan are the main contributors. The potential energy intensity effect reduces industrial carbon intensity remarkably as well, mainly due to Henan, Liaoning, Shandong, Hunan and Inner Mongolia. Provinces are classifies into four performance groups based on the attribution results. Targeted industrial carbon intensity reduction policies should be implemented in different groups of provinces.

Keywords: sector-level carbon intensity; production-theoretical decomposition analysis; index decomposition method; attribution analysis; China

^{*}Corresponding author. Tel: (+65) 6601-2075 ; Fax: (+65) 6775-1831 *E-mail address: subin@nus.edu.sg ; subin.nus@gmail.com (B. Su)*

دريافت فورى 🛶 متن كامل مقاله

- امکان دانلود نسخه تمام متن مقالات انگلیسی
 امکان دانلود نسخه ترجمه شده مقالات
 پذیرش سفارش ترجمه تخصصی
 امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
 امکان دانلود رایگان ۲ صفحه اول هر مقاله
 امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
 دانلود فوری مقاله پس از پرداخت آنلاین
 پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات
- ISIArticles مرجع مقالات تخصصی ایران