

Environmental Sciences and Renewable Energy 2021

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Energy prices, fiscal decentralization and environmental sustainability

Since the role of fiscal decentralization cannot be overlooked in tracking Sustainable development goals targets of a clean environment and climate mitigation, it is inevitable to understand the comprehensive picture of its link with environmental quality. Unlike past studies, this study investigates the combined influence of energy prices and non-linear fiscal decentralization on carbon emissions in the presence of institutional quality and gross domestic product in the model. It employed advanced econometric panel techniques on data from 1990 to 2018 for the top seven fiscally decentralized Organisation for Economic Co-operation and Development (OECD) nations, including Spain, Belgium, Austria, Switzerland, Germany, Australia, and Canada. The main outcomes are as follows: first, a cointegrating equilibrium link is existent among the study variables. Second, the linear term of fiscal decentralization promotes carbon emissions, while the non-linear term mitigates it. It verified the inverted U-shaped curve between fiscal decentralization and carbon emissions. Third, increasing energy prices for non-renewable energy decrease carbon emission due to a substitution effect. Among other explanatory variables, improvement in the quality of institutions decreases carbon emissions, while the gross domestic product increases it. These findings suggest strengthening fiscal decentralization, lowering non-renewable energy prices, and improving institutional quality to check the deteriorating environmental quality in the study sample and other worldwide regions.



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Biography

Graduated from HKU (global subject ranking 14 in QS), I now serve as an Associate Professor in Dept of Economics and Finance in Hong Kong Shue Yan University. I am the founder and director of Sustainable Real Estate Research Center. My major field of research interests lies in construction safety, sustainable building, housing economics, real estate economics and construction informatics.

Over the years, I won many local and international awards. I act as a PI and co-I for many academic research grants, including 6 highly competitive grants from Research Grant Council, Public Policy Research Grant and other grants obtained from quasi public institutions and government departments (over 10 million). We have also invited 15 top professors for our IIDS seminar within one year's time, including Prof John Macintyre, Pro Vice Chancellor of University of Sunderland, Chair Professor Michael Skibniewski (University of Maryland, former Associate Provost in University of Princeton), Distinguished Professor Demetri Terzopoulos (UCLA), Professor Thad Starner (Georgia Tech, team leader of Google Glass), Professor Simon Beecham (former Pro Vice-Chancellor in University of South Australia), Professor Michael Batty (UCL) and many other leading professors in AI and ubiquitous city related areas, see details in our project website.

I was the outstanding reviewer of Journal of Cleaner Production, a recipient of a Fellowship from the US to study the impact of law and culture on housing fittings in China which offered me a chance to present a paper to Nobel Prize Economist Prof Douglass North and received the top three presenter award among all the fellowship recipients. I was also a recipient of a grant issued by Ministry of Education jointly with a scholar from the People's Republic of China, a visiting fellowship awardee from Australia and a finalist award for competition law research in the US, the best paper award for the paper titled "Mechanical and Physical Properties of Basalt Fiber High Strength High Titanium Heavy Slag Concrete", Rajamangala University of Technology Rattanakosin International Conference "Innovative Technology and Creative Work toward Sustainable Development in 2021. I have also obtained software sponsored from AWS for cloud education and H2O.ai for Natural Language Processing and Explainable AI collaboration and

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initiate collaboration with Huawei in 2021. I hold a few visiting positions in overseas university. I am currently an adjunct Professor of Economics at the Rattanakosin International College of Creative Entrepreneurship, Rajamangala University of Technology Rattanakosin in Thailand and an Adjunct Associate Professor in China-Australia Centre for Sustainable Urban Development, Tianjin University in China. I also served as an Endeavour Research Fellow at the University of South Australia (with Professor Simon Beecham, Deputy Vice Chancellor), a visiting scholar at RMIT (with Distinguished Professor Helen Lingard) in Australia, University of Regina (with Chair Professor Christine Chan, AI research) and Feng Chia University in Taiwan. I also gave guest lecture for Universiti Tunku Abdul Rahman (Malaysia) and Hochschule 21 (Germany). Besides, I previously served as a PhD thesis external examiner for University of Macau, University Putra Malaysia, and an external examiner for Open University of Hong Kong, Lingnan University. I am also invited by the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC) and the Social Sciences and Humanities Research Council (SSHRC) to serve as a research grant reviewer. I am a chartered surveyor, an elected fellow of Institute of Data Science and Artificial Intelligence, an associate member in CIArb and HKI Arb, an associate member of HK Independent Non-Executive Director. I have a quite diverse academic background as I previously pursued study in FinTech (UPenn), Regulatory Compliance (UPenn), fNIRS (Boston U), computer studies (mainly AI), psychology (drawing psychology) and higher education teaching.

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