

[Home](#) > [Environmental Science and Pollution Research](#) > [Article](#)

Does financial development promote the win-win balance between environmental protection and economic growth?

Research Article | Published: 29 October 2018

Volume 25, pages 36438–36448, (2018) [Cite this article](#)

 [Save article](#)


[View saved research](#) >



[Environmental Science and Pollution Research](#)

[Aims and scope](#) →

[Submit manuscript](#) →



[Shujing Yue](#)  [orcid.org/0000-0003-3488-170X](mailto:shujing.yue@springer.com)^{1,2}, [Rou Lu](#)¹, [Hongtao Chen](#)¹ & [Jianhong Yuan](#)^{2,3}

 **1064** Accesses  **25** Citations [Explore all metrics](#) →

Abstract

Existing studies have analyzed the effects of financial development on economic growth and environmental pollution respectively, but few studies have analyzed the effects of financial development on economic growth and environmental protection from a unified framework. This paper reports on a study which took the 28 provinces of China, for the years 2002–2014, as its research object. It used green efficiency to measure the win-win balance between economic growth and environmental protection. It divided green efficiency into economic efficiency and environmental efficiency and then studied the effects of financial development on

economic growth and environmental protection within a unified framework. The primary findings indicate that (1) overall, financial development is conducive to obtaining the win-win balance in China's economy, with its positive effects on economic growth being more significant than on environmental protection; (2) capital market development promotes both economic growth and environmental protection, while also playing a significant role in the win-win balance of China's economy.

 This is a preview of subscription content, [log in via an institution](#)  to check access.

Access this article

[Log in via an institution](#) →

Subscribe and save

Springer+

from €37.37 /Month

- Starting from 10 chapters or articles per month
- Access and download chapters and articles from more than 300k books and 2,500 journals
- Cancel anytime

[View plans](#) →

Buy Now

[Buy article PDF 39,95 €](#)

Price includes VAT (Poland)

Instant access to the full article PDF.

[Institutional subscriptions](#) →

Similar content being viewed by others



Can green finance improve eco-efficiency? New Insights from China

Article | 05 June 2024



Environmental regulation, foreign direct investment and China's economic development under the new...

Article | 12 March 2022

Is CO₂ emission a side effect of financial development? An empirical analysis for China

Article | 04 August 2016

Explore related subjects

Discover the latest articles, books and news in related subjects, suggested using machine learning.

[Development Economics](#)

[Economic Growth](#)

[Environmental Economics](#)

[Resource and Environmental Economics](#)

[Sustainable Growth](#)

[Economic Development, Innovation and Growth](#)

[Sustainable Economic Development and Green Innovation](#)

References

Abbasi F, Riza K (2016) CO₂ emissions and financial development in an emerging economy: an augmented VAR approach. *Energy Policy* 90:102–114

Al-mulali U, Sab CNB (2012) The impact of energy consumption and CO₂ emission on the economic and financial development in 19 selected countries. *Renew Sust Energy Rev* 16:4365–4369

Asteriou D, Spanos K (2018) The relationship between financial development and economic growth during the recent crisis: evidence from the EU. *Financ Res Lett.*

Batuo M, Mlambo K, Asongu S (2018) Linkages between financial development, financial instability, financial liberalisation and economic growth in Africa. *Res Int Bus Financ* 45:168–179

Breitenlechner M, Gächter M, Sindermann F (2015) The finance–growth nexus in crisis. *Econ Lett* 132:31–33

Chung YH, Fare R, Grosskopf S (1997) Productivity and undesirable outputs: a directional distance function approach. *J Environ Manag* 51:229–240

Dasgupta S, Laplante B, Mamingi N (2001) Pollution and capital markets in developing countries. *J Environ Econ Manag* 42:310–335

Frankel J, Rose A (2002) An estimate of the effect of common currencies on trade and income. *Q J Econ* 117(2):437–466

Fukuyama H, Weber WL (2009) A directional slacks-based measure of technical inefficiency. *Socio Econ Plan Sci* 4:274–287

Goldsmith RW (1969) *Financial structure and development*. Yale University Press

Guan D, Meng J, Reiner DM, Zhang N, Shan Y, Mi Z, Shao S, Liu Z, Zhang Q, Davis SJ (2018) Structural decline in China's CO₂ emissions through transitions in industry and energy systems. *Nat Geosci* 11:551–555

Guo L ling, Qu Y, Tseng ML (2017) The interaction effects of environmental regulation and technological innovation on regional green growth performance. *J Clean Prod* 162:894–902

Hang Y, Sun J, Wang Q, Zhao Z, Wang Y (2015) Measuring energy inefficiency with undesirable outputs and technology heterogeneity in Chinese cities. *Econ Model* 49:46–52

Hao Y, Zhang ZY, Liao H, Wei YM, Wang S (2016) Is CO₂ emission a side effect of financial development? An empirical analysis for China. *Environ Sci Pollut Res Int* 23:21041–21057

Hsueh S, Hu Y, Tu C (2013) Economic growth and financial development in Asian countries: a bootstrap panel granger causality analysis. *Econ Model* 32:294–301

Islam F, Shahbaz M, Ahmed AU, Alam MM (2013) Financial development and energy consumption nexus in Malaysia: a multivariate time series analysis. *Econ Model* 30:435–441

Jalil A, Feridun M (2011) The impact of growth, energy and financial development on the environment in China: a cointegration analysis. *Energy Econ* 33:284–291

Khan B, Baig MA, Khan MZ, Zaman K, Irfan D, Khatab H (2014) Questioning the three key growth determinants: energy consumption, foreign direct investment and financial development in South Asia. *Renew Energy* 68:203–215

Kim J, Park K (2016) Financial development and deployment of renewable energy technologies. *Energy Econ* 59:238–250

King R, Levine R (1993) Finance, entrepreneurship and growth: theory and evidence. *J Monet Econ* 32:513–542

Muhanmad SD, Muhammad U (2010) The bound testing approach for cointegration and causality between financial development and economic growth

Omri A, Daly S, Rault C, Chaibi A (2015) Financial development, environmental quality, trade and economic growth: what causes what in MENA countries. *Energy Econ* 48:242-252

Pradhan RP, Arvin MB, Hall JH, Bahmani S (2014) Causal nexus between economic growth, banking sector development, stock market development, and other macroeconomic variables: the case of ASEAN countries. *Rev Financ Econ* 23:155-173

Pradhan RP, Mukhopadhyay B, Gunashekar A, Samadhan B, Pandey S (2013) Financial development, social development, and economic growth: the causal nexus in Asia. *Decision* 40:69-83

Riti JS, Shu Y, Song D, Kamah M (2017) The contribution of energy use and financial development by source in climate change mitigation process a global empirical perspective. *J Clean Prod* 148:882-894

Sadorsky P (2010) The impact of financial development on energy consumption in emerging economies. *Energy Policy* 38:2528-2535

Sadorsky P (2011) Financial development and energy consumption in central and eastern European frontier economies. *Energy Policy* 39:999-1006

Shahbaz M, Lean H (2012) Does financial development increase energy consumption? The role of industrialization and urbanization in Tunisia. *Energy Policy* 40:473-479

Shahbaz M, Shahzad SJH, Ahmad N, Alam S (2016) Financial development and environmental quality: the way forward. *Energy Policy* 98:353-364

Shahbaz M, Tiwari AK, Nasir M (2013) The effects of financial development, economic growth, coal consumption and trade openness on CO₂ emissions in South Africa. *Energy Policy* 61:1452–1459

Song M, Wang S (2017) Participation in global value chain and green technology progress: evidence from big data of Chinese enterprises. *Environ Sci Pollut Res* 24:1648–1661

Song M, Wang J (2018) Environmental efficiency evaluation of thermal power generation in China based on a slack-based endogenous directional distance function model. *Energy* 161:325–336

Tamazian A, Chousa JP, Vadlamannati KC (2009) Does higher economic and financial development lead to environmental degradation: Evidence from BRIC countries? *Energy Policy* 37:246–253

Uddin GS, Shahbaz M, Arouri M, Teulon F (2014) Financial development and poverty reduction nexus: a cointegration and causality analysis in Bangladesh. *Econ Model* 36:405–412

Wang Q, Su B, Zhou P, Chiu C (2016) Measuring total-factor CO₂ emission performance and technology gaps using a non-radial directional distance function: a modified approach. *Energy Econ* 56:475–482

Wang Q, Zhao Z, Shen N, Liu T (2015) Have Chinese cities achieved the win-win between environmental protection and economic development? From the perspective of environmental efficiency. *Ecol Indic* 51:151–158

Yue S, Yang Y, Hu Y (2016) Does foreign direct investment affect green growth? Evidence from China's experience. *Sustainability* 8:158

Zhang N, Kong F, Yu Y (2015) Measuring ecological total-factor energy efficiency incorporating regional heterogeneities in China. *Ecol Indic* 51:165–172

Zhang N, Liu Z, Zheng X, Xue J (2017a) Carbon footprint of China's belt and road. *Science* 357:1107

Zhang N, Yu K, Chen Z (2017b) How does urbanization affect carbon dioxide emissions? A cross-country panel data analysis. *Energy Policy* 107:678–687

Zhang YJ (2011) The impact of financial development on carbon emissions: an empirical analysis in China. *Energy Policy* 39:2197–2203

Zhou P, Ang BW, Wang H (2012) Energy and CO₂ emission performance in electricity generation: a non-radial directional distance function approach. *Eur J Oper Res* 221(3):625–635

Acknowledgements

We are grateful to the Editor, as well as the three anonymous referees for valuable suggestions and comments that helped us improve our paper significantly.

Funding

Work of this paper was supported by the National Natural Science Foundation of China [grant number 71503039], the Social Science Fund of Jiangsu Province [grant number 17GLB008], the Key Project of Philosophy and Social Science Research in Colleges and Universities of Jiangsu Province [grant number 2017ZDIXM013], and Fundamental Research Funds for the Central Universities [grant number 2242017K40175, 2242018S30008].

Author information

Authors and Affiliations

School of Economics and Management, Southeast University, Nanjing, 211189, China

Shujing Yue, Rou Lu & Hongtao Chen

Institute of Socialist Development with Chinese Characteristics, Southeast University, Nanjing, 211189, China

Shujing Yue & Jianhong Yuan

School of Marxism, Southeast University, Nanjing, 211189, China

Jianhong Yuan

Corresponding author

Correspondence to [Shujing Yue](#).

Additional information

Responsible editor: Philippe Garrigues

Electronic supplementary material

[ESM 1 \(download DOCX ↓\)](#)

(DOCX 109 kb)

Rights and permissions

[Reprints and permissions](#)

About this article

Cite this article

Yue, S., Lu, R., Chen, H. *et al.* Does financial development promote the win-win balance between environmental protection and economic growth?. *Environ Sci Pollut Res* **25**, 36438–36448 (2018). <https://doi.org/10.1007/s11356-018-3549-y>

Received

25 January 2018

Version of record

29 October 2018

DOI

<https://doi.org/10.1007/s11356-018-3549-y>

Accepted

22 October 2018

Issue date

December 2018

Published

29 October 2018

Keywords

[Win-win balance](#)

[Economic growth](#)

[Environmental protection](#)

[Financial development](#)

[Directional slacks-based measure](#)

Profiles

1. Shujing Yue

 [View author profile](#)

Search

Search by keyword or author



Navigation

[Find a journal](#)

[Publish with us](#)

