Journal of Cleaner Production 283 (2021) 125415

Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro

Order financing for promoting green transition

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ARTICLE INFO

Article history:
Received 18 July 2020
Received in revised form
1 December 2020
Accepted 2 December 2020
Available online 4 December 2020

Handling editor. Bin Chen

Keywords:
Green finance
Order financing
Energy efficiency
Subsidy

ABSTRACT

Green finance plays a key role to drive the green transition, which is popular in both developed and developing countries. Different from direct financial subsidies, order financing, an emerging type of green finance, mainly contributes to the improvement of supervision mechanisms and the effectiveness of incentive mechanisms. This study focuses on the effects of order financing by considering carbon taxes. Based on game theory model, three major findings from the theoretical analysis are obtained. First, whether the firm launches a green transition or not mainly depends on the efficiency of clean technology, carbon taxes, marginal costs of energy, and the elasticity of effective energy input. Second, order financing encourages more firms to engage in green transition than mortgage financing does. With order financing, more firms can invest in clean technologies. Third, price fluctuation risk restricts the supply of order financing and the application of clean technologies. Third, this paper shows that mature clean technologies are easily adopted by firms. And to avoid price risk, banks would reduce order financing. Therefore, the policy implication is to encourage green finance for green transition with mature technology and a stable price.

1. Introduction

Fossil energy consumption yields a large amount of emissions, which has caused serious climate change and many natural hazards in recent years. Global climate change (GLC) has attracted worldwide attention, and both energy conservation and emission reduction are two crucial ways to manage GLC. In order to overcome the negative externality of fossil energy consumption, many policies are introduced in practice, including carbon trade, emission taxes, and emission restriction. Such policies result in energy conservation and emission reduction to deal with climate change.

Moreover, to implement energy conservation and emission reduction, firms require large-scale financial support. In recent years, many countries adopt policies to stimulate firms' finances to implement green transition. Green finance also plays a key role to drive the green transition, which is popular in both developed and developing countries (Li et al., 2014; Nie, 2012; Nie et al., 2016; Nie and Chen, 2016; Silajdžić et al., 2015). Generally, green financing products could be divided into commercial bank products, investment bank products, information management products, and insurance products. The upsurge in green financing stimulates the development of the green economy significantly and evidence can be found in China. Compared with 2016, sales of new energy vehicles in China increased by 53.3%, where sales of pure electric vehicles increased by 82.1% in 2017. Some well-known domestic vehicle brands, such as the BYD E6, SAIC Roewe E50, and BYD Daimler electric vehicles, are all clean energy vehicles, and their production is supported by green finance (Guo, 2018).

As the green economy expands, more banks are adopting new patterns of green finance to fulfill the market demand, for example, the order financing of green finance was proposed by Industrial Bank Co. Ltd. Order financing is defined as capital financing based on quality orders received where in lenders rely on the future revenue of the orders as the source of repayment. Likewise, green order financing is order financing earmarked for enterprises that are engaged in the manufacturing of energy conservation and environmental protection equipment (China Newsweek, 2016). As a pioneer of green finance, Industrial Bank Co. Ltd is devoted to the green transition with order financing. As of June 2016, the total green financial investment conducted by Industrial Bank Co. Ltd was over RMB 900 billion, supporting over 6400 energy conservation projects and firms. The investment resulted in 73.83 million tons of emission reduction of carbon dioxide, which is equal to

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https://doi.org/10.1016/j.jclepro.2020.125415
0959-6526/

检索证明

根据委托方提供的论文目录（2021 年），经《科学引文索引》SCIE 数据库检索，广东财经大学李鑫武(Li, Xin-wu)发表的论文被《科学引文索引》SCIE 收录了 1 篇（第二作者）。题录如下：

标题 Order financing for promoting green transition

作者：Wang, C (Wang, Chan)[1] ; Li, XW (Li, Xin-wu)[1] ; Wen, HX (Wen, Hong-xing)[1] ; Nie, PY (Nie, Pu-yan)[1]

JOURNAL OF CLEANER PRODUCTION 卷:283 文献号:125415 出版年:FEB 10 2021 DOI: 10.1016/j.jclepro.2020.125415

文献类型：Article

作者信息

通讯作者地址：Guangdong Univ Finance & Econ GDUFE, Natl Econ Res Ctr, Sch Finance, Inst Guangdong Econ & Social Dev, Guangzhou 510320, Peoples R China.

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文献信息

语言: English 入藏号: WOS:000609031900015

根据 JCR Science Edition 2019 年数据：

2019 年影响因子：7.246 五年影响因子：7.491

2019 年该刊在 JCR 分区：

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GREEN & SUSTAINABLE SCIENCE & TECHNOLOGY	6/41	Q1

特此证明

广东财经大学图书馆学科服务部

2021 年 5 月 20 日

检索证明

根据委托方提供的论文目录（2021 年），经《社会科学引文索引》SSCI 数据库检索，广东财经大学李鑫武(Li, Xin-wu)发表的论文被《社会科学引文索引》SSCI 收录了 1 篇（第二作者）。题录如下：

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JOURNAL OF CLEANER PRODUCTION 卷:283 文献号:125415 出版年:FEB 10 2021 DOI: 10.1016/j.jclepro.2020.125415

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文献信息

语言: English 入藏号: WOS:000609031900015

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广东财经大学图书馆学科服务部

2021 年 5 月 20 日

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JOURNAL OF CLEANER PRODUCTION

卷: 283

文献号: 125415

DOI: 10.1016/j.jclepro.2020.125415

出版年: FEB 10 2021

文献类型: Article

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关键词

作者关键词: Green finance; Order financing; Energy efficiency; Subsidy

KeyWords Plus: LOW-CARBON; ENERGY; COMPETITION; EFFICIENCY; EMISSIONS; POLICY

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电子邮件地址: hxwen2011@126.com; pynie2013@163.com

基金资助致谢

基金资助机构 显示详情	授权号
National Natural Science Foundation of China (NSFC)	71771057 72003044 72003045
National Social Science Foundation of China	20FGLB072
Guangdong Social Science Project	GD20SQ15
National Natural Science Foundation of Guangdong Province	2018A030310669 2016A030313805
Guangzhou Social Science Project	2020GZQN39
Foundation for High-level Talents in Higher Education of Guangdong, GDUPS	
Innovative Foundation (Humanities and Social Sciences) for Higher Education of Guangdong Province	2015WCXTD009

Projects for Higher Education of Guangdong Province	2018WZDXM003

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期刊信息

Impact Factor (影响因子): Journal Citation Reports

类别 / 分类

研究方向: Science & Technology - Other Topics; Engineering; Environmental Sciences & Ecology

Web of Science 类别: Green & Sustainable Science & Technology; Engineering, Environmental; Environmental Sciences

文献信息

语言: English

入藏号: WOS:000609031900015

ISSN: 0959-6526

eISSN: 1879-1786

其他信息

IDS 号: PU0XA

Web of Science 核心合集中的 "引用的参考文献": 37

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