The Informational Role of Corporate Carbon Performance in the Stock Market

By

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A thesis submitted to the Business School, The University of Adelaide, in fulfilment of the requirements for the degree of Doctor of Philosophy

2017

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ABSTRACT

This thesis examines the informational role of corporate carbon performance in the stock market using a sample of publicly listed firms regulated under the European Union Emission Trading Scheme (EU_ETS). Based on carbon information compiled from the facility-level records within the transaction log under the operation of the EU_ETS from 2006 to 2015, this thesis calibrates the informational role of corporate carbon performance at the firm-level by exploring: (1) whether corporate carbon performance information affects firms' information environments; and (2) whether corporate carbon performance affects firms' cost of equity.

Employing a synchronicity measure capturing the relative amount of firm specific information flows compared with market- and industry-wide information, the first empirical study in this thesis provides evidence that corporate carbon performance information plays a key informational role in the stock market by impounding more firm-specific information into share prices. In particular, this study finds that: (1) more firm-specific information relative to market- and industry-wide information is incorporated into share prices of firms with less carbon intensity; and (2) leadership in managing carbon performance relative to industry peers increases firm-specific information captured in share prices.

Further, using an ex-ante implied cost of equity measure, the second empirical study in this thesis examines the impact of corporate carbon performance on investors' perception of firm riskiness. This study provides evidence supporting the market assessment of carbon risks manifested in a higher required rate of return on equity. Specifically, this study finds that the magnitude of carbon intensity neither increases nor decreases the cost of equity financing for the full sample. However, a higher cost of equity is observed for high-emitting firms, suggesting that investors condition their assessment of carbon risks on a firm's relative

emission profile. This study also finds that firms with a higher carbon risk profile relative to industry peers have a higher cost of equity, suggesting that firms' capacity to pass-on carbon costs affects the market pricing of carbon risks.

Taken together, the empirical findings of this thesis show that corporate carbon performance serves an important information role in the stock market by producing more firm-specific information that reduces the level of information asymmetry and thereby lowers the cost of equity. This thesis therefore provides confirmatory evidence of the usefulness of carbon disclosures mandated through an enacted ETS.

This thesis contributes to the literature on the market value effects of carbon information in several important ways. First, it provides robust empirical evidence that corporate carbon performance information affects the level of firm-specific information impounded in share prices. Second, this thesis provides unique insights into how corporate carbon performance enhances firm value through the cost of equity.

This thesis also has several important implications for financial market regulators, policy makers, corporate executives and institutional investors. For instance, evidence that firm disclosures of carbon performance provide benefits by enabling industry benchmarking can inform the development of carbon disclosure requirements to improve the transparency of carbon disclosure and the efficiency of capital allocation. Corporate decision makers may take into account the potential benefit of a lower cost of equity in addition to accounting earnings in assessing the viability of investments in green technologies. Further, this thesis has implications for portfolio managers in constructing indices that track firms exhibiting lower carbon profile than industry peers to address the preferences of eco/green investors.

DECLARATION

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree. I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying, subject to the provisions of the Copyright Act 1968. I also give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library Search and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

Signature: Date: 15/11/2017

ACKNOWLEDGEMENT

I would like to thank my principal supervisor, Professor Grant Richardson for the invaluable help, inspiration and guidance at every important stage of my PhD study; my co-supervisor Associate Professor Janice Loftus for her invaluable guidance, constant encouragement and for her willingness to assist at short notice; without their expertise and dedication, it would have been impossible for me to complete this thesis.

I wish to thank participants at The 2014 Accounting and Finance Association of Australia and New Zealand (AFAANZ) Doctoral Symposium (Auckland), The 2015 UTS Australian Summer Accounting Conference, and The 39th European Accounting Association Doctoral Forum and 2016 Annual Congress (University of Maastricht).

I gratefully acknowledge the financial support of the Australian Postgraduate Award, the "Bob Officer Scholarship" awarded by AFAANZ Doctoral Education Network, and the research grant provided by the EU Centre for Global Affairs at the University of Adelaide during the 2015 Annual Grant Program. I sincerely appreciate the research funding provided by The University of Adelaide Business School during my candidature.

I would like to express my gratitude to the staff of Adelaide Business School for their support. In particular, my sincere thanks to Dr Limin Xu for his constructive comments; Dr Tariq Haque and Dr Shan Li for their helpful assistance with technical problems. I am extremely grateful to the generous support and encouragement from my friends, and Dr Eric Scott for his editorial advice.

Finally, my deepest appreciation to my parents for their unconditional and continuous support.