

半導體業氣候風險評估與因應－應用 TCFD 與避險會計方法

Climate Risk Assessment and Response in the Semiconductor Industry: Application of TCFD and Hedge Accounting Methods

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林聖忠*

Sheng-Chung Lin

李堅明**

Chien-Ming Lee

洪悅容***

Yue-Rong Hong

張鈞凱****

Chin-Kai Chang

* 國立臺北大學自然資源與環境管理研究所博士生

PhD student, Institute of Natural Resources Management, National Taipei University.

** 國立臺北大學自然資源與環境管理研究所教授 (聯絡作者)

Professor, Institute of Natural Resources Management, National Taipei University.
(corresponding author)

*** 國立臺灣科技大學資訊管理研究所博士生

PhD student, Department of Information Management, National Taiwan University of Science
and Technology.

**** 國立臺北大學自然資源與環境管理研究所碩士

Master, Institute of Natural Resources Management, National Taipei University.

摘要

氣候風險已成為企業永續經營的重要挑戰，TCFD (2018, 2019)連續兩年對全球大型企業的調查發現，企業在落實 TCFD 上，較缺乏財務影響的量化分析，從而，無法提供投資者足夠訊息。本研究以台灣最重要的半導體業為對象，應用 TCFD 的情境分析及結合避險會計方法，建立一套量化評估方法，並以釋例方式，量化碳風險與財務衝擊。研究發現，碳成本的內部化將是半導體業最主要的轉型風險，企業如果以碳權期貨合約避險，則會有較小的財務衝擊及碳風險。本研究方法具創新性，且有助企業落實 TCFD，及因應氣候風險策略擬定，具有高度參考價值。

關鍵字：氣候風險、TCFD、半導體業、避險會計、碳權期貨

ABSTRACT

Climate risk has become a significant challenge for companies' sustainable development. The Task Force on Climate-related Financial Disclosures (TCFD) conducted two surveys on major global companies (2018, 2019) and has found that companies lack quantitative analysis of financial impact when implementing TCFD and are thus unable to provide sufficient information to investors. This study concentrating on Taiwan's semiconductor industry, applies TCFD's scenario analysis combined with hedge accounting methods to establish a set of quantitative assessment methods, and demonstrates how a company can quantify carbon risks and their impact on corporate finance. The results reveal that the internalization of carbon costs is the most important transition risk in the semiconductor industry. If companies can hedge carbon futures contracts, they can diminish financial and carbon risk. This study adopts an innovative research method that will help companies to implement TCFD and will serve as a useful resource for creating climate risk response strategies.

Keywords: Climate risk, TCFD, Semiconductor industry, Hedge accounting, Carbon futures