Chapter 4
Carbon Pricing, Capital Reallocation, and Financial Stability:
A Sustainability Accounting Perspective on Market Signals and Climate-Related Risks

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ABSTRACT

This chapter analyzes the impact of carbon pricing on capital markets and financial stability through the lens of sustainable accounting. Carbon taxes and emissions trading systems alter cash flow, risk premium, and tail risk expectations, hence influencing stock valuation and credit pricing. The chapter subsequently correlates physical and transition risks with accounting materiality, illustrating the impact of climate on impairment, provisions, useful-life estimations, fair value inputs, and disclosures. It employs carbon price trajectories, emissions scopes, intensity metrics, internal carbon pricing, and result indicators such as cost of capital to assess policy stringency and business vulnerability and responsiveness, therefore

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rendering policy signals decision-useful. It demonstrates how disclosure mandates and assurance mitigate information asymmetry, facilitating systematic repricing, capital reallocation, and macroprudential supervision of climate-related risks during the net zero transition.

INTRODUCTION

Carbon Pricing and Climate Risk as Economic–Accounting Problems

Carbon pricing serves not just as an environmental tool but also as a market indicator that alters expectations for companies' future cash flows, risk premiums, and capital distribution. When governments implement or intensify carbon taxes or emissions trading systems (ETS), they provide a clear or, at the very least, implicit shadow cost of carbon that financial markets can integrate into their valuations. In asset-pricing terms, carbon pricing modifies the anticipated profitability of carbon-intensive business models, increases uncertainty regarding transition paths, and adjusts the distribution of adverse outcomes (i.e., "tail risks") associated with policy tightening and technological substitution. Data from equity markets indicates that carbon exposure is factored into pricing: companies with higher emissions generally experience systematic return effects aligned with investors demanding compensation for assuming carbon-related risk (Bolton & Kacperczyk, 2021).

Carbon pricing serves as a signal that permeates lending markets. Lenders can incorporate emissions-related transition risk into loan spreads and contractual terms, so integrating climate risk into the cost of financing. Kleimeier and Viehs (2021) demonstrate that enterprises with higher emissions incur elevated loan spreads, aligning with the concept of an environmental risk premium. This is economically relevant as it illustrates that carbon price functions through a more extensive financial mechanism than mere stock repricing; it alters financing conditions, rather than solely influencing investor preferences.

The informational value of carbon pricing is fundamentally contingent upon legitimacy, stability, and supplementary disclosure frameworks. Volatile carbon pricing that are poorly implemented or subject to arbitrary reversals produce unreliable signals, diminishing their efficacy for capital planning and risk evaluation. In contrast, more transparent and predictable price signals enhance real-economy reactions, including green innovation and transition investment. Firm-level data indicates that carbon pricing signals can enhance green innovation, with the effect intensified by governance and ESG-related informational contexts (Feng et al., 2024). At the market level, carbon and stock markets may become intertwined through