Chapter 8
The Importance of Banking Efficiency in Green Finance and Climate Risk Management at the Level of Islamic Banks

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ABSTRACT

This paper explores the role of banking efficiency in promoting green finance and climate risk management in Islamic banks. It comes in a context of increasing pressure on financial institutions to adopt sustainable practices, where Islamic banks operate at the intersection of religious compliance and environmental imperatives. The study uses a stochastic frontier analysis approach applied to a panel of Islamic banks operating in the member countries of the Organization of Islamic Cooperation. It measures banking efficiency and its influence on green commitments and climate risk management strategies. The results show that high bank efficiency is positively correlated with greater involvement in green finance and better resilience to climate risks. These efficient banks tend to adopt green practices more systematically and strengthen their environmental risk management systems. This research proposes an innovative approach by combining three dimensions rarely discussed together in the literature: banking efficiency, Islamic finance, and environmental sustainability.

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1. INTRODUCTION

Over the past two decades, climate change has become a central issue for global economies, posing significant risks to both financial stability and sustainable development. In this context, green finance has emerged as a strategic lever to channel capital flows towards projects compatible with climate objectives (OECD, 2023; IMF, 2024). Financial institutions, particularly banks, are now called upon to redefine their priorities in order to fully integrate environmental considerations into their financing and risk management activities (NGFS, 2024).

At the same time, Islamic banks have grown rapidly in many regions, particularly in the Middle East, Southeast Asia, and North Africa. These institutions operate according to Sharia principles, which prohibit interest (riba), excessive speculation (gharar), and encourage risk sharing as well as the promotion of social justice and collective welfare (Akmal et al., 2025; Khan and Badjie, 2022). This ethical orientation theoretically makes Islamic banks well-positioned to play an active role in sustainable finance, particularly through instruments such as green sukuk or crowdfunding of ecological projects (World Bank and IIFM, 2023).

However, simply adhering to Sharia principles does not guarantee an effective contribution to the fight against climate change. Operational capacity, particularly in terms of banking efficiency, is a key determinant in enabling these banks to align their business models with green finance objectives (Abbas et al., 2023). Banking efficiency, measured through a bank's ability to optimally use its resources to generate revenue or control costs, is therefore likely to influence its involvement in green financing and climate risk management strategies.

In this perspective, this paper poses the following question: What is the role of banking efficiency in the contribution of Islamic banks to green finance and climate risk management?

To answer this question, we analyze a panel of Islamic banks over the period 2000–2024, using a stochastic frontier analysis (SFA) approach to assess their efficiency, and studying its effects on their green commitments and their exposure to climate risks.

Our contribution is threefold. First, we combine three areas of research that are still poorly integrated: banking efficiency, Islamic finance, and environmental sustainability. Second, we provide recent empirical evidence on the behavior of Islamic banks in the face of climate risks. Third, we offer concrete policy implications for regulators and banks seeking to strengthen their alignment with sustainable development goals.