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GAME ANALYSIS OF THE DIFFUSION EFFECT OF FINANCING EFFICIENCY OF ENTERPRISES LOW-CARBON SUPPLY CHAIN

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Abstract

It is of great practical significance to study the financial constraints enterprises face when improving low-carbon technology and the role of financial institutions in low-carbon transformation. Based on consumers' environmental awareness, the government's carbon peak, and carbon neutrality goal, this paper investigates the cooperative financing mode and efficiency of low-carbon supply chain enterprises under the situation of financial constraints. To deeply explore the four scenarios of whether financial institutions intervene or whether customer companies adopt voluntary diffusion, this paper, based on evolutionary game theory, constructs a game model of the relationship among financial institutions, suppliers, and customers to explore the evolution process of the diffusion of financing efficiency of the low-carbon supply chain. The simulation analysis is carried out to demonstrate the evolution process of the three-party evolutionary game subject from its initial value to the equilibrium value. The results find that financial institutions, upstream supplier firms, and downstream customer firms are closely related in the green credit market, and their low-carbon supply chain financing efficiency diffusion varies with different scenarios. This paper enriches the existing financing models, provides rich theoretical guidance for solving the problem of low-carbon supply chain financing, has essential reference significance for improving the efficiency of low-carbon supply chain financing, and has practical significance for enterprises to choose low-carbon supply chain financing strategies.

Key words: financing efficiency, diffusion effect, game analysis

Received: March, 2023; Revised final: July, 2023; Accepted: November, 2023; Published in final edited form: December, 2023

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