

The Analysis of Application of Green Bonds in New Energy Vehicles in China: From Evolutionary Game Theory

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Abstract : Sustainable development in the new energy vehicles field is the requirement of the net zero aim. Green bonds are accepted as a practical financial tool to boost the transformation of relevant enterprises. The paper analyzes the interactions among governments, enterprises of new energy vehicles, and financial institutions by an evolutionary game theory model and offers advice to stakeholders in China. The decision-making subjects of green behavior are affected by experiences, interests, perception ability, and risk preference, so it is difficult for them to be completely rational. Based on the bounded rationality hypothesis, this paper applies prospect theory in the evolutionary game analysis framework and analyses the costs of government regulation of enterprises adopting green bonds. The influence of the perceived value of revenue prospect and the probability and risk transfer coefficient of the government's active regulation on the decision-making agent's strategy is verified by numerical simulation. Finally, according to the research conclusions, policy suggestions are given to promote green bonds.

Keywords : green bonds, new energy vehicles, sustainable development, evolutionary Game Theory model

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