

ESG Portfolio Performance Across Risk Tiers and Market Conditions: New Evidence from China

Zhenzhen Zhu

The Hong Kong Polytechnic University, Kowloon, Hong Kong

Yun Liu

The Hong Kong Polytechnic University, Kowloon, Hong Kong

Ya Li

The Hong Kong Polytechnic University, Kowloon, Hong Kong

Johnny K. Chan

The Hong Kong Polytechnic University, Kowloon, Hong Kong

Abstract

We propose a theoretical model and examine the performance of high-rated ESG portfolios in the Chinese equity market from 2020 to 2025, using mean-variance optimization and stochastic dominance tests. Portfolios constructed by top-rated ESG firms are evaluated against the CSI 300 and CSI 800 benchmarks across distinct risk profiles. Results show that low-risk ESG portfolios consistently outperform market indices in both absolute and risk-adjusted terms. Medium-risk portfolios achieve performance parity, while high-risk portfolios deliver higher returns at the cost of weaker risk efficiency and elevated tail risk. A sub-period analysis reveals cyclical performance dynamics: ESG outperformance is concentrated in low-risk strategies during crisis periods but broadens across risk tiers during market recoveries. Our findings underscore the importance of dynamic ESG allocation, emphasizing low-risk exposure during downturns and selectively expanding to moderate-risk strategies when market recovers. Policymakers should support ESG integration through more rigorous disclosure standards and recognize its role in enhancing market resilience and sustainable capital allocation.

JEL classification: G11; G14; Q56.

Keywords

ESG, risk dynamics, stochastic dominance, market conditions.