RENEWABLE ENERGY DEVELOPMENT, ENERGY UNCERTAINTY, AND EXPORT PERFORMANCE NEXUS: EVIDENCE FROM EMERGING ECONOMIES

Abstract

Emerging economies face a growing policy dilemma, as they simultaneously pursue export-led growth and renewable energy transition amid rising energy uncertainty. While renewable energy adoption is central to achieving sustainability and reducing fossil-fuel dependence, it can alter production costs and international export competitiveness in emerging economies. Therefore, this study first investigates the integrated role of renewable energy consumption, financial globalisation, and government spending on overall export performance in emerging economies. Subsequently, it explores the impact of renewable energy consumption mix on service exports, with financial globalisation as a moderator. Further, this study examines the role of energy uncertainty in export dynamics. To formulate the export performance functions, this study controls for government spending, economic growth, and the exchange rate. Finally, it explores the roles of the renewable energy generation mix and government effectiveness in mitigating energy uncertainty by controlling for the effects of geopolitical risk, economic growth, and domestic bank credit.

To select the sample of emerging economies for panel analysis, it follows the Morgan Stanley Capital International's country classification. The study samples are not uniform across the objectives. For the first and second objectives, this study uses 17 emerging economies. Whereas the third and fourth objectives of the thesis use 8 emerging economies. Data sources, such as the British Petroleum's Statistical Review of World Energy, World Development Indicators (World Bank), Economic Policy Uncertainty, and KOF Globalisation, are used to obtain data for empirical analysis of this study. The study period varies across the objectives.

The findings reveal that renewable energy consumption negatively affects aggregate exports; however, financial globalization and government spending significantly moderate and offset this adverse effect, with financial globalization exerting a stronger cushioning effect. In contrast, renewable energy consumption positively influences service exports, and this effect is further amplified by financial globalization, particularly through solar energy deployment. Energy uncertainty hampers overall exports, with a comparatively greater negative impact on goods exports than on service exports. Further, this adverse impact worsened after the global financial crisis. Renewable energy generation mix and improved governance substantially reduce energy uncertainty in emerging economies.

Keywords: Renewable energy development; Energy uncertainty; Export performance; Financial globalisation; Emerging economies