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Exchange rate asymmetry in Australiaâ€™s mining exports: The roles of policy uncertainty and renewable energy development
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Abstract

This study examines whether appreciation and depreciation of the Australian dollar have asymmetric effects on Australia's mining exports, and how policy uncertainty and renewable energy development relate to export performance. Using monthly data from January 2016 to April 2025, it estimates a Nonlinear Autoregressive Distributed Lag (NARDL) model for two export categories, Non-Rural Goods (NRG) and Other Mineral Fuels (OMF). The models control for iron ore prices, China's industrial production, the OECD G20 Composite Leading Indicator, and exchange rate volatility. Bounds tests show a long-run cointegrating relationship in both models. However, the long-run exchange rate coefficients are individually insignificant, so the relationship reflects the joint influence of the model variables rather than the exchange rate alone. For NRG, the exchange rate has a significant asymmetric effect in the short run but not in the long run, which is consistent with delayed J-curve-type adjustment. OMF shows no significant asymmetry at either horizon. Policy uncertainty affects both categories only in the short run, which suggests that firms adjust short-term operating decisions before they change production capacity. Renewable energy project progress has a positive and significant long-run association with OMF exports, which indicates that the energy transition and traditional resource exports have grown alongside each other rather than one displacing the other. Exchange rate volatility has only a weak effect, marginally significant for OMF in the short run. Because the two categories respond differently, the findings suggest that mining exports should not be treated as one uniform group. They also suggest that resource and energy-transition policy would benefit from a sector-specific approach and more predictable policy settings.

Keywords: exchange rate asymmetry, NARDL, mining exports, policy uncertainty, renewable energy, Australia