Export Quality of Functional Materials in Japan
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Abstract

This paper measures the quality of Japan's functional materials exports using detailed trade data and examines its characteristics. Specifically, assuming that export quality is reflected in export unit prices, we attempt to measure export quality by estimating gravity equations. This study focuses particularly on functional materials, measuring the quality of exports for each item based on detailed six-digit HIS code classifications. Japan's export competitiveness in functional materials maintains an exceptionally high global standard, representing one of the few sectors possessing the "ability to earn overseas" in the world market. In this sense, quantitative analysis of export quality for functional materials is highly significant. This study represents the first such attempt in Japan and holds considerable academic value.

Measurement results reveal that Japan maintains a top-tier global level of export quality, particularly for semiconductor materials and electronic components. Furthermore, the quality of exports for functional coating agents, paints, and inks, as well as functional films and sheets, has remained stable over time, maintaining a global ranking between 4th and 6th place. Considering that the quality of exports ranks highly globally and shows stable trends, functional materials play an extremely important role in Japan's export strategy.

Keywords Export quality, Functional materials, Export price, Gravity equation, Semiconductor
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