Asymmetric Exchange Rate Pass-Through between Unexpected Yen Appreciation and Depreciation: The Case for Japanese Machinery Exports

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Abstract

This paper empirically investigates how the degree of exchange rate pass-through (ERPT) or pricing-to-market (PTM) has changed in response to large exchange rate changes in Japan's exports of three major machinery industries from January 2000 to December 2022. We employ the nonlinear autoregressive distributed lag (NARDL) model with multiple thresholds and rigorously distinguish not only between strong yen and weak yen periods but also between unexpected yen appreciation and depreciation using the survey data on Japanese firms' predicted exchange rate published by the Bank of Japan. We find that while PTM behavior becomes evident during the strong yen period in level, there is a marked difference in the degree of PTM or ERPT between the unexpected yen appreciation and depreciation. This difference is much more evident in exports of general machinery and transport equipment products. Japanese exporters strategically change the pricing behavior especially in response to unexpected appreciation and depreciation during the strong yen period. Our empirical findings would have a significant implication for better pricing strategies by Japanese export firms in the face of a sharp exchange rate changes.