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International Business Review 13 (2004) 281–308
INTERNATIONAL BUSINESS REVIEW
www.elsevier.com/locate/ibusrev

Currency invoicing practices, exchange rate volatility and pricing-to-market: evidence from product level data☆

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Abstract

The paper investigates the long-run relationship between exchange rate volatility and the pricing-to-market policies of international exporting firms when such firms choose between different currencies (exporters, importers or vehicle) for invoicing their trading partners. Distinctively, our analysis is conducted at the level of the product, using data from the Norwegian fishing industry. Dynamic error correction models are formulated to capture the long-run relationship between exchange rate pass-through elasticities and the different currency invoicing strategies. Exchange rate pass-through coefficients vary from 0.07 to 0.98 across products. Moreover, for a given product, pass-through coefficients vary significantly both across and within destination markets, depending upon the invoicing currency chosen. This variation is linked to nominal rigidities and exchange rate uncertainty. The findings also suggest that the choice of invoicing currency may be an important strategic variable facilitating discriminatory pricing by exporting firms. Finally, the results also corroborate theoretical predictions linking pass-through to exchange rate volatility; namely, pass-through is lower the more volatile the exchange rate.

JEL classification: F14; F23

Keywords: Exchange rate pass-through; Pricing-to-market; Currency invoicing strategy; Cointegration

☆ The findings, interpretations and conclusions reached are the authors' own, and should not be attributed to the Bank of Norway. An earlier version of this paper was presented at the annual meetings of the European International Business Academy (EIBA).

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0969-5931/$ - see front matter
doi:10.1016/j.ibusrev.2004.01.003

1. Introduction

Studies of international financial management practices generally separate the analysis of exchange rate pass-through, exchange rate risk management and choice of currency of invoicing. The central contribution of this paper is to begin to partially integrate these issues. We investigate the relationship between exchange rate pass-through and the pricing policies of international exporting firms when such firms choose between different currencies for invoicing their trading partners. Using a variant of the logarithmic market model (see Hooper & Mann, 1989), the paper empirically estimates how the degree of exchange rate pass-through at a product level alters in relation to differing invoicing practices of the exporting firm. We argue that the results obtained may yield important insights into how firms and MNEs that operate in international markets use currency invoicing decisions as part of their pricing strategy. Moreover, we believe that the findings also provide the first evidence relevant to existing theoretical predictions linking choice of invoicing currency to exchange rate volatility (Friberg, 1998).

If exporters have some market power and markets are segmented, an exchange rate change may induce price discrimination across destination markets, or pricing-to-market in Krugman's (1987) terminology. Alternatively stated, exporters will set different prices, expressed in the exporters' currency, in different destination markets. This in turn implies that the exchange rate pass-through, defined as the response of the destination (import) market price of the product to an exchange rate change, is incomplete. A destination-specific mark-up adjustment thus absorbs part of the exchange rate change, and deviations from the law of one price will generally occur.

Pricing-to-market could depend on either nominal price rigidities and exchange rate surprises (as in Giovannini, 1988) or it could be due to deliberate price discrimination, which in turn could be related to market conditions specific to the destination market. The vast majority of studies focus on the latter issue, and several emphasise the importance of market structure characteristics.[1] The extent of pricing-to-market has been explained by both the size of, and the desire to, maintain product market share (Feenstra Gagnon & Knetter, 1996). Slow demand adjustment implies that current price-setting strategy will affect future revenues, suggesting there may be benefits in having a stable short-run price in order to secure market share (Gottfries, 1994; Krugman, 1987). This raises the possibility that intertemporal links related to the expected permanence of an exchange rate change might influence a firm's pricing strategy (Froot & Klemperer, 1989). The importance of forward looking exchange rate expectations can also be related to adjustment costs on the supply side (Kasa, 1992). In these models the mechanism for pricing-to-market is (primarily) deliberate price discrimination, and is

[1] Some recent studies have drawn attention to trade barriers and multinational corporations (MNCs) in order to explain the asymmetric relationship between exchange rate movements and changes in selling prices.