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Hot money effect or foreign exchange exposure? Investigation of the exchange rate exposures of Taiwanese industries

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ABSTRACT

In this study, we use stock index data of various industries in Taiwan from 2001 to 2010 to estimate the exchange rate exposures of these industries under various data frequencies (daily, monthly, and quarterly). We add the effect of hot money on exchange rate exposures and find that significant exchange rate exposures exist for most industries. After including the buy–sell imbalance of foreign investors as a factor, we find that the positive effect of currency value changes on stock returns probably contributes to the concurrent increase in the stock and foreign exchange markets caused by the hot money flowing into Taiwan from foreign investors. We likewise observe a more significant exposure in the lower frequency data. This result indicates that avoiding economic exposure in exchange rate exposures is comparatively more difficult.

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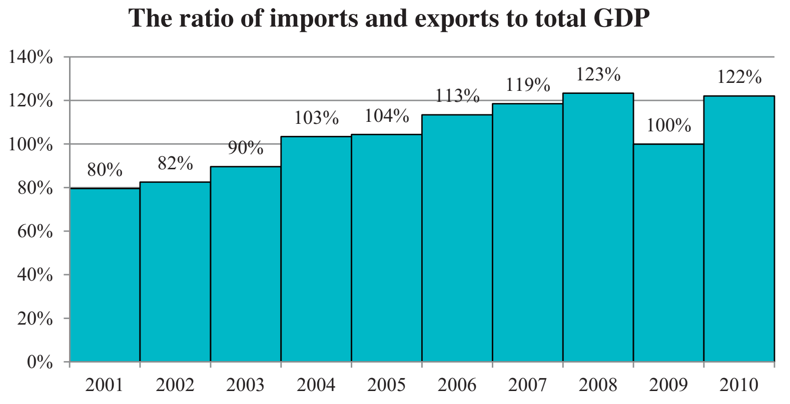

Fig. 1. The ratio of imports and exports to total GDP.

1. Introduction

Since the collapse of the Bretton Woods system in 1973, countries worldwide have modified their fixed exchange rate system against the U.S. dollar to floating exchange rate systems. Subsequently, firm valuations have been affected by unexpected exchange rate variations that subjected firms to exchange rate exposure risks. Therefore, a number of studies have investigated the effect of exchange rate variations on firm valuations.

According to financial theories, firm valuations are derived from the discounted future cash flow. Therefore, unexpected exchange rate variations are likely to affect the future competitiveness and revenue of companies, thus affecting future cash flows and firm valuations. Shapiro (1975), Levi (1994), and Booth (1996) highlight the effect of exchange rate variations on firm valuations through translation, transaction, and economic exposures. Of the three exposure types, translation and transaction exposures are false short-term exchange rate exposures, which firms can hedge effectively using derivatives. Conversely, economic exposure is a long-term effect, in which, regardless of whether the firm engages in import and export or is a purely domestic business, competitiveness may be affected by exchange rate variations that cause fluctuations in stock price valuations.

Taiwan is an island economy that is restricted by a small economical scale and limited domestic market; thus, Taiwanese firms must engage in international trade and foreign investments to increase their competitiveness. Reliance on the international trade increases with global operations. Fig. 1 shows that the ratio of imports and exports to total GDP continues to increase. The New Taiwan dollar is not a dominant currency in the global market; thus, most imports and exports are priced in either U.S. dollars or other dominant currencies. Therefore, Taiwanese firms are easily affected by fluctuations in the exchange rate. Even for firms that do not engage in international trade, their relative competitiveness against foreign products continues to fluctuate, which affects future product sales.

Studies on the level of exchange rate exposures for specific industries and firms adopt the measurements used by Adler and Dumas (1984). Firm valuation is used as dependent variable, and the exchange rate variation is used as the independent variable for regression analysis. The resulting estimate coefficient values are used to denote the sensitivity of firm valuations to exchange rate variations. Most subsequent studies included market returns as a replacement variable for macroscopic environmental factors.[1]

[1] Jorion (1990), Bodnar and Gentry (1993), Bartov and Bodnar (1994), Choi and Prasad (1995), He and Ng (1998), Yucel and Kurt (2003), Martin and Mauer (2003), and Muller and Verschoor (2006) are all based on the Foreign Exchange Exposure Estimation Model of Adler and Dumas (1984) with general economic factors substituted by market returns. The difference is that different variables are substituted for firm value factors or exchange rate factors.