

Exchange Rate Movements, Foreign Direct Investment and Strategic Trade Policy: A Real Options Approach

Abstract

This thesis theoretically and empirically examines the relationship between exchange rate movements and the timing of foreign direct investment (FDI). A real options approach is adopted. This thesis contributes to the literature in illustrating the importance to consider the diversity of investing motives when examining the relationship between exchange rate movements and foreign direct investment.

To show the importance of the diversity of the motives in investigating this issue, four different types of FDI are discussed in this thesis: market-seeking FDI, reverse-importing FDI, export-substituting FDI, and antidumping-jumping FDI. We first extend Dixit-Pindyck's real options model to show that while an increase in exchange rate volatility tends to delay the FDI activities of a market-seeking firm and a reverse-importing firm, it might accelerate the FDI activity of an export-substituting firm if the firm's degree of risk aversion is high enough. In addition, it is also shown that while the depreciation of a host country's currency tends to stimulate FDI activities of reverse-importing firms and export-substituting firms, the depreciation tends to deter FDI activity for market-seeking firms.

With the industry-panel data and the firm-level data on Taiwan's outward FDI into mainland China over the period 1987-2002, our empirical findings indicate that the

exchange rate level and its volatility in addition to the relative wage rate have had a significant impact on Taiwanese firms' outward FDI into China. In general, the empirical results are consistent with the prediction of the theory. These results reveal that the relationship between exchange rate movements and FDI is crucially dependent on the motives of the investing firms. Without considering this fact in an empirical model, the testing results might suffer from aggregations bias.

Furthermore, this thesis sets up a real options model with imperfect competition to analyze how exchange rate movements affect dumping occurrence and antidumping-jumping FDI as well as the social welfare of importing country. We consider the price dumping case and find that the effect of exchange rate movements on the probability of dumping occurrence seems asymmetric. In addition, if a government adopts an AD policy, it is shown that this policy might induce exporting firms to undertake AD-jumping FDI. Finally, we find that, if an AD policy induces exporting firms to undertake AD-jumping FDI, the policy might have a negative impact on the profits of local firms and the social welfare of the importing country as well, which is contrary to the prediction of the earlier literature on strategic trade policy.

匯率波動、對外直接投資與策略性貿易政策： 實質選擇權分析法

摘 要

本論文的目的在於研究匯率波動與對外直接投資(foreign direct investment, FDI)時點的關係。本論文採用實質選擇權分析法(real options approach)由理論面重新檢視這個議題，並利用實際資料驗證理論的正確性。本論文在文獻上的貢獻在於證明：在探討匯率波動與 FDI 關係時有必要考慮廠商投資動機的差異性。

為了說明不同投資動機對這個議題的重要性，本論文考慮四種不同對外直接投資的型態，分別為市場導向型(market-seeking)、回銷導向型(reverse-importing)、替代出口型(export-substituting)及躍過反傾銷稅型(antidumping-dumping)。首先，我們延伸 Dixit-Pindyck 的實質選擇權模型，證明匯率波動提高會使市場導向型及回銷導向型的廠商延後投資，但對於風險趨避程度夠高的替代出口型廠商而言，匯率波動提高則會使其提前投資。此外，我們證明地主國貨幣升值對市場導向型廠商的 FDI 有利，但對回銷導向及替代出口型廠商的 FDI 則有不利影響。

其次，我們分別使用台商至中國大陸投資的產業資料及廠商資料進行實證。樣本期間涵蓋 1987 年至 2002 年。實證結果發現，新台幣兌人民幣實質匯率及其波動度與兩岸相對工資等因素對台商至中國大陸投資時點皆有顯著的影響，而且這些實證結果皆與前述理論預期相符。這些結果顯示，匯率波動對 FDI 之影響方向與投資動機息息相關。在進行實證研究時若忽略了這項因素，實證結果可能

會產生加總偏誤(aggregation bias)。

最後，本論文建立一個不完全競爭下的實質選擇權模型，分別探討匯率波動如何影響出口廠商的傾銷行為及其躍過反傾銷稅的對外直接投資 (antidumping-jumping FDI)，並分析進口國採取反傾銷政策的福利效果。我們發現匯率波動對廠商以低於內銷價格傾銷(price dumping)至出口市場的影響有不對稱(asymmetry)現象。此外，若政府採取反傾銷政策，可能刺激出口廠商採行躍過反傾銷稅的 FDI。惟若出口廠商採行躍過反傾銷稅的 FDI，不僅進口國國內廠商受到傷害，其社會福利也可能下降。此結論與過去策略性貿易政策文獻之看法大相逕庭。