

# Technology acquisition among Korean and Taiwanese firms in the United States

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## Abstract

This paper adopts a resource-based view (RBV) to illuminate the technology and/or innovation acquisition processes of Taiwanese and South Korean firms that have invested directly in the United States (US). Specifically, it shows that inward investment to the US by Asian firms reflects a strategy of resource renewal and expansion. Further technological resource acquisition is driven by a reverse product cycle model that emphasizes incremental innovations. Survey data from a sample of Taiwanese and South Korean firms points to significant differences in the technology acquisition processes that characterize these Asian investors. The US appears to be a more important source of knowledge for resource acquisition among Taiwanese firms (these firms are typically smaller and younger than their South Korean counterparts). Further, ordered probit regression reveals that Taiwanese firms are more likely to develop technological competency from local basic research, whereas South Korean firms are more likely to build technological competency from applied research and market-derived knowledge. For reasons we discuss in the concluding section, it is unclear if such a strategy of resource acquisition will lead to long-term competitive advantage on a sustained basis. © 2005 Elsevier Ltd. All rights reserved.

**Keywords:** Resource-based theory; Technology acquisition; Taiwan; Korea; United States

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## 1. Introduction

Considerable attention has been paid in the literature on the role of international research and development (R&D) in supporting a firm's competitive advantage

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(Birkinshaw, 1995; Cantwell & Odile, 1999; Dunning & Lundan, 1998). While this literature has contributed to our understanding of the processes driving the internationalization of R&D, most studies are based largely on the behavior of firms from industrialized countries. In contrast, latecomers in international R&D such as Asian firms from South Korea and Taiwan appear to be following a trajectory of innovation activities that is different from that of European or American firms (Hobday, Rush, & Bessant, 2004; Lee & Lim, 2001; Mathews & Cho, 2000). The objective of this paper is to examine the nature of Asian firms' technological model through their knowledge acquisition characteristics in the United States (US).

In line with a burgeoning literature that links firms' competitive advantage to their technological competence, this paper employs a resource-based view (RBV) to examine Asian firms' technological acquisition patterns in the US. RBV has been defended by Teece, Pisano, and Shuen (1997) as being more process-illuminating than either the competitive forces approach of Porter (1980) or the game theoretic strategic conflict approach of Shapiro (1989). Our interest in using RBV as the overarching framework for motivating this research is that it allows us to examine the potential of Asian firms to muster relevant technological resources for sustained competitive advantage. In addition, two recent studies highlight why examining technology acquisition and thereby resource expansion or creation might be worthy of research. First, the notion that inward investment in more developed countries such as the US is increasingly motivated by strategies of technology sourcing has become a rather popular theme in the foreign direct investment literature (Cantwell & Odile, 1999; Dunning, 1994). According to Cantwell and Odile (1999), technology sourcing is likely to take the form of a home-base exploitation strategy among firms from developing countries compared to the more home-base augmentation strategy among firms from more industrialized countries (see Kummerle, 1996 for an elaboration of the strategies). Second, the few studies that exist on Asian investment in the US indicate that such investment is more likely to be associated with R&D activities (Chen & Chen, 1998). Neither of these nor the Asian latecomers' literatures, however, has provided firm-level evidence of technology sourcing and development in developed markets like the US. This paper seeks to fill this gap. Using recent 2003 data that were collected from a survey of Taiwanese and Korean firms in the US, we seek first to unpack the nature of technology acquisition through firms' innovation activities in the US. Second, the relationship between these acquisitions or development and thereby resource accumulation and expansion, and firms' competency will be investigated. To understand the theoretical basis for relating firms' technological resources and their competitive advantage, a review of RBV in the context of Asian firms is provided in the next section.

## **2. Firm resources and technological assets**

The resource-based view of the firm has become a popular theoretical framework in the field of strategy analysis. RBV's analysis of the conditions for sustained competitive advantage is premised on two tenets: (1) that firms are heterogenous because of differentiated strategic resource control, and (2) that it is this heterogeneous resource endowments that give rise to differential firm performance. To secure a strong

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