



# The choice of foreign market entry mode: An analysis of the dynamic probit model

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## ABSTRACT

Based on the official survey data of Taiwanese FDI in China, this study investigates the transaction cost determinants of foreign market entry mode choice. In contrast to the existing literature, this paper constructs a panel data set and makes a dynamic probit analysis on the mode choice between wholly-owned subsidiaries and joint ventures. Empirical results indicate that state dependence between current and past modes plays an important role in determining entry mode choice. However, the impact of state dependence will be reduced significantly if the mode adopted in the previous period is associated with poor performance of the parent firm. There is strong linkage between mode performance and future mode choice. Evidence also shows that the hypothesized influences of transaction cost factors on entry mode choice gain support in the dynamic choice process.

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## 1. Introduction

One of the most critical decisions faced by multinational enterprises (MNEs) intending to undertake foreign direct investment (FDI) is the choice of foreign market entry mode. A large number of studies analyze the determinants of entry mode choice within the transaction cost framework proposed by Anderson and Gatignon (1986). Based on the transaction cost economics initiated by Williamson (1975, 1985), the underlying theory claims that the organizational structure and design are determined by the trade-off between market transaction costs and hierarchical control costs. Depending on the factors pertaining to transaction specific assets, external and internal uncertainty, and the potential for opportunistic behavior, MNEs choose a specific mode of entry in order to minimize transaction costs. Transaction cost analysis has been extended by many researchers by integrating several factors into the given framework, such as environmental and strategic factors, network relationship, and institutional and cultural factors (i.e., Brouthers, 2002; Coviello and Munro, 1997; Hennart, 1991; Hill, et al., 1990; Lu, 2002; Yiu and Makino, 2002). In a recent study, Brouthers et al. (2008a) combine transaction cost economics with insights from the real option theory and suggest that this model effectively improves decision-making outcomes. The firms choose the entry mode predicted by this combined model have significantly satisfactory performance.

Other models are also developed to explain the phenomena associated with entry mode choice. The eclectic framework introduced and developed by Dunning (1980, 1988, 1998, 2000) is a model commonly applied. This approach states that the entry mode decisions are determined by three sets of advantages as perceived by enterprises, namely, ownership advantages, location advantages, and internalization advantages. The more advantages a firm has the greater the tendency of adopting the mode with a high level of control. The resource-based view is also among the most frequently applied perspectives. This view, including knowledge-based and organizational capabilities theories, regards a firm as a bundle of capabilities and knowledge, where individual skill, organization and technology are linked together (Aulakh and Kotabe, 1997; Madhok, 1998; Nelson and Winter, 1982). Entry mode decisions are made under the consideration related to the development and acquisition of firm-specific resources and capabilities. Brouthers et al. (2008b) further argue that resource-based advantages have different levels of applicability in different national institutional environment. The entry mode predicted by a model that incorporates both resource-based advantages and external institutional factors yields better subsidiary performance. A survey article by Brouthers and Hennart (2007) provides a review of issues and various approaches for the international entry mode research.

This paper examines the transaction cost determinants of entry mode choice between wholly-owned subsidiaries (WOSs) and joint ventures (JVs) for Taiwanese FDI in China. Taiwan has been one of the main contributors of FDI flows in the East Asian area since 1990, particularly for the investment into the Chinese market. People in Taiwan share common language, ethnic links, and cultural traits with

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Chinese. A lot of Taiwanese have strong affection for their original home in China and have strong commitment to their family. Shared culture and family relations produce more mutual trust and less uncertainty between Taiwanese investors and Chinese local firms (Wei et al., 2005). The influence of cultural distance between home and host countries on entry mode choice is widely recognized in the literature. Large cultural distance, implying high transaction costs for MNEs investing overseas, may lead them to adopting JVs as the entry mode (Hennart and Larimo, 1998). Foreign investors can share risk with local partners and avoid costly mistakes in an environment with unfamiliar culture. Cultural advantages for Taiwanese firms' entry into China suggest that they inherently prefer WOSs to JVs as they are more acquainted with local conditions and hence are less reliant on local firms. Strategically, Taiwanese firms tend to enter this culturally similar market with wholly-owned modes in order to obtain a high return (Brouthers, 2002; Kim and Hwang, 1992). It is thus interesting to know whether the transaction cost arguments gain support in explaining the mode choice when WOSs seem to be a MNE's natural choice.

The main feature of this paper is that we construct a panel data set to make a dynamic binary choice analysis on mode choice. Previous studies generally regard entry mode choice as a one-stage static decision-making problem. However, the choice may be a multiple-stage dynamic process in the sense that firms having started to enter into a foreign market may change their original strategy due to learning effects or unanticipated developments and results. There are two merits in the panel data dynamic choice analysis. First, although cross-sectional studies can test the relation between observed firm characteristics and entry mode choice, they overlook that the choice might be affected by unobserved heterogeneity across firms. The panel data model has greater flexibility in modeling behavior differences among individuals. Second, a dynamic specification, where the effect of the lagged dependent variable is considered in the binary choice model, is necessary since state dependence (or habit-persistence) is important for a firm's entry mode decision. Some firms may remain more likely to choose JVs than others in every period due to firm heterogeneity. However, having JVs in one period may also lower the probability of choosing WOSs in the next period because of large adjustment costs in changing the organizational form in relatively short periods. This reflects the effect of state dependence. Heckman (1981a) has shown that state dependence is particularly important in a panel that has only a few observations for each individual, which, we believe, is a usual case for most of entry mode data. By modeling the dynamic effect in the binary choice model, the transaction cost influences (i.e., the impact of firm heterogeneity) on entry mode choice can be tested in a more precise way that controls for state dependence of mode choice.

Furthermore, as indicated by Brouthers and Hennart (2007), although entry mode studies have made experience a standard variable in mode choice models to consider the effect of learning from past choices, they fail to distinguish between favorable and unfavorable experience. A firm that has tried JVs and has not performed well will consider whether continue using JVs or try another mode type. As performance reflects the success and failure of the selected mode, the dynamic setting is able to identify the link between previous mode performance and future mode choices. It allows us to examine how mode performance affects state dependence of mode choice. In sum, a dynamic binary choice analysis, with its capability of dealing with the persistence effect of mode use and the impact of past performance on mode choice dynamics, might help us obtain additional insights not available from the cross-sectional techniques.

The dichotomous specification of WOSs and JVs used in this paper deserves more notice. In the entry mode literature, three commonly explored modes are wholly-owned mode, joint venture mode, and non-equity contractual mode such as licensing, franchising, and exporting. In the Chinese market, few Taiwanese firms use licensing

agreements or export to China prior to establishing plants there. This feature makes it less necessary to consider contracts as an alternative mode of servicing the Chinese market. Besides, according to the perspective articulated by Hennart (1988, 1989, 2000), the remuneration to input suppliers in the equity modes, either WOSs or JVs, is paid ex post from the profit of the venture, which is different from contracts with payments being specified ex ante. The variables that determine the choice between contracts and equity modes are thus not necessarily the same as those affecting the choice between WOSs and JVs (Brouthers and Hennart, 2007). Gatignon and Anderson (1988) and Brouthers et al. (2003) also emphasize that the role of transaction cost variables in predicting entry mode choice when a contractual partnership has been chosen is not as clear as for the decision as to whether to set up a WOS or JV. Therefore, while classifying entry modes in a binary way may reduce the variability of mode choice, it allows for a more explicit and precise test of transaction cost arguments. Examining the binary choice between WOSs and JVs has been the methodology adopted by many entry mode studies, e.g., Brouthers (2002), Chen and Hennart (2002), Cleeve (1997), Hennart (1991), Hennart and Larimo (1998), Makino and Neupert (2000), and Padmanabhan and Cho (1996).

This paper also distinguishes the entry mode, i.e., WOSs vs. JVs, from the establishment mode, i.e., greenfields vs. acquisitions, and focuses on the former. In the literature, some researchers have mixed these two dimensions by considering the choice among, say, wholly-owned greenfields, wholly-owned acquisitions, and JV greenfields. However, in the survey article of international entry mode research, Brouthers and Hennart (2007) do not include the studies as to the choice between greenfield and acquisition entry. They argue that in view of the theoretical reasons and the empirical evidence, the decision of entry mode and the decision of establishment mode are separate and independently made. This distinction is also recognized by several studies, e.g., Dikova and van Witteloostuijn (2007), Hennart (2000), Hennart and Park (1993), and Padmanabhan and Cho (1996).

Based on the official survey data conducted by the Department of Statistics of Taiwan, this paper shows that state dependence, which suggests the persistence between current and previous entry modes, is important in explaining an MNE's entry mode choice. It is also evidenced that the transaction cost arguments of entry mode choice gain support when state dependence has been controlled in a dynamic probit model, provided that this model is appropriately estimated by assuming the endogeneity of initial conditions. Transaction cost economics predict the choice of entry modes satisfactorily even if the MNEs inherently have greater propensity of using WOSs because of common cultural traits, at least for Taiwanese FDI in China. Furthermore, there is evidence supporting an intriguing dynamic phenomenon that poor mode performance lowers the degree of state dependence. The possibility of continuing adoption of WOSs in the current period due to mode dependence will be reduced significantly if WOSs used in the previous period produces poor performance in the MNE's parent firm.

The next section presents the empirical models, including static and dynamic binary choice models. Section 3 reviews the literature and discusses the transaction cost determinants of entry mode choice. Section 4 describes data and variable measurement. The empirical results are presented in Section 5, and finally Section 6 concludes.

## 2. Static and dynamic models of entry mode choice

Previous studies generally use cross-sectional data for probit or logit models to analyze the choice of foreign entry mode. In this study, since longitudinal data from official surveys are available to track a firm's mode choices, the binary choice models and their estimation are extended to the panel data format.

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