Journal of International Economics 65 (2005) 75–91
www.elsevier.com/locate/econbase

Industrial groupings and foreign direct investment

Bruce A. Blonigen[a,*], Christopher J. Ellis[b], Dietrich Fausten[c]

[a] University of Oregon and NBER, Department of Economics, Eugene, OR 97403-1285, USA
[b] University of Oregon, Department of Economics, Eugene, OR 97403-1285, USA
[c] Monash University, Department of Economics, Clayton 3168, Victoria, Australia

Received 6 July 2001; received in revised form 9 December 2003; accepted 17 December 2003

Abstract

We explore worldwide foreign direct investment (FDI) location decisions by Japanese manufacturing firms from 1985 through 1991. Our conditional logit estimates provide evidence that firms' location decisions are affected by membership in either vertical or horizontal *keiretsu*. Consistent with previous studies that stress agglomeration effects on firms' location decisions, we find that the stock of investment in a region by a firm's vertical *keiretsu* partners increases the probability of location. Further, we find that the recent flow of investment into a region by a firm's horizontal *keiretsu* partners increases the probability of investment to the region, providing evidence of networking effects.

Keywords: Multinational enterprises; Networking; *Keiretsu*; Agglomeration

JEL classification: F23; G3

1. Introduction

It has frequently been suggested that firms in the large industrial groupings of Japan and Korea, known, respectively, as *keiretsu* and *chaebol*, may behave differently than their US or European counterparts in a number of dimensions. A small set of papers in recent years have examined whether membership in such groupings affects firms' foreign direct investment (FDI) decisions, with a particular focus on the effect of *keiretsu* groupings on Japanese FDI activity.

* Corresponding author. Tel.: +1-541-346-4680; fax: +1-541-346-1243.
E-mail address: bruceb@uoregon.edu (B.A. Blonigen).

0022-1996/$ - see front matter
doi:10.1016/j.jinteco.2003.12.003

The majority of papers on this topic have examined the effect of vertical *keiretsu* groupings, where upstream suppliers are centered around a large downstream manufacturer. As detailed in Head et al. (1995), significant agglomeration externalities are likely to be present for firms in vertical *keiretsu* groupings. Suppliers work closely with downstream firms on designing specialized components and often provide just-in-time delivery of supplies. Thus, geographic proximity enhances the efficiency of such arrangements, giving firms incentives to locate their FDI in the same region. Head, Ries and Swenson (HRS) empirically examine Japanese FDI in the US and find that a greater existing stock of a Japanese firm's own vertical *keiretsu* partners in a particular US state makes that firm more likely to locate in that state as well. However, they find that this vertical *keiretsu* effect is largely due to the automobile sector and is no longer present when observations from this sector are excluded from their sample.[1]

The other major form of industrial grouping in Japan is the horizontal *keiretsu*. These are groupings of firms in often-unrelated industries that are centered on a large bank. There are three features of horizontal *keiretsu* that observers have pointed to as potentially important for economic behavior: (1) cross-ownership between partner firms, where a group bank holds a significant share of the group-member firms' equity, and these member firms hold substantial equity positions in each other; (2) potentially easier terms of credit for members from the *keiretsu*-affiliated bank, both due to a reduction in the costs of monitoring and the discipline of repeat financing; (3) organized meetings among major *keiretsu* firms often called Presidential Council meetings which potentially facilitate the exchange of information and the coordination of actions.

With respect to FDI activity, researchers have focused on easier credit terms as the feature of horizontal *keiretsu* that potentially leads to greater firm investment, including FDI. The employed tests examine whether membership in any horizontal *keiretsu* increases a firm's likelihood of FDI, since such membership should give the firm cheaper financing of such investment, ceteris paribus.[2] The evidence for these effects of horizontal *keiretsu* membership is much more mixed than for vertical *keiretsu*.[3]

In addition to mixed empirical results, a recent paper by Miwa and Ramseyer (2002) argues that economic effects stemming from the features of horizontal *keiretsu* described above are more myth than reality. They point out that the vast majority of financing by Japanese firms in *keiretsu* groupings comes from non-*keiretsu* financial institutions, and this share has been increasing over time. This runs counter to the notion that horizontal

[1] Belderbos and Carree (2002) perform a similar analysis to HRS, but do so using data on FDI into China by Japanese firms. As HRS found for Japanese automobile-related FDI into the US, Belderbos and Carree find significant positive effects of existing vertical *keiretsu* member presence on Japanese electronic firms' location decisions in China, which is consistent with an agglomeration externalities motivation. Other studies have found positive effects of vertical *keiretsu* groupings on Japanese FDI activity using alternative estimation strategies, including Belderbos and Sleuwaegen (1996), Kimura and Pugel (1995) and Ryan (2001).

[2] A horizontal *keiretsu* membership dummy is sometimes interacted with variables that measure how credit-constrained the firm may be, to see if membership is more beneficial for such firms in the *keiretsu*.

[3] Belderbos and Sleuwaegen (1996) find that horizontal *keiretsu* membership makes Japanese firms more likely to be multinational enterprises and that this membership effect is most significant for those firms that are credit constrained. Ryan (2001), however, finds only weak evidence for a horizontal *keiretsu* membership effect, whereas McKenzie (1997) finds no evidence that such membership affects the likelihood of FDI into various regions by Japanese firms.