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Alexander Hijzen, Mitsuo Honda, Naohiko Ijiri, Tomohiko Inui

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Evidence from Japanese Overseas Affiliates in East Asia

Alexander Hijzen[*], Mitsuo Honda[#], Naohiko Ijiri[#], Tomohiko Inui [#]

[*] OECD and GEP, University of Nottingham
[#] College of Economics, Nihon University, Japan

Abstract

This paper looks at the role of transaction costs within multinationals for the type of management control in overseas affiliates. The central premise on which the paper is built entails that even within multinationals transaction costs are likely to be important. Consequently, multinationals may decide to complement formal ownership with direct management control by sending managers from the headquarters. We present a simple theoretical model based on the transaction cost approach to show that the incentives for direct management control increase in the degree of formal ownership over the overseas subsidiary and decrease in the level of governance costs. We evaluate these predictions using data on Japanese affiliates in East Asia. Our main finding is that contractual frictions do indeed play a role in taking up direct control in addition to formal ownership. We further find that consistent with our theoretical predictions direct control is more attractive the larger the stake in the subsidiary held by the multinational and the smaller that by the local manager.

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[*] Corresponding author. OECD , 2 rue André-Pascal75775 Paris Cedex 16 France,
FAX: +33(0)1.45.24.90.98, TEL:0033 (0) 1.45.24.92.61, E-mail addresses: Alexander.Hijzen@oecd.org

1. Introduction

One of the main features of globalisation is the internationalisation of production. Firms have increasingly globalised their activities by splitting up the production process into different components that can be produced in different countries. This phenomenon has been referred to as fragmentation (Jones and Kierzkowski, 1990), vertical specialisation (Hummels, Ishii and Yi, 2001), intra-product specialisation (Arndt, 1997), delocalization (Leamer, 1998), outsourcing (Feenstra and Hanson, 1996), and disintegration (Feenstra, 1998). We will use the term vertical specialisation in this paper.

Vertical specialisation may take the form of either arm's length trading networks or multinational production. The organisational choices involved in establishing international production networks have traditionally recently received little interest in the international economics literature. Recently, a number of important contributions study the organisational aspects of the internationalisation of production (a.o. Grossman and Helpman, 2002; Antras, 2003; Antras and Helpman, 2004; Marin and Verdier, 2003).[1] These models typically focus on the choice between outsourcing and FDI. Outsourcing refers the purchase of intermediate inputs at arm's length, whereas FDI can be used as an alternative in the presence of information imperfections and incomplete contracts. The choice between these two modes of vertical specialisation derives around the role of transaction costs in a world characterised by imperfect information.

So far the literature has concentrated between production in-house, be it abroad or at home, or production outside the firm. In other words, the focus has been on the role of formal ownership as a means to overcome informational frictions. In the property rights literature the role of ownership features most prominently. In the property rights literature ownership confers residual property rights (rights over the joint surplus) to a specific party when the parties involved fail to reach agreement. Ownership thus constitutes a source of power. However, this is not to say that ownership removes informational

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[1] See Antras (2005) and Helpman (2005) for a survey.

frictions completely. In the seminal paper by Grossman and Hart (1986) the endogenous concentration of ownership is the outcome of comparing the benefits and the costs of integration. They emphasise that while integration via the acquisition of ownership shifts the balance of power between agents and may thereby reduce contractual frictions, integration is unlikely to fundamentally change the behaviour of agents. Also within integrated firms agents respond to incentives and consequently contractual frictions are likely to remain. [2] Thus, even within integrated firms, including multinationals, informational frictions may remain.

The cost of integration also features in recent contributions that integrate modern theories of the firm in the international economics literature. Antras (2003) has integrated the Grossman and Hart-approach in the Helpman-Krugman model of international trade. Feenstra and Hanson (2005) provide an analysis of outward processing trade in China also based on the property rights of the firm. Their contribution is particularly interesting because 1) they explicitly distinguish between formal plant ownership and decision control, and 2) provide empirical estimates of their predictions. Finally, Goldstein and Razin (2005) explicitly distinguish between in ownership and control in the context of capital flows. Foreign investors can choose between foreign portfolio investment (FPI) or foreign direct investment (FDI). While FPI grants formal ownership without control, foreign direct investment yields both formal ownership and real control. The choice by investors between both types of investment evolves once again around information asymmetries.

In the present paper we contribute to the existing literature by exploring the role of information imperfections within multinationals between the headquarters and their foreign production affiliates. The central premise on which the paper is built entails that even within multinationals transaction costs are likely to be important. Consequently, multinationals may decide to complement formal ownership with direct management control by sending expatriate managers from the headquarters to their foreign production

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[2] A similar observation provides the started point for Aghion and Tirole (1997) who look at the role of real authority as opposed to formal authority.

units. We present a simple theoretical model based on transaction costs to show that the incentives for direct management control increase in the degree of formal ownership over the overseas subsidiary and decreases in the level of governance costs.

We evaluate these predictions using data on Japanese affiliates in East Asia. Japanese investment in East Asia provides an interesting case for such an analysis as vertical production networks are said to be particularly widespread in this region. We have three main findings. First of all, our empirical findings suggest that contractual frictions within foreign-owned plants play an important role in explaining whether a multinational controls its operations in overseas subsidiaries using local or expatriate management. Second, we find that consistent with the transaction cost approach that ownership and control are complements. The higher the level of ownership by the foreign firm the larger is the rational to complement its ownership with direct management control. Finally, we find that consistent with the transaction cost approach direct control becomes less attractive in the presence of large fixed governance costs.

The remainder of this paper is structured as follows. In Section 2 we argue using a transaction cost approach that there will be a tendency for multinationals to complement formal ownership with direct control. In Section 3 we present the empirical framework, whilst Section 4 briefly discusses the data. In Section 5 we comment on the results. Section 6 concludes.

2. A Transaction Cost Approach to Affiliate Control

The central premise on which the paper is built entails that within multinationals transaction costs are likely to be important. Grossman and Hart (1986) emphasise that integrated production does not change the behaviour of agents, but merely shifts the balance of power in the bargaining process between agents. A local manager of a foreign affiliate may still have to negotiate ex post over the reward for the efforts he already incurred. Uncertainty over the outcome of these negotiations may lead to underinvestment of the efforts by the local manager. A multinational firm may attempt to overcome underinvestment in a foreign affiliate by replacing local management (L) by direct expatriate management from the headquarters (D). Thus, multinationals may complement foreign ownership with direct control when contractual frictions are important.[3]

Consider a multinational firm that consists of a headquarters (H) and foreign subsidiary (S). The headquarters of the multinational is assumed to have the exclusive access to a technology to costlessly convert intermediate inputs into final goods. This technology may, for example, be related to the distribution and marketing of final goods. Revenue is generated by the headquarters by converting high-quality inputs, x, one-to-one into final outputs. Low quality inputs do not add to the quantity of productive inputs produced and can therefore not be used to generate revenue. Furthermore, it is assumed that the revenue function, $R(x)$, is concave and increasing in x.

The subsidiary, S, exclusively produces inputs. The cheapest way to produce inputs is to rely on locally recruited managers (L). Under local management inputs can be produced at unit marginal cost. Alternatively, the headquarters may choose to complement formal ownership of the subsidiary with direct management control by sending over managers from the headquarters (D). However, as expatriate managers are more expensive this will

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[3] Throughout we take the structure of ownership as given. The reason for this is that the data used in the present study only contain multinationals firms. We therefore conduct the analysis of control conditional on the structure of ownership.

raise marginal costs to $w>1$. The advantage of D rather than L is that contractual frictions cannot arise as the agent is also the principal (D is part of H).

Under direct control with expatriate management the optimal level of inputs produced in S is obtained by maximising:

$$\max_{X} \pi_D^H = R(x) - wx \tag{1}$$

Differentiating (1) with respect to x yields that under direct control the optimal level of high-quality inputs produced in S is given by equating marginal revenue to marginal cost:

$$R_X(x) = w \tag{2}$$

Under local management, L is able to produce high quality inputs at unit marginal cost, whereas low quality inputs can be produced at negligible cost. However, in contrast to the relationship between H and D, the relationship between H and L is governed by an incomplete contract. As both H and L are assumed to be boundedly rational they are unable to write an ex ante enforceable contract specifying the purchase of an input of a certain quality for a certain price.[4] The lack of an ex ante enforceable contract creates a classic hold-up problem. The price of an input will only be determined ex post once its quality has been revealed to both parties. H will take advantage of the fact that the efforts of L are unlikely to be fully rewarded outside the firm. H will therefore be tempted to renege on any initial agreement by re-negotiating the price of the inputs produced by L. As L realises that he may not get fully compensated for his efforts he will invest less effort in the production of high-quality components, thereby reducing the joint surplus.

Formally, under local management, L chooses the optimal output of high-quality inputs, x_I^*, at time 0 to maximise its profits at time 1. Also at time 0 H decides on the optimal type of control of the foreign affiliate given the optimal level of high-quality inputs under

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[4] In addition, parties can not sign contracts contingent on the volume of sales of final goods.

L, x_I^*,. At time 1, L and H engage in an ex post efficient Nash bargaining process over the joint surplus. Nash bargaining leaves each party with its outside option plus the bargained share of the ex post gains from trade. As at this point the ex ante effort of L and the quality of the inputs are observed to both parties, costless bargaining will lead to an ex post efficient outcome. The bargained share of the joint surplus accruing to each party depends on their relative bargaining power, which is represented by *β* for H and *1-β* for L.

In order to calculate the payoffs to each agent we need to define the outside options that each agent will receive if the bargaining breaks down. The respective outside options are given by the structure of ownership, which drives the allocation of residual property rights once the bargaining process breaks down. Having full ownership implies that upon break down of the bargaining process one will be able to seize all the inputs that have been produced in S. For example, if H has full ownership it will be able seize produced inputs and sell them on world markets, although a proportion $0<\delta^H<1$ will be lost in the process. The payoff for H after break down is therefore equal to $(1-\delta^H)R(x)$. As H has formal ownership over the inputs produced and L cannot get credit for his efforts towards the production of inputs outside the firm, the outside option of the local manager is zero. H will act on this information in the bargaining process, which greatly weakens the bargaining position of L. If the on the other extreme L holds full ownership it may sell the inputs, but for a lower price as it lacks access to distribution and marketing networks without H and a proportion $0<\delta^L<1$ will be lost. Its revenue is given by $(1-\delta^L)R(x)$ and H gets zero. Typically, however both L and H will share the ownership of the subsidiary. The ownership share of H is given by $\omega\,(0\leq\omega\leq1)$.

The total ex post payoffs of H and L if they trade are then given by:

$$\pi_I^H = (1-\delta^H)\omega R(x) + \beta\big[(\delta^H - \delta^L)\omega + \delta^L\big]R(x) \tag{3.1}$$

$$\pi_I^L = (1-\delta^L)(1-\omega)R(x) + (1-\beta)\big[(\delta^H - \delta^L)\omega + \delta^L\big]R(x) \tag{3.2}$$

The local manager chooses its level of effort non-cooperatively at time 0 by maximising $\pi_I^L - x$ which yields:

$$\max_x \pi_I^L(x) = (1-\delta^L)(1-\omega)R(x) + (1-\beta)\big[(\delta^H - \delta^L)\omega + \delta^L\big]R(x) - x \qquad (4)$$

Differentiating with respect to x yields the following condition for the optimal level of x_I^*:

$$(1-\delta^L)(1-\omega)R_X(x) + (1-\beta)\big[(\delta^H - \delta^L)\omega + \delta^L\big]R_X(x) = 1 \qquad (5)$$

Thus, the optimal level of investment x_I^* depends on i) the local manager's outside option, and, ii) the way the joint surplus is distributed between the two parties. The former depends on the ease with which the local manager can sell his efforts to third parties (asset specificity) and his ownership share. The latter depends on his bargaining power β, the degree of asset-specificity δ^L and δ^H, and the ownership structure ω. The larger is β the weaker will be the bargaining position of the local manager and the more severe the level of underinvestment. The weaker the outside option of H the stronger will be the bargaining position of the local manager and less pronounced the incentive problem. The reverse is true the weaker the outside option of the local manager. Finally, the larger the ownership share of H the weaker will be the bargaining power of the local manager.[5]

Given x_I^* the ex post division can be straightforwardly derived. Even though the outcomes are ex post efficient under any regime of control, the quantity of high-quality produced is inefficient. Both would gain from cooperation at time 0. However, even without cooperation it would still make sense for L to pay H a lump-sum transfer at time 0 that guarantees that H will choose the control regime that maximises the surplus for

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[5] While taking formal ownership reduces the hold-up problems it may create disincentives to local managers as residual profits accrue to the foreign owner when the bargaining breaks down. This effectively underlies the insight in Antras (2003) that integration leads to relatively more underinvestment in L than outsourcing (labour is only put in by S).

both parties. Thus, the ex ante division of the surplus may differ from the ex post division of the surplus.[6] Using this insight greatly facilitates the determination of the optimal regime of control. At time 0 H maximises the joint surplus which is given by:

$$\pi_I^H = R(x_I^*) - x_I^* \tag{6}$$

H will choose direct control under expatriate management when:

$$\Omega = \pi_D^H - \pi_I^H = R(x_D^*) - R(x_I^*) + x_I^* - wx_D^* > 0 \tag{7}$$

We will now investigate how Ω changes with respect to governance costs, w, and ownership, ω. A positive relationship implies that direct control becomes more likely, whereas a negative relationship implies that local management becomes more likely. By the envelope theorem:

$$\frac{\partial \Omega}{\partial w} = -x_D^* < 0 \tag{8a}$$

Relative profits are decreasing in the additional governance cost associated with expatriate management. Hence, an increase in the additional governance cost associated with direct control will make local management control more attractive.

$$\frac{\partial \Omega}{\partial \omega} = \frac{\partial \pi}{\partial x_I} \frac{\partial x_I}{\partial \omega} = -[R_X(x_I^*) - 1]\frac{\partial x_I}{\partial \omega} > 0 \tag{8b}$$

Formal ownership by H of S increases the hold-up problem under local management and therefore lowers profits. An increase in formal ownership by H will thus normally make direct management control more attractive.[7]

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[6] The transfer paid by L can be any amount smaller than his share of the joint surplus that ensures that H chooses the control regime that maximises the joint surplus.

[7] Effectively, we take the structure of ownership as given. Implicitly however we think of the allocation of ownership as a two-sided hold-up problem as in Grossman and Hart (1986) and Antras (2003).

3. Empirical Framework

We now evaluate the binary choice for a foreign owner of local affiliate i of taking direct control (y=1) or using local management (y=0) by specifying the probability that y=1 conditional on a vector x.

$$P(y = 1 | X) \tag{9}$$

The central premise of this paper is that formal ownership does not fully remove contractual frictions between the owner and its foreign subsidiary. Owners therefore have to decide whether or not they wish to complement formal ownership with direct management control. In order to evaluate the assertion that contractual frictions matter within existing multinationals we experiment with three measures for *contractual frictions* (CF). First, we include a variable that refers to the average number of days needed to enforce a contract in the host country. The extent of the hold-up problem between H and S may further be expected to depend on the relative ease with which a local manager may be controlled from the home country. Second, we would expect the severity of the hold-up problem to increase in the distance between H and S. Distance and the difficulty to enforce contracts are both expected to increase the probability of observing direct control conditional on ownership. Finally, we include GDP per capita as a measure for development. To the extent that the level of economic development is an important indicator of the quality of production GDP per capita may give some indication of the potential for hold-up problems.

The key prediction of the transaction cost approach to affiliate control as put forward in Section 2 entails that that ownership and control are complements, i.e. the larger the degree of formal ownership the more attractive it will be for the foreign owner to complement ownership with direct management control. Intuitively, as ownership confers power to the owner in the ex post bargaining game, increased formal ownership by H over a local plant reduces the bargaining position of the local manager. This in turn

reduces the incentives of the local manager to the produce high quality inputs. In order evaluate our central assertion it is therefore important to control for the structure of ownership. We thus complement our model with two *ownership variables* (O). The share of ownership by H is given by O^H. This refers to the main Japanese owner. As many affiliates have multiple owners we also include the share of ownership by L, O^L.

The transaction cost approach further suggests that governance costs matter. While we do not directly observe governance cost we observe a number of factors that are likely to be related to *governance costs* (G). First of all, governance costs are expected to have some fixed cost element which gives rise to economies of scale. Consequently, we expect that affiliate size increases the probability that an affiliate is under direct control and its marginal probability to decrease in affiliate size. We measure affiliate size by the number of employees in the affiliate. Governance costs further increase in the wage of expatriate managers relative to local managers. To the extent that GDP per capita can be considered an appropriate measure for the wage of managers in a certain country we would expect the probability of observing direct control to decrease in GDP per capita. Given that we cannot be sure whether GDP per capita captures wage costs or the quality/sophistication of production the ex ante sign is ambiguous.

Finally, we control in all regressions for the age of the affiliate and age square as it seems plausible that the need for expatriate control will be larger in the years following the acquisition of a production plant. While intuitive this does not follow from the transaction cost approach to affiliate control. We also include a full set of sector dummies to control for sector fixed effects. We refer to these *additional controls* by X. Thus we estimate the following model with probit.

$$P(y = 1 | X) = \alpha_1 CF + \alpha_2 O + \alpha_3 G + \alpha_4 X + \varepsilon_{ij} \tag{9'}$$

4. Data

We will empirically evaluate the choice of control in foreign affiliates using data on Japanese multinationals in East Asia. Data on Japanese affiliates abroad are obtained from the Overseas Japanese Companies Dataset published by Toyo Keizei in 2004. Toyo Keizei is a private company. Most of the information is obtained from an original survey conducted annually by Toyo Keizai.[8] The Overseas Japanese Companies Dataset has two components. First, it collects information on the foreign direct investments of Japanese firms. For these investments it records the year, the country, the industry as well as some qualitative information on the nature and the objective of the investment. An interesting feature of dataset is that it allow us to distinguish between production and distribution affiliates.[9] The second component consists of cross-sectional information across Japanese affiliates abroad for the year 2004. The information included consists of the share of ownership held by Japanese firms and that held by a firm in the host country, as well as information on affiliate employment and the number of Japanese employees. The remainder of the data are obtained from the World Development Indicators dataset. Summary statistics can be found in Table 1.

Table 1: Summary Statistics

Variable name	N	Mean	Std. Dev.	Min	Max
Ownership, JPN	4083	76.96	26.92	0.10	100.00
Ownership, Local	4083	17.16	24.05	0.00	99.70
Days to Enforce Contract	4083	277.87	138.08	50.00	570.00
Distance	4083	3.46	1.64	1.16	9.58
GDP per capita	4083	5.11	7.39	0.33	23.64
Affiliate Employment	4083	287.54	731.46	1.00	16348.00
Age	4083	11.55	8.40	1.00	71.00

For our analysis we limit ourselves to production affiliates in manufacturing that are located in East Asia. We further require that the main Japanese owner has at least a 10% ownership stake in the affiliate. After cleaning, our dataset comprises 3381 affiliates. Of

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[8] In 2003, they sent out questionnaires by mail to 5951 Japanese multinational firms. Its response rate was 56%. In addition, they surveyed firms through telephone interviews. It contains information on nearly 20000 affiliates of Japanese multinationals.

[9] More precisely, each sector is included separately for manufacture and wholesale activities. Consequently, it is assumed that, for example, the manufacturing of 'machinery' refers to a production affiliate and affiliates in the wholesale on 'machinery' to distribution affiliates.

those affiliates the 87% appears to be under direct control which may suggest that ownership is typically deemed insufficient to overcome contractual frictions. However, other explanations may also be possible.

Contractual frictions are likely to be much more important in industries where quality is important. Textiles and clothing is a classic example of an industry where vertical specialisation is very important and quality control is relatively unimportant. Machinery and transport is also a classical example of an industry where vertical specialisation is important, but one where the role of quality control is considered to be quite important. The descriptive statistics in Table 2 confirm that expatriate control is likely to be motivated by the desire to overcome contractual frictions that may arise when monitoring and quality control are important.

Table 2: Share of Foreign Affiliates under Direct Control

	N	Mean	Std. Dev.
All manufacturing	3381	0.871	0.335
- Textiles and Clothing	338	0.843	0.364
- Machinery and Transport	1544	0.898	0.302

5. Results

The results are reported in Table 3. In the first two columns we report a benchmark specification with only the key variables of interest. In the last two columns we extend the benchmark model to control for size and age. While these variables do not follow directly from the transaction cost approach to affiliate control the are likely to capture alternative considerations in deciding upon the optimal type of affiliate control. The results suggest that this indeed the case and we therefore concentrate on the extended specifications in our discussion below.

The central hypothesis in this paper is that even within multinationals contractual frictions are likely to be important. This is confirmed by our empirical results.

First, the difficulty with which contracts are enforced in the host country is has a positive and statistically significant effect on the probability of exerting direct management control. Furthermore, the probability of using expatriate management in foreign affiliates increases in the distance between Japan and the host country which reflects the ability to monitor production in the foreign affiliate from the headquarters. Finally, to the extent that GDP per capita might reveal something about the importance of quality control in affiliate production and therefore about the potential of hold-up problems on the choice of control. Alternatively, GDP per capita is likely to be related to the wage level in a country and may thereby capture some of the additional cost of using expatriate management instead of local management. The results indicate that GDP per capita has a positive and significant on the probability to exert direct control. We interpret this as evidence that the GDP per capita captures the level of sophistication of production in the affiliate and thereby the need for quality control. This is somewhat similar to previous

findings by Antras (2003) for the US in his analysis of the choice between FDI and international outsourcing. He finds that the share of intra-firm imports over total imports increases with the capital-abundance of the host countries.

In sum, these results suggest that transaction cost considerations are likely to affect the choice between local and expatriate management in production plants that are part of a multinational. In the FDI literature it is typically assumed that an ownership share in excess of 10% in a foreign affiliate reflects the intention by the owner to exert management control. The results obtained in the present paper suggest that formal ownership may be insufficient to do so effectively in the presence of contractual frictions between the headquarters and the local management. We will now investigate the role of ownership in more detail.

According to our model residual contractual frictions upon acquiring ownership provide an incentive to complement ownership with direct management control. This does not necessarily mean that formal ownership increases contractual frictions, but does suggest that the higher level of ownership the more attractive it will be to complement formal ownership with expatriate control. In line with the prediction of our model we find that foreign ownership increases the probability of observing direct management control. Moreover, the larger host country ownership the less need there is for the foreign firm to exert direct control. As many affiliates have multiple owners (>2) this does not follow automatically.

Finally, the model suggests that the additional governance costs associated with direct control also affect the choice between direct and local control. Unfortunately, we do not observe these costs directly. However, it seems plausible that governance costs have a fixed cost character. Consequently, we would expect the probability of observing direct control to increase in the size of the affiliate. As expected we find that the probability of exerting direct control increases in firm size and falls in firm size squared.

Table 3: Results for Manufacturing

	Probit			
	-1	-2	-3	-4
Ownership, JPN	0.0026	0.0015	0.0022	0.0014
	(0.0002)	(0.0003)	(0.0002)	(0.0003)
	***	***	***	***
Ownership, Local		-0.0014		-0.001
		(0.0003)		(0.0066)
		***		***
Log Days to Enforce Contract	0.0788	0.0746	0.0714	0.0671
	(0.0256)	(0.0249)	(0.0232)	(0.0230)
	***	***	***	***
Log Distance	0.0327	0.0291	0.0377	0.0344
	(0.0187)	(0.0183)	(0.0168)	(0.0166)
	*		**	**
Log GDP per capita	0.0162	0.0144	0.031	0.0277
	(0.0136)	(0.0134)	(0.0127)	(0.0127)
			**	**
Affiliate Employment			0.0001	0.0001
			(0.0000)	(0.0000)
			***	***
Affiliate Employment squared			-0.0000	-0.0000
			(0.0000)	(0.0000)
			***	***
Age			-0.0081	-0.0074
			(0.0022)	(0.0022)
			***	***
Age squared			0.0001	0.0001
			(0.0001)	(0.0001)
			**	**
Observations	3038	3038	3038	3038
Pseudo R-squared	0.14	0.15	0.17	0.18
Log Likelihood	-980.24	-971.34	-945.92	-940.30

Notes: Reported coefficients are the marginal effects of the variable in question. Robust standard errors are reported in parentheses. * denotes statistical significance at the 10% level; ** denotes statistical significance at the 5% level; *** denotes statistical significance at the 1% level. All specifications include sector-specific fixed effects.

We now re-estimate the model for two sectors, textiles and machinery, that have become classic examples of vertically specialised industries. However, these sectors are likely to differ in the level of sophistication of the production process in foreign affiliates and therefore in the potential for hold-up problems. The argument here is related to that in Antras (2003) where the choice between FDI and international outsourcing depends on the skill-intensity of the industry. He finds that the share of intra-firm imports over total imports increases in the capital-intensity of the industry. Reasoning analogously, we would expect that the incentives for direct affiliate control are stronger in the relatively capital-intensive machinery industry than in the textiles industry.

The results provide some evidence that foreign affiliates engaged in the production of machinery are more likely to be under direct control than affiliates that produce textiles. Days to enforce a contract is positive and weakly significant in one of the specifications for machinery, while insignificant in all specifications for textiles. Distance may also play a positive role for machinery while its effect is negative and insignificant for textiles. However, it is clear that re-estimating the model for specific industries comes at a cost by greatly reducing the number of observations. These results should therefore be interpreted with caution.

Table 4: Results by Sector

	Probit			
	Textiles	Machinery	Textiles	Machinery
Ownership, JPN	0.0027	0.0022	0.0027	0.0017
	(0.0007)	(0.0002)	(0.0007)	(0.0002)
	***	***	***	***
Log Days to Enforce Contract	0.1419	0.0630	0.1317	0.0460
	(0.2112)	(0.0324)	(0.2012)	(0.0280)
		*		
Log Distance	-0.0150	0.0293	-0.0211	0.0349
	(0.1604)	(0.0233)	(0.1560)	(0.0198)
				*
Log GDP per capita	0.0315	0.0073	0.0221	0.0190
	(0.0808)	(0.0165)	(0.0762)	(0.0143)
Affiliate Employment			0.0001	0.0001
			(0.0001)	(0.0000)
				***
Affiliate Employment squared			-0.0000	-0.0000
			(0.0000)	(0.0000)
				***
Age			-0.0134	-0.0084
			(0.0093)	(0.0026)
				***
Age squared			0.0004	0.0002
			(0.0003)	(0.0001)
				**
Observations	321	1374	321	1374
Pseudo R-squared	0.08	0.17	0.10	0.21
Log Likelihood	-124.43	-360.77	-122.42	-341.91

Notes: Reported coefficients are the marginal effects of the variable in question. Robust standard errors are reported in parentheses. * denotes statistical significance at the 10% level; ** denotes statistical significance at the 5% level; *** denotes statistical significance at the 1% level.

6. Conclusions

In this paper we analysed the role of transaction costs within multinationals for management control in overseas affiliates. The central premise on which the paper is built entails that even within multinationals transaction costs are likely to be important. Consequently, multinationals may decide to complement formal ownership with direct management control by sending over managers from the headquarters. We develop a simple model based on transaction costs to show that the incentives for direct management control increase in the level of formal ownership of the overseas subsidiary and decrease in the level of additional governance costs.

We evaluated these predictions using data on Japanese affiliates in East Asia. We have three main findings. First of all, our empirical findings suggest that contractual frictions within foreign-owned plants play an important role in explaining whether a multinational controls its operations in overseas subsidiaries using local or expatriate management. Second, we find that consistent with the transaction cost approach that ownership and control are complements. The higher the level of ownership by the foreign firm the larger is the rational to complement its ownership with direct management control. Finally, we find that consistent with the transaction cost approach direct control becomes less attractive in the presence of large fixed governance costs.

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