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The transfer of workers within multinationals and ownership of foreign affiliates[☆]

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HIGHLIGHTS

- We exploit the variation of ownership shares across foreign affiliates of the same multinational firm.
- We confirm that parent ownership is strongly correlated with the headquarter intangible asset at the very micro-level.
- A parent can have varying levels of ownership across its affiliates depending on the headquarter intangible asset.
- The transferred workers from the parent to the affiliate are used as a novel proxy for the headquarter intangible asset.

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ABSTRACT

We study the variation in ownership shares across affiliates of the same multinational firm. Using the micro-level data on foreign affiliates of South Korean multinationals, we construct a proxy for the headquarter intangible asset using transferred Korean workers from the parent to the affiliate. Our results show a strong relationship with the parent ownership share even after controlling for the parent fixed effect. Our empirical evidence thus extends support for the theory on multinational firm boundaries at the micro-level.

1. Introduction

The theory on firm boundaries suggests that the party whose contribution is more important for the value of the relationship should have ownership if the contracts on contribution are incomplete by nature. In other words, the ownership provided to the party becomes an economic incentive to put forth a greater level of such contribution. In the context of foreign direct investment, if the contribution of the headquarter intangible asset is more important, the parent should choose higher ownership though such ownership may discourage the local partner.[1]

Two empirical challenges emerge in testing the theory. The first challenge is associated with measuring the contribution of the headquarter intangible asset. As Antras and Yeaple (2013) note, "A key question is then: how does one measure headquarter intensity in the data?" (p. 56). The second challenge has to do with the level of data analysis. Aggregate-level studies, such as sector- or even firm-level analyses, miss the variation at the very micro-level, on which the theory is essentially based. In this paper, we use the rich affiliate-level dataset on Korean multinational firms to deal with these challenges. We draw on an unpublished benchmark dataset that links 2881 foreign affiliates with 1903 Korean

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[1] Firm boundaries have been explored by transaction costs or property rights approach, which is built upon incomplete contracts. See Antras and Yeaple (2013) for the survey on multinational firm boundaries.

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parents. The advantage of the affiliate-level dataset is that, unlike previous empirical studies that predicted the same level of ownership across all affiliates in a firm or sector, we are able to exploit the variation of ownership across the affiliates sharing the same parent firm. At the same time, we construct a possibly better proxy for the headquarter intangible asset based on transferred Korean workers from the parent to the foreign affiliate.[2] We hypothesize that more Korean workers are needed in certain affiliates in which communication with the headquarter is very important. Our hypothesis is well-grounded especially given the fact that Korean is not a very common second language, Korea is culturally fairly homogeneous, and also that Korea is culturally and linguistically very different from other countries (Alesina and Wacziarg, 2003; Fearon, 2003; Hofstede et al., 1997; Isphording and Otten, 2013). Accordingly, it is difficult to imagine that headquarters would incur the cost of sending Koreans abroad when production would involve routine operations that do not require intensive communication with the headquarter.[3]

Both ownership and transferred Korean workers' shares out of the total affiliate employment show considerable heterogeneity within the multinational firm. Table 1 provides the overall standard deviations and the proportion of a within-firm component. About half of the standard deviation of both variables comes from within-firm differences across affiliates. We then relate the variation in Korean workers' share with the ownership share. Our analysis with the parent fixed effect controlled shows a strong positive correlation between the share of Koreans and the ownership share. The empirical results are economically meaningful as well. Our point estimates indicate that one standard deviation increase of Korean workers' share is associated with 4.8% increase of ownership.

The endogeneity issue is an important limitation of our study, however. Because a firm's ownership decision and its structure on human resources are simultaneously determined, it is hard to argue exogeneity in a meaningful way at the affiliate-level study. The results in this paper must be interpreted with appropriate caution.

2. Data

We draw on unpublished data from the Korean Export-Import (EXIM) Bank that reports the transactions at the affiliate-level. Our dataset consists of the unbalanced panel from 2007 to 2011. Since more than 90% of affiliates report time-invariant ownership share and the Korean workers' share is relatively time stable, we take the average of all variables over the sample period to a make cross-sectional dataset.[4] We concentrate on manufacturing, which has more complete data than services. The dataset provides general information for the foreign affiliates such as their host country (64 host countries), industry (24 manufacturing industries), sales, purchases, and employment numbers. Critical for our empirical analysis, the dataset includes information on the ownership share, the total employment of each affiliate, and the number of transferred Korean employees, which allows us to construct the share of Korean employees. The ownership share is between 10% and 100%. The EXIM survey provides the arbitrary identification number of the parent firm, which is useful since it allows us to control the parent fixed effect.[5] We refer the reader to Debaere et al. (2013) for further details on the data.

Table 1
Summary statistics.

Variable	Mean	St. Dev.	% Intra-firm St. Dev.
Ownership	91.3	20.2	55%
Korean workers' share	7.8	14.5	48%

% Intra-firm St. Dev. refers to the ratio between the standard deviation within the parent firm and the overall standard deviation.

Table 2
Correlation.

	Korean workers' share	Capital intensity	Labor productivity	Profitability
Korean workers' share	1			
Capital intensity	0.267	1		
Labor productivity	0.413	0.745	1	
Profitability	0.045	0.025	0.073	1

The correlation of Korean workers' share with other variables is statistically significant at the 5% level.

In this paper, we argue that the share of Korean workers is a proxy for the headquarter intangible asset, so we check first the validity of our argument. About 85% of Koreans are active in management positions rather than in production positions. Korean managers are likely to communicate with the headquarter, their main role being the handling of intensive communication. In fact, the data in Table 2 reveal positive correlations between the share of Korean employees and capital intensity, labor productivity, and the rate of operating profit at the affiliate-level. It is clear that intensive communication is more commonly incurred for what should be more capital intensive and productive and the complex goods generating higher profits. These qualifications together with the uniqueness of the Korean language and culture validate our argument.[6]

3. Econometric specification and results

Our dependent variable is the ownership share and the key explanatory variable is the Korean workers' share. Our regression equation can be specified as

$$y_{apic} = D_{ic} + D_p + \beta \left(\frac{L_{SK}}{L}\right)_{apic} + X'_{apic}s + u_{apic},$$

where a represents an affiliate, p parent, i industry, and c host country. Our estimation equation is not a typical linear regression equation, however. Since the dependent variable is the fractional response variable that is bounded by 10% and 100%, the usual linear

2 The literature has used firm- or sector-level proxy variables, such as physical capital intensity (Antras, 2003), investments in specialized equipment (Nunn and Trefler, 2013), R&D intensity (Yeaple, 2006; Nakamura and Xie, 1998), the ratio of sales to tangible assets (Asiedu and Esfahani, 2001), and TFP (Raff et al., 2009, 2012), assuming that the parent with a high level of these variables is likely to contribute more.

3 Debaere et al. (2013) and Cho (2013) also used transferred Korean workers as the proxy for the headquarter intensive non-routine activity and the headquarter intangible capital, respectively.

4 Beside these technical issues, another rationale is that we are mainly interested in the determinants of the ownership share across affiliates, not dynamics of ownership changes within the affiliate.

5 The survey does not report any information on whether FDI is through greenfield or acquisitions (M&A). Thus, we cannot consider the potentially different model specification based on FDI mode. Various sources report Korean greenfield FDI accounts for more than 80% of the total FDI outflow in manufacturing industry, contrary to the worldwide trend of FDI outflow where M&A are dominant.

6 We also link the Korean share with more aggregate-level measure used in the literature. The Korean share is strongly correlated with sectoral non-routineness (Costinot et al., 2011) and per capita income of the host country. Clearly, the headquarter intangible asset is associated with non-routine activities and more complex headquarter intensive goods are produced in high income countries.