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Research Note

Unbundling the effects of host-country institutions on foreign subsidiary survival: A case for subsidiary heterogeneity

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ABSTRACT

This study seeks to advance a fine-grained understanding of the relationship between host-country institutions and foreign subsidiary survival by unbundling institutions into contracting and property rights institutions as well as engaging subsidiary-level heterogeneity. We argue that the adverse effects of weak contracting institutions are stronger for market-seeking subsidiaries. In contrast, we contend that weak property rights institutions are more detrimental to the survival of resource-seeking subsidiaries. Data from a longitudinal, paired-sample design of Japanese foreign subsidiaries operating across 46 countries provide support for these arguments. The results underscore the need to better understand institutional diversity as well as subsidiary heterogeneity.

1. Introduction

The questions of whether and how host-country institutions relate to foreign subsidiary survival have been central to research in the field of international business (IB) and attracted considerable scholarly attention. Research in the area suggests that foreign subsidiaries operating in host countries with weak formal institutions face economic challenges in the forms of contractual (e.g., Blake & Moschieri, 2017; Delios & Henisz, 2000; Getachew & Beamish, 2017) and property rights (e.g., Blake & Moschieri, 2017; Holburn & Zelner, 2010; Jiménez, Luis-Rico, & Benito-Osorio, 2014) hazards. Its contributions notwithstanding, research in the area has paid limited attention to subsidiary heterogeneity (Getachew & Beamish, 2017; Meyer, Li, & Schotter, 2020). In fact, the investment motives literature (e.g., Nachum & Zaheer, 2005; Slangen & Beugelsdijk, 2010) and the subsidiary mandate literature (e.g., Birkinshaw & Hood, 1998) have underscored the strategic and structural heterogeneity among foreign subsidiaries. Such heterogeneity can have implications for which institutional components are more relevant and salient (or less so) (Slangen & Beugelsdijk, 2010). Hence, addressing this limitation is key to developing a more complete understanding of whether and how formal institutions relate to subsidiary survival.

In this paper, we seek to respond to this concern by engaging institutional diversity and subsidiary heterogeneity. Following Acemoglu and Johnson (2005), we unbundle host-country institutions into *contracting institutions* and *property rights institutions* and study their implications for the survival likelihood of market-seeking and resource-seeking subsidiaries. In doing so, we draw on studies pointing to the importance of advancing a more fine-grained understanding of institutions (Acemoglu & Johnson, 2005; Taussig & Delios, 2015) and those suggesting potential for heterogeneity in institutional components and their implications (e.g., Aguilera & Grøgaard, 2019; Jackson & Deeg, 2008). Further, we examine subsidiary heterogeneity by integrating insights from the investment motives literature (e.g., Slangen & Beugelsdijk, 2010) and the subsidiary mandates (charters) literature (e.g., Birkinshaw & Hood, 1998), both of which have advanced our understanding of the substantial differences among foreign subsidiaries (even among those under the same parent). We argue that the variation in the kind of foreign activities which subsidiaries perform has an important implication for the relationship between institutions and foreign subsidiary survival. We empirically examine this argument using longitudinal data on Japanese subsidiaries operating in 46 countries.

Our study makes two important contributions to the literature on subsidiary survival. First, by unbundling host-country institutions into contracting and property rights institutions, this study advances a more nuanced understanding of when and how institutions relate to foreign subsidiary survival. In doing so, it responds to calls to disentangle the concept of institutions and develop a better understanding of institutional diversity (e.g., Aguilera & Grøgaard, 2019; Jackson & Deeg,

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2008). Second, we bring to the fore the issue of subsidiary heterogeneity in investment motivations and examine whether/how such heterogeneity influences the relationship between host-country institutions and foreign subsidiary survival. Whereas extant research on foreign subsidiary survival has examined the effects of various subsidiary-levels factors (e.g., subsidiary size, ownership, and mode of entry) (Benito, 1997; Berry, 2013; Tan & Sousa, 2017), limited attention has been paid to understanding whether and how variations in investment motivations influence subsidiary survival (Getachew & Beamish, 2017; Lee, Chung, & Beamish, 2019). As well, extant research in the area provides mixed evidence. Whereas some research suggests that weak institutions are more detrimental to market-seeking subsidiaries (Brouthers, Gao, & McNicol, 2008), other research finds that weak institutions adversely affect resource-seeking subsidiaries (e.g., Slangen & Beugelsdijk, 2010). Our approach of unbundling institutions and their implications can help in resolving this contradiction.

The following section presents theoretical arguments in support of our hypotheses. We then discuss the research design employed to empirically test the hypotheses and describe the sample and the variables used. Next, we present the research findings and discuss associated implications. We conclude by discussing contributions to theory and practice, highlighting limitations, and indicating promising directions for future research.

2. Theoretical development

2.1. Foreign subsidiary survival

Research on foreign subsidiary survival has documented the implications of institutional-and subsidiary-level factors. The stream of research examining institutional factors leveraged insights mainly from two separate, yet related, literatures on institutions and their influences. The first follows the *institutional voids approach* and examines institutional hazards from a perspective of the lack and/or absence of institutional mechanisms to support market exchanges (e.g., Getachew & Beamish, 2017; Mair & Marti, 2009). The second uses the *political institutions approach* to examine institutional hazards from a perspective of institutions that aim to constrain the behavior and actions of host governments (e.g., Delios & Henisz, 2000; Holburn & Zelner, 2010). Scholars drawing on these approaches have studied contracting institutions and property rights institutions, producing a large body of evidence on how contractual and expropriation hazards affect foreign subsidiary survival (e.g., Blake & Moschieri, 2017; Getachew & Beamish, 2017; Slangen & Beugelsdijk, 2010).

The stream of research examining the implications of subsidiary-level factors for survival has examined the 'how' and more recently the 'why' questions associated with foreign operations. Research on the 'how' questions of foreign operations looked into the implications of entry mode choices (e.g., Gaur & Lu, 2007), establishment mode (e.g., Mata & Portugal, 2000), ownership level (e.g., Gaur & Lu, 2007), and the type of diversification (e.g., Benito, 2005; Chung, Lee, Beamish, Southam, & Nam, 2013; Tan & Sousa, 2017), among others. In contrast, research on the 'why' questions has examined the implications of investment motivations and foreign activities (Lee et al., 2019; Slangen & Beugelsdijk, 2010). In this study, we integrate insights from the streams of research on institutions and subsidiary heterogeneity in investment motivations to develop a better understanding of foreign subsidiary survival.

2.2. Foreign subsidiary heterogeneity

Research in the investment motives literature as well as the subsidiary charter/mandate literature has documented that foreign subsidiaries differ in their underlying motivation and the kinds of value-adding activities they perform (e.g., Birkinshaw & Hood, 1998; Slangen & Beugelsdijk, 2010). Some foreign investments are primarily motivated by the desire to leverage host-country market opportunities (i.e., market-seeking subsidiaries), whereas others aim at accessing host-country resources (i.e., resource-seeking subsidiaries); some perform local production and/or distribution activities, whereas others perform activities that are part of the global value-chain of their respective parent firm (Brouthers et al., 2008; Slangen & Beugelsdijk, 2010). In fact, the underlying motivation of foreign investments are reflected in the type of activities performed by foreign subsidiaries (Caves, 2007; Slangen & Beugelsdijk, 2010).

Market-seeking subsidiaries seek to substitute for exporting and serve the host-country market closely through local production and distribution (Brouthers et al., 2008). Structurally, market-seeking subsidiaries are loosely coupled with both their respective parent firm(s) and sister subsidiaries. In fact, such subsidiaries tend to operate as stand-alone units and perform several value-chain activities—including production, marketing and sales—in the host country (Caves, 2007; Zaheer, 1995). Strategically, market-seeking subsidiaries tend to focus on host (or regional) market opportunities and face higher pressure for local responsiveness (Bartlett & Ghoshal, 1989; Lee et al., 2019). As such, they "…try to maintain close ties with their customers, participate in local networks to obtain local market knowledge, and often rely on local suppliers," (Slangen & Beugelsdijk, 2010, p. 982).

In contrast, resource-seeking subsidiaries result from the desire by the parent firm to internalize factor or intermediate product markets (Caves, 2007). Such subsidiaries seek to extract and/or process host-country resources for eventual transfer and use within the MNE (Caves, 2007; Slangen & Beugelsdijk, 2010). Unlike market-seeking subsidiaries, resource-seeking subsidiaries are often part of the global value-chain of their respective parent(s). Hence, such subsidiaries tend to be tightly coupled with their parent(s) as well as sister subsidiaries and exercise less autonomy than do market-seeking subsidiaries (Caves, 2007; Zaheer, 1995). As well, in contrast to market-seeking subsidiaries, resource-seeking subsidiaries tend to have limited participation in and linkage to local networks (Hansen, Pedersen, & Petersen, 2009). See Table A1 in the Online Appendix for a summary of the key differences between these two types of subsidiaries.

2.3. The effect of contracting institutions

In an influential study, Acemoglu and Johnson (2005) unbundled formal institutions into contracting institutions, which support private contracts (i.e., between firms), and property rights institutions, which constrain expropriation by governments and powerful elites. This classification is a useful departure from the aggregated (clustered) consideration of institutions and is consistent with research in the field of political economy (e.g., Lobsiger & Zahner, 2012). Contracting institutions support exchanges by reducing transaction costs involved in monitoring and enforcing contracts (Santangelo, Meyer, & Jindra, 2016; Williamson, 1985). In host countries where contracting institutions are weak (e.g, weak judiciary and court systems), foreign subsidiaries are likely to face greater levels of contractual hazards (Santangelo et al., 2016). In response, subsidiaries may put in place governance structures to safeguard transactions against the hazards of opportunism (Sartor & Beamish, 2018; Williamson, 1985). In doing so, they incur costs to 'internalize' functions and/or use alternative forms of contracting such as relational contracting (Carson, Madhok, & Wu, 2006). These cost pressures may undermine the net-benefits of operating in the host country.

However, the vulnerability to contractual hazards (and thus the value of contracting institutions) varies among subsidiaries based on the kinds of activities they perform (Smit, Pennings, & Van Bekkum, 2017; Taussig & Delios, 2015). We argue that the adverse effects of weak contracting institutions are stronger for market-seeking subsidiaries. Unlike resource-seeking subsidiaries, which tend to be globally integrated, market-seeking subsidiaries emphasize local responsiveness (Slangen & Beugelsdijk, 2010). To this end, market-seeking subsidiaries

often find it important to work with local suppliers (Caves, 2007; Slangen & Beugelsdijk, 2010). Further, market-seeking subsidiaries tend to enjoy a greater degree of autonomy and operate with lower levels of intra-MNE coordination (Nachum & Zaheer, 2005; Slangen & Beugelsdijk, 2010). Consequently, such subsidiaries tend to form broader local linkages than their counterparts (Jindra, Giroud, & Scott-Kennel, 2009). Such linkages, especially in locations where contracting institutions are weak, can increase exposure to contractual hazards. As a result, market-seeking subsidiaries may incur higher costs associated with preventing and/or resolving contractual hazards.

Relatedly, research suggests that market-seeking subsidiaries tend to exhibit a high degree of contract intensity (Nunn, 2007). More contractually intensive businesses are likely to thrive in locations with strong contracting institutions. Sen and Sinha (2017), for example, noted that businesses with a high degree of contract intensity face substantial contractual hazards when they operate in host-countries with weak contracting institutions. In contrast, those with a low degree of contract intensity fared better in such countries. A related line of research finds the presence of greater resource-seeking activities in countries with less developed contracting institutions (Acemoglu, Johnson, & Mitton, 2009). The above arguments point to the difficulty of operating market-seeking subsidiaries in host countries where institutions supporting/enforcing market contracts are weak. Therefore, we forward the following hypothesis:

Hypothesis 1. *The adverse effects of weak contracting institutions on foreign subsidiary survival are stronger for market-seeking subsidiaries thanforresource-seeking subsidiaries*.

2.4. The effect of property rights institutions

The protection of property rights in foreign locations is an important issue of practical concern for MNEs and their subsidiaries. We define property rights as the rights to use, appropriate returns from, and change the form and/or substance of assets and resources (Foss & Foss, 2005). Property right institutions provide mechanisms to limit government and elite expropriation of assets/resources (Acemoglu & Johnson, 2005; North, 1993). Foreign subsidiaries operating in host countries where property rights institutions are weak face greater levels of expropriation hazards. In such countries, government officials and elites enjoy greater levels of discretion. As a result, government officials find it easier to alter regulations and/or policies in a manner that makes continued operation less desirable. Research in the policy risks literature suggests that, in host-countries with weak property rights institutions, subsidiaries need to live with the threat of the host government altering policies to expropriate profits and/or assets (Henisz, 2000; Holburn & Zelner, 2010). A survey conducted by the Japan External Trade Organization (JETRO) identified property rights hazard as one of the main reasons for the intention of some Japanese firms to either withdraw their business operations from Africa or relocate elsewhere in the continent (JETRO, 2014).

This general observation notwithstanding, we argue that the adverse effects of weak property rights institutions are likely to be stronger for resource-seeking subsidiaries. Resource-seeking investments result from MNE desire to leverage location-specific advantages (i.e., host-country resources) (Slangen & Beugelsdijk, 2010). Such emphasis on host-country resources may lead to the perception of such subsidiaries as exploiting valuable resources and, in some countries, extending imperialistic rule (Chironga, Leke, Lund, & van Wamelen, 2011). As such, in locations of weak property rights institutions, host governments and elites may find it less politically costly (or more beneficial) to take a tougher stance on such subsidiaries. Market-seeking subsidiaries, on the other hand, tend to draw more heavily on firm-specific advantages (FSA) (managerial as well as technological) (Mohr, Batsakis, & Stone, 2018). This distinct characteristic of market-seeking subsidiaries can have at least two related implications. First, the relatively heavier reliance on intangible managerial and technological FSA reduces the incentive for host governments to expropriate assets of such subsidiaries as it is going to be difficult to (a) properly run the business post takeover and (b) extract value out of its intangible FSAs. Second, through their relationships with local actors, market-seeking subsidiaries are likely to generate spillover advantages and facilitate technology transfer (Bucheli & Kim, 2015; Caves, 2007; Jindra et al., 2009). Given the strategic importance of such advantages for host-country economic development, market-seeking subsidiaries are less likely to face value appropriation and expropriation pressures (Bucheli & Kim, 2015; Delios & Henisz, 2000).

Structurally, market-seeking subsidiaries tend to perform most or all of their value-chain activities in the host country. This enhances the host-country legitimacy of such subsidiaries since they would be perceived as contributing more to host-country economic development and industrialization (Bucheli & Kim, 2015). In contrast, resource-seeking subsidiaries tend to be part of their parent's global value chain and perform a limited range of activities in the host country (Nachum & Zaheer, 2005; Slangen & Beugelsdijk, 2010). Such structural disparity is likely to generate important differences in the relationship dynamics between host-country governments and foreign subsidiaries. In an effort to ensure that more of the value from businesses benefits local enterprises, host governments in developing countries may exert pressure over resource-seeking subsidiaries. In fact, many are urging that such subsidiaries engage in more local value creation and downstream value-adding activities (Ellis et al., 2018; Hausmann, Klinger, & Lawrence, 2008; Jindra et al., 2009). Such pressures can adversely affect resource-seeking subsidiaries as they may be required to perform more of the value-chain activities in the host country. The following statement from Nigeria's former Minister of State for Petroleum Resource captures the essence of such challenges facing resource-seeking subsidiaries:

> We would get to a point where Nigeria, definitely, would be a major supplier of refined petroleum products. It just has to happen. Nothing else makes sense…. We are also saying directly to oil companies that a time would also come when we would not be open to see them move around all the crude oil they produce in Nigeria…. We will like to see integrated refining and integrated processing here. It gives us more jobs and creates more investments (Okoromadu, 2018).

In fact, governments in other countries such as Tanzania, Bangladesh, Philippines, and Gabon have directly or indirectly pressured foreign subsidiaries into performing more value-adding activities locally (Fliess, Idsardi, & Rossouw, 2017). Put together, weak property rights institutions are likely to be more detrimental to the survival of resource-seeking subsidiaries. Formally:

Hypothesis 2. *The adverse effectsof weak property rights institutions on foreign subsidiary survival*are*stronger for resource-seeking subsidiaries than for market-seeking subsidiaries*.

3. Method

3.1. Data and sample

We tested our hypotheses using longitudinal data of Japanese foreign investments across a number of host countries. We obtained subsidiary-level data from the *Kaigai Shinshutsu Kigyou Souran* (*Japan Overseas Investment*) directory. The directory, based on an annual survey of general managers of Japanese foreign subsidiaries, is suitable for testing our hypotheses for several reasons. First, the longitudinal nature of the data increases confidence in the results and arguments (Bono & McNamara, 2011). Second, the comprehensive coverage of Japanese foreign investment across host countries with disparate levels of contracting and property rights institutions provides an ideal context. Third, the focus on a single home country (i.e., Japan) helps control for empirical complications arising from home-country effects. We obtained relevant

parent-level data from the *Nikkei Economic Electronic Databank System* dataset, which reports information on firms listed on the Tokyo Stock Exchange.

Following Beamish and Inkpen (1998), we limited our sample to subsidiaries with a minimum of 20 employees to ensure that our focus would be on FDIs with considerable host-country investments. Per Woodcock, Beamish, and Makino (1994), subsidiaries require at least two years to stabilize. Thus, we removed from the sample subsidiaries with less than two years of operation. To address a potential self-selection bias in our sample, we employed the Coarsened Exact Matching procedure (CEM), which is better than other commonly used matching methods in reducing imbalance, model dependence, and statistical bias (Iacus, King, & Porro, 2011). Our final sample includes 374 Japanese subsidiaries operating in countries with contrasting levels of institutional development over the period of 1991−2017.[1] See Table A2 in the Online Appendix for results from the *t*-test of means and probit regression used to examine the success of the CEM procedure.

3.2. Measure

3.2.1. Dependent variable

Foreign subsidiary survival is measured by an indicator, which takes a value of 0 if subsidiary *i* survives at time *t* and 1 otherwise. Following previous studies that used the same dataset, a subsidiary is considered to have survived when its records are available in the dataset (Delios & Beamish, 2001). The data we use for the study are published on a yearly basis, so this is our metric for time.

3.2.2. Independent variables

We measured contracting institutions using the index of *enforcing contracts* from World Bank's data on doing business. The index constitutes the *number of procedures* required, the *time in days* needed, and *the cost incurred* to enforce market contracts. The composite index (i.e., *enforcing contracts*) can assume values ranging from zero to 100, higher values indicating stronger institutions. This index provides annual data on how complex it is for foreign subsidiaries to resolve market contracts in a given host country (Acemoglu & Johnson, 2005) and has been frequently used in previous studies (e.g., Acemoglu & Johnson, 2005; Lobsiger & Zahner, 2012).

To determine the strength of property rights institutions facing foreign subsidiaries in their respective host countries, we used the POLCON measure of political constraints that captures the distribution of power across the legislative, executive, and judicial branches of government and provides an estimate of how difficult it is for the host government to expropriate subsidiary revenue and assets (Henisz, 2000). In the POLCON measure, a value of zero indicates the absence of constraints and thus the weakest property rights institutions, whereas a value of 1 represents complete constraints and thus the strongest property rights institutions. We multiplied the POLCON values by 100 to align this measure with the contract institutions measure and facilitate interpretation of findings. The POLCON measure varies yearly.[2] The POLCON measure is widely used to capture the extent of constraints (limits) on a host-government's power to act against the interests of foreign subsidiaries (e.g., Holburn & Zelner, 2010; Macher & Mayo, 2015).

We developed the subsidiary motivation variable out of the *Japan Overseas Investment* directory, which provides data on subsidiary investment purposes as reported by their respective general managers. Drawing on extant research in the investment motives literature, we classified as market-seeking subsidiaries those reporting purposes of "local market expansion", "construction of international distribution network", and "building new business" and as resource-seeking subsidiaries those reporting purposes of "resource & material", "labor seeking", and "reverse import to Japan" (Caves, 2007; Dunning & Lundan, 2008; Slangen & Beugelsdijk, 2010). [3] Consequently, we developed a dichotomous variable, which assumes a value of '1' for market-seeking subsidiaries and '0' for resource-seeking subsidiaries. Our use of primary, self-reported data overcomes the limitations of indirect measures (such as those based on export activity) used in prior research (e.g., Nachum & Zaheer, 2005). As well, the measure and approach we used here are consistent with recent research in the area (e.g., Getachew & Beamish, 2017; Jiang, Holburn, & Beamish, 2017).

3.2.3. Control variables

We included several control variables to account for factors that can influence subsidiary survival. We controlled for subsidiary size using the natural log of the number of subsidiary employees. The introduction of this variable can serve to account for the effects of such subsidiary-level features as *economies of scale* and *position/importance within the MNE network* (Yang, Mudambi, & Meyer, 2008). We also controlled for subsidiary age to account for the effects of subsidiary experience (Carroll & Delacroix, 1982). We also accounted for the effects of foreign ownership level, measured as the combined percentage of equity ownership of the foreign partners in the focal subsidiary. To control for the potential effects of expatriate deployment (Tan & Mahoney, 2006), we included an expatriate ratio variable, measured as a ratio of the number of expatriates to the total number of employees in the focal subsidiary. We controlled for the potential effect of subsidiary performance using the natural log of subsidiary productivity, measured as a ratio of subsidiary sales to the number of employees. This is a time-variant variable. Further, we included in our models the number of Japanese parents to account for its potential effects on subsidiary survival through, for example, managerial complexity (Makino & Beamish, 1998).

Larger MNEs are likely to enjoy greater flexibility in reallocating their resources across a broader portfolio of subsidiaries (Delios & Beamish, 2001). As such, we controlled for the potential effects of such flexibility by introducing a parent size variable for which we used the natural log of the combined number of employees of the parent firm(s) as a proxy. We also introduced a parent-level research and development (R&D) intensity variable, as intangible assets of the parent firm(s) can influence survival. This variable, measured as the ratio of R&D expenditures to total sales of the parent firm(s), is time-variant. We also controlled for the effect of host-country experience using the natural log of the total number of years of experience in the host country by the parent firm(s) prior to the establishment of a focal subsidiary (Delios & Beamish, 2001).

We also controlled for host-country population size as it may determine attractiveness to market-seeking subsidiaries, which focus on host-country market (Brouthers et al., 2008). We also introduced to our models the level of host-country total factor productivity as it may influence subsidiary survival. Further, we controlled for host-country real

[1] Angola, Botswana, Burkina Faso, Cameroon, Côte d'Ivoire, Ethiopia, Kenya, Liberia, Malawi, Mali, Mauritius, Mozambique, Nigeria, Senegal, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe, Madagascar, Cambodia, Laos, Taiwan, Myanmar, Bangladesh, Nepal, Korea, Hong Kong, Singapore, Norway, Sweden, United Kingdom, Ireland, Netherlands, Belgium, France, Germany, Switzerland, Spain, Italy, Czech Republic, Greece, Canada, USA, & Australia.

[2] The latest version of the POLCON dataset provides yearly data up to 2016. Given that our study period also includes 2017, we used the 2016 data for 2017 as well.

[3] When the reported purposes include "preferential treatment by local government", "export to third countries", and "follow customers, suppliers, and related companies", we consulted secondary sources to determine subsidiary motivation (i.e., market-seeking or resource-seeking). We excluded cases reporting purposes other than those mentioned in this paper such as "collection of information, knowledge seeking, royalty" and "research, development, product planning".

GDP levels. We obtained annual data on population, total factor productivity, and real GDP levels from the World Bank. We log transformed these variables. As well, we used sector and period fixed effects to account for the effects of sector and time effects on subsidiary survival. We achieved these by introducing ten sector dummies and four period dummies. Further, to account for the potential implications of home and host country relations for subsidiary survival, we controlled for economic relations and political relations between home and host countries. We controlled for economic relations between home and host country using the number of Japanese foreign subsidiaries operating in the host country. To account for the effect of political relations between home and host country, we introduced a political relations variable, which is measured using the alignment of votes in the United Nations (UN) General Assembly between Japan (i.e., the home country) and the host country (Gartzke, 2008). Both the economic and political relations variables are time variant.

3.3. Modeling procedure

We used the extended Cox proportional hazards model, which accommodates for the time-variant nature of some of the covariates we used (Kleinbaum & Klein, 2005). This analytical approach examines the relationship of the hazard distribution to covariates and develops a hazard function to predict the probability that a subsidiary experience an event (i.e., divestment), given that it has survived to time *t*. The approach is superior to logit or probit models as it (a) enables us to examine subsidiary survival over time and (b) corrects for problems associated with right-censoring of subsidiaries which have survived the study period but may fail to survive later (Singer & Willett, 2003). Since subsidiary age data is included in our models, left truncation was not a series concern (Guo, 1993). To account for the effects of unobserved heterogeneity and deal with the multilevel data structure, we used the *strata* option in the *stcox* estimation in STATA version 15. Consequently, we specified baseline hazard for each stratum of sectors and periods.

4. Results

4.1. Main findings

Table 1 shows descriptive statistics and correlation among the variables. We ran collinearity diagnostics and computed variance inflation factors (VIFs). The calculated VIFs for our variables of interest were well below 5, suggesting that multicollinearity was not an issue.

Table 2 reports results from the extended Cox proportional hazards models. To estimate regression parameters, we used the partial likelihood procedure. We followed the estimation procedure outlined in Singer and Willett (2003) and first fitted the full model (i.e., Model 7), which includes all the covariates and interactions. We then tested for the significance by dropping one or more variables from the full model and comparing the log-likelihood of each nested model to that of the full model. Tests based on Schoenfeld residuals suggest that the proportional-hazards assumption was not violated ($\chi 2 = 24.19$, $\rho = 0.72$).

The positive, statistically significant coefficient of the interaction term between contracting institutions and subsidiary activity variables provides support for Hypothesis 1 ($\beta = 0.019$, $\rho < 0.05$, Model 7 in Table 2), which states that weak contracting institutions are more detrimental to the survival of market-seeking subsidiaries. The coefficient corresponds to a hazard ratio (i.e., e^{β}) of 1.02, which suggests that the adverse effect of weak contracting institutions is stronger for market-seeking subsidiaries. We plot in Fig. 1 the interaction effect to facilitate interpretation and show the practical significance of our results. The plots in Fig. 1**a** and **b** depict the survival probabilities of market-seeking and resource-seeking subsidiaries in host countries with contracting institutions levels of at most 44 (i.e., 1SD below the mean) and at least

Table 1
Correlations and descriptive statistics.

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
(1) Subsidiary size	3.69	1.99																	
(2) Subsidiary age	17.42	12.62	0.16																
(3) Ownership ratio	57.91	41.85	−0.28	0.00															
(4) Expat ratio	0.11	0.20	−0.43	−0.14	0.22														
(5) Subsidiary performance	3.83	2.15	0.29	−0.13	−0.05	−0.03													
(6) Subsidiary motivation	0.47	0.50	0.01	−0.08	0.01	0.04	0.01												
(7) Parent R&D intensity	0.04	0.03	−0.04	−0.05	0.08	0.04	0.04	0.02											
(8) Parent size	9.27	1.83	0.31	0.12	−0.20	−0.22	0.10	−0.05	−0.08										
(9) Foreign parents	1.25	0.72	0.10	−0.03	−0.17	−0.06	−0.02	−0.00	0.04	−0.12									
(10) Host-country experience	1.62	2.34	−0.01	−0.15	−0.20	−0.05	0.17	0.01	−0.01	0.31	0.01								
(11) Population	3.55	1.43	0.08	−0.01	−0.20	−0.08	0.08	−0.01	0.00	−0.06	0.08	0.14							
(12) Real GDP	13.05	2.13	0.04	0.00	−0.17	−0.01	0.29	−0.01	−0.05	−0.04	0.12	0.33	0.68						
(13) Total factor productivity	0.94	0.09	−0.05	−0.04	0.04	0.01	0.09	0.01	−0.01	−0.10	−0.02	−0.00	−0.02	0.09					
(14) Political relations	0.49	0.34	−0.04	0.04	0.15	−0.00	−0.31	0.01	0.06	0.04	−0.14	−0.39	−0.64	−0.74	−0.04				
(15) Economic relations	19.17	14.48	−0.02	−0.03	−0.06	−0.00	0.14	0.02	0.01	−0.04	0.12	0.26	0.65	0.73	−0.19	−0.68			
(16) Contracting institutions	62.97	18.46	−0.00	0.08	0.11	0.03	0.32	−0.04	−0.01	0.06	−0.03	0.15	−0.13	0.17	−0.05	−0.21	0.10		
(17) Property right institutions	35.03	19.99	−0.02	0.09	−0.06	0.06	0.19	−0.05	0.09	−0.03	−0.06	0.06	0.23	0.16	−0.09	−0.18	0.19	0.38	
(18) Survival	0.96	0.20	0.05	−0.03	0.05	−0.01	0.08	−0.01	−0.02	−0.02	−0.00	−0.01	0.02	0.01	−0.01	−0.01	−0.00	0.05	0.08

Correlation coefficients greater or equal to |0.05| are significant at a 5 percent level.

Table 2
Results from Cox proportional hazard models.

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Subsidiary size	−0.188***	−0.165***	−0.172***	−0.157***	−0.159***	−0.153**	−0.156**
	(0.048)	(0.048)	(0.048)	(0.049)	(0.048)	(0.050)	(0.049)
Subsidiary age	−0.083***	−0.081***	−0.081***	−0.079***	−0.078***	−0.081***	−0.080***
	(0.011)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)
Ownership ratio	−0.011***	−0.010***	−0.013***	−0.012***	−0.011***	−0.011***	−0.011***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Expat ratio	−0.047	0.007	−0.218	−0.178	−0.176(0.429)	−0.285(0.432)	−0.229
	(0.426)	(0.413)	(0.437)	(0.430)			(0.432)
Subsidiary performance	−0.190***	−0.172***	−0.152***	−0.148***	−0.146***	−0.143**	−0.140***
	(0.041)	(0.043)	(0.041)	(0.042)	(0.042)	(0.043)	(0.043)
Subsidiary motivation	−0.178	−0.212	0.074	−0.106	−1.125†	−0.672	−0.367
	(0.222)	(0.227)	(0.227)	(0.230)	(0.602)	(0.438)	(0.676)
Parent R&D intensity	6.988**	7.954***	8.077***	8.242***	7.979***	8.272***	8.051***
	(2.028)	(2.093)	(2.072)	(2.058)	(2.126)	(2.017)	(2.087)
Parent size	0.116*	0.098†	0.054	0.046	0.040	0.042	0.036
	(0.054)	(0.054)	(0.054)	(0.055)	(0.055)	(0.055)	(0.055)
Number of foreign parents	−0.006	−0.033(0.117)	−0.069	−0.071	−0.062(0.110)	−0.105(0.116)	−0.093
	(0.112)		(0.108)	(0.112)			(0.113)
Host-country experience	−0.116**	−0.088*	−0.124**	−0.099*	−0.091*	−0.091*	−0.081*
	(0.038)	(0.039)	(0.040)	(0.041)	(0.041)	(0.041)	(0.041)
Population	−0.177*	−0.334***	−0.047	−0.169**	−0.190*	−0.098*	−0.120
	(0.082)	(0.086)	(0.085)	(0.092)	(0.093)	(0.098)	(0.098)
Real GDP	0.000	0.000	−0.000	0.000	0.000	−0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Total factor productivity	−0.456	−0.877(1.038)	−1.288	−1.456	−1.605(1.040)	−1.346(1.055)	−1.448
	(1.073)		(1.053)	(1.039)			(1.054)
Political relations	1.321	0.776	−0.486	0.469	0.523	−0.367	−0.402
	(1.206)	(1.189)	(1.186)	(1.182)	(1.179)	(1.172)	(1.168)
Economic relations	0.214†	0.319**	0.306*	0.359**	0.341**	0.335**	−0.308*
	(0.118)	(0.119)	(0.120)	(0.121)	(0.120)	(0.123)	(0.122)
Sector dummies	Included	Included	Included	Included	Included	Included	Included
Period dummies	Included	Included	Included	Included	Included	Included	Included
Contracting institutions		−0.028** (0.006)		−0.018**	−0.027**	−0.017**	−0.029**
				(0.006)	(0.008)	(0.006)	(0.008)
Property right institutions			−0.037***	−0.032***	−0.031***	−0.021*	−0.018*
			(0.006)	(0.006)	(0.006)	(0.008)	(0.009)
Subsidiary motivation × Contracting institutions					0.016†		0.019*
					(0.009)		(0.010)
Subsidiary motivation × Property right institutions						−0.024*	−0.027*
						(0.011)	(0.012)
Number of observations	4346	4346	4346	4346	4346	4346	4346
Log-likelihood	−1245.707	−1232.542	−1224.271	−1219.031	−1217.646	−1216.777	−1214.748
$\chi 2$	269.67***	296.00***	312.55***	323.03***	325.80***	327.53***	331.59***
AIC	2549.41	2525.09	2508.54	2500.06	2499.29	2497.55	2495.50
Likelihood-ratio Hypothesis Tests							
H0: $\beta_{Integrative \times Cont.} = 0$					325.80***		5.80*
H0: $\beta_{Integrative \times Prop.} = 0$						327.53***	4.06*

†$p < .10$; *$p<.05$; **$p<.01$; ***$p<.001$(two-tailed).
Standard errors in parentheses.

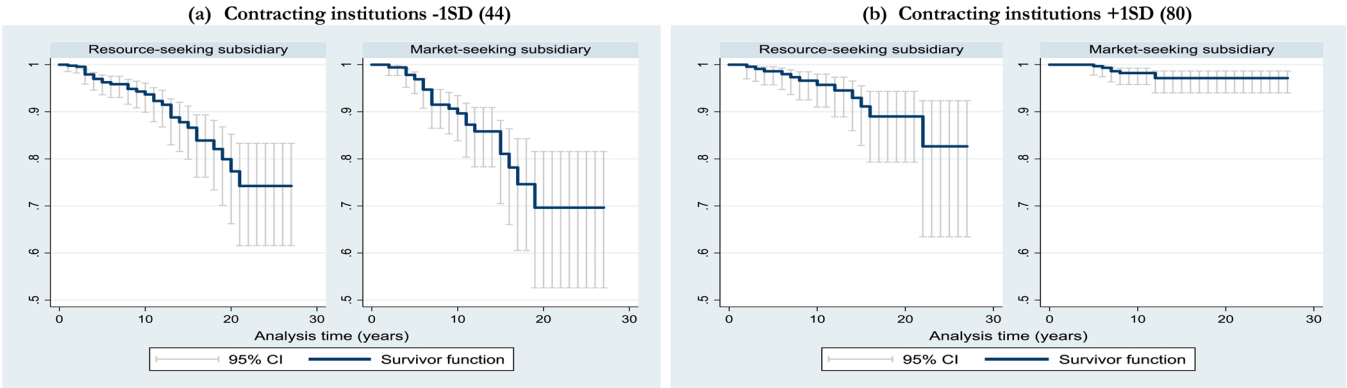

Fig. 1. Survival of resource-seeking and market-seeking subsidiaries in countries with less-and more-developed contracting institutions.

80 (i.e., 1SD above the mean). All other covariates were held at mean values. The plots allow for cross-group comparisons as suggested by Zelner (2009) and generate useful insights regarding the substantive/economic significance of our findings.

The overall pattern in Fig. 1**a** and **b** is consistent with Hypothesis 1 and indicates that the adverse effects of weak contracting institutions

are stronger for market-seeking subsidiaries. For instance, the probability for market-seeking subsidiaries surviving at the end of the study period (i.e., 2017) falls from about 97 percent in locations of strong contracting institutions (i.e., above 1SD of the mean) to roughly 70 percent in locations of weak contracting institutions (i.e., below 1SD of the mean). The change in survival probability for resource-seeking subsidiaries is less sharp, decreasing from about 83 percent in locations of strong contracting institutions to roughly 75 percent in locations of weak contracting institutions.

We also find statistical support for Hypothesis 2, which predicts that the adverse effect of property rights institutions is stronger for resource-seeking subsidiaries (β = -0.027, $\rho < 0.05$, Model 7 in Table 2). The corresponding hazard ratio (i.e., e^{β}) is 0.97, suggesting that weak property rights institutions are more detrimental to the survival of resource-seeking subsidiaries. We plot the interaction effect in Fig. 2. The plots in Fig. 2**a** and **b** show the survival probabilities of market-seeking and resource-seeking subsidiaries in host countries with property rights institutions levels of less than 15 (i.e., 1SD below the mean), and more than 55 (i.e., 1SD above the mean). In line with Hypothesis 2, the plots demonstrate how the adverse effects of weak property rights institutions are stronger for resource-seeking subsidiaries. For example, the probability of resource-seeking subsidiaries surviving at the end of the study period drops from about 87 percent in locations of strong property rights institutions to about 72 percent in locations of weak property rights institutions. In contrast, the survival probability for market-seeking subsidiaries remains roughly the same across these locations.

4.2. Robustness tests

We examine the robustness of our findings to variations in estimation procedures, data sources, and model specifications. Self-selection bias may occur when MNEs decide to pursue market-seeking or resource-seeking motivations. To examine whether our findings have been affected by such a possibility, we tested the sensitivity of our findings to the use of an alternative sample of subsidiaries, developed by matching market-seeking with resource-seeking subsidiaries, and an alternative matching procedure (i.e., propensity score matching). Our results remained robust. Whereas the use of paired-sample design contributes to mitigating endogeneity concern from observable self-selection bias, endogeneity concerns arising from unobserved heterogeneity remain (Reeb, Sakakibara, & Mahmood, 2012). As such, we tested the robustness of our results using the two-stage residual inclusion (2SRI) approach, which generates unbiased and consistent estimates from non-linear second stage models such as Cox regression model (Terza, Basu, & Rathouz, 2008). For the purpose, we used *legal origin* (i.e., common law or civil law) and *latitude*, in absolute values, of the capital city of the host country as instruments for contracting institutions and property rights institutions, respectively (Acemoglu & Johnson, 2005; Landes, 1998). We also included the squared terms of these exogenous variables as additional instruments. We obtained qualitatively similar results.

As well, we examined the sensitivity of our findings to how we measured our variables. We used the "rule of law" and the "control of corruption" indices from the World Bank's Governance indicator dataset (Kaufmann, Kraay, & Mastruzzi, 2005) as alternative measures for the contracting institutions and property rights institutions, respectively. Further, we reestimated our models with added controls for mode of ownership (i.e., joint venture or wholly owned), regional effects (Rugman & Verbeke, 2004), and host-country corporate tax rate (Farah, Elias, Chakravarty, & Beamish, 2021). While the values of the estimates differ, their signs and statistical significance remain the same. See Table A3 in the Online Appendix for results from the robustness tests.

5. Discussion and conclusion

Integrating insights from the new institutional economics and IB research on investment motives, this study contributes to research on foreign subsidiary survival. We examined the implications of contracting institutions and property rights institutions for foreign subsidiaries with market-seeking and resource-seeking motivations. We find empirical evidence pointing to subsidiary heterogeneity in the effects of host-country institutions: whereas weak contracting institutions are more detrimental to market-seeking subsidiaries, weak property rights institutions have a greater adverse effect on the survival of resource-seeking subsidiaries. These findings emphasize the need for us to better understand subsidiary heterogeneity and advance a more fine-grained understanding of host-country institutions (Blake & Moschieri, 2017; Bucheli & Kim, 2015; Smit et al., 2017).

5.1. Theoretical implications

This study contributes to theoretical development on the broader issues of host-country institutions and their implications for subsidiary survival in at least two ways. First, it underscores the importance of disaggregating host-country institutions and examining their respective implications. Theoretical arguments and empirical evidence point to the merits of doing so. The institutional diversity literature, for example, emphasizes the limits of an aggregated view of institutional hazards by highlighting the diversity and heterogeneity in the development of specific components (e.g., Aguilera & Grøgaard, 2019; Jackson & Deeg, 2008). Likewise, research drawing on the new institutional economics literature has underlined the importance of distinguishing between the key dimensions of institutional hazards (Acemoglu & Johnson, 2005; Taussig & Delios, 2015). Empirical evidence also points to the variation in the development of contracting and property rights institutions. For

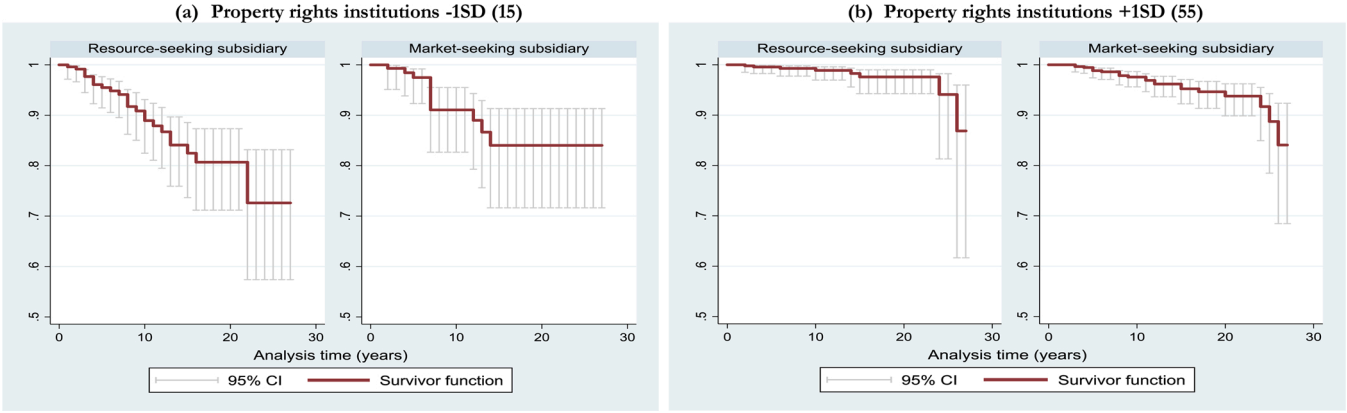

Fig. 2. Survival of resource-seeking and market-seeking subsidiaries in countries with less-and more-developed property rights institutions.

example, Johnson, McMillan, and Woodruff (2002) noted that the executive branch of the government in Russia has limited constraint on its power (i.e., weaker property rights institutions), but the courts function reasonably well (i.e., stronger contracting institutions). Fernandez and Kraay (2007) pointed to a similar contrasting development of contracting and property rights institutions in India and Bangladesh.

Second, the findings described above emphasize the need to engage the *why question* of foreign investments and move away from treating all foreign investments as homogenous. Whereas the investment motives literature (e.g., Nachum & Zaheer, 2005) and the subsidiary mandate literature (e.g., Birkinshaw & Hood, 1998) have emphasized the inherent strategic as well as structural differences among foreign subsidiaries, much of the research on host-country institutions has yet to fully leverage this insight. The results of this study point to the importance of engaging such subsidiary heterogeneity. In like vein, this study draws attention to foreign investment motivation and how it informs our understanding of the relationship between host-country institutions and foreign subsidiary survival (Dunning & Zhang, 2008).

The findings of our study also contribute to research on foreign divestment (e.g., Benito, 2005; Berry, 2010; Getachew & Beamish, 2017). Specifically, we find evidence pointing to the potential disparity in the implications of institutions supporting market contracts and property rights. That is, whereas resource-seeking subsidiaries appear to be more sensitive to the development (strength) of property rights institutions, market-seeking subsidiaries exhibit greater sensitivity to the development (strength) of contracting institutions. An explanation of this difference rests in the structural and strategic heterogeneity between the two forms of subsidiaries (Nachum & Zaheer, 2005; Slangen & Beugelsdijk, 2010). The greater focus on host-country market (Nachum & Zaheer, 2005) and contractual intensity of market-seeking subsidiaries (Nunn, 2007) can explain their sensitivity to the strength of institutions supporting market contracts. In contrast, the limited involvement in multiple phases of the local value chain (Hausmann et al., 2008) and the greater asset specificity of resource-seeking subsidiaries (Dunning & Lundan, 2008) can help explain their sensitivity to the strength of property rights institutions.

5.2. Practical implications

Our findings have several important implications for practitioners. The findings emphasize the need for managers to better understand the potentially contrasting implications of the different components of host-country institutions. As well, the findings offer useful insights about how the effects of these components can be contingent on the underlying motivation of foreign investment. Our findings suggest that management of resource-seeking subsidiaries need to pay more attention to developments in property rights institutions than in contracting institutions. In contrast, management of market-seeking subsidiaries need to follow more closely developments in contracting institutions. The results of the study can also inform policymaking in developing countries by providing useful insights on how the weakness of institutions supporting market contracts and property rights relate to the retention/loss of MNE investments and associated opportunities. As well, our paper suggests that host countries seeking to engage in economic upgrading and locally retain as much of the value in global value chains may find it useful to work on improving their contracting institutions. Further, our paper emphasizes the need for policymakers to understand subsidiary heterogeneity in developing policies targeted at attracting and retaining MNE investments.

5.3. Limitations and extensions

Despite its merits, this study has limitations, which offer fruitful avenues for future research. The use of subsidiaries from a single home country may limit the generalizability of its findings. Future research needs to examine whether the findings generalize to subsidiaries from other home countries. That said, it should be noted that the use of a single home country serves a useful empirical purpose of controlling for variance arising from home-country heterogeneity. As well, we understand the limitations in the proxies and/or measures we used for the core constructs of this study. Although we tested for the robustness of our findings using alternative proxies and/or measures, future research in the area would benefit from a clearer definition of the constructs and validation of the measures.

Further, future research can advance a better understanding of host-country institutions and their implication by leveraging insights from the literature on 'institutions as a source of comparative advantage' (e.g., Nunn, 2007). This literature discusses how strong contracting institutions can provide comparative advantage for such contract-intensive industries as automobile and light truck manufacturing (Nunn & Trefler, 2014). Another interesting area lies in examining the implications of changes in the policy environment of subsidiaries. For example, it would be important to look into the processes and implications of changes initiated by some developing-country governments in requiring MNEs to locally perform more downstream activities (Bucheli & Kim, 2015; Hausmann et al., 2008). Such research can advance our understanding of how property rights institutions (or host-country institutions broadly) affect the boundary, strategy, and viability of foreign subsidiaries.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.jwb.2021.101226.

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