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Foreign Buyout of International Equity Joint Ventures in China: When Does Performance Improve?

ABSTRACT

Since the early 2000s, Sino-foreign equity joint ventures (JVs) have declined sharply as a predominant strategy for multinational enterprises (MNEs) to enter and operate in China. We study one of the contributory factors, foreign buyout, and its performance implications. By applying incomplete contract theory and an agency perspective, we provide micro evidence that superior post buyout performance is observed in converted wholly-owned subsidiaries (WOSs) with efficiency-seeking operations and subsequent CEO succession. The findings extend our understanding that ownership *per se* does not guarantee performance improvement. Instead, it is the alignment between ownership and the owner's inputs, and between ownership and the owner's managerial control, that give rise to performance improvement.

Keywords: International equity joint venture; Foreign buyout; Firm performance; CEO succession; Agency theory; Incomplete contract theory; Efficiency-seeking FDI; China.

Foreign Buyout of International Equity Joint Ventures in China: When Does Performance Improve?

1. Introduction

International business research has devoted significant attention to the ownership choices of multinational enterprises (MNEs) when entering a foreign market (Agarwal & Ramaswami, 1992; Yiu & Markino, 2002; Filatotchev & Wright, 2011; Nippa & Reuer, 2019). With a few notable exceptions (e.g., Chang, Chung, & Moon, 2013; Chang, 2019), much less is known about the post entry evolution of ownership structure and its performance implications. By contrast, focusing more on the performance of MNEs, international economics literature has extensively examined the performance premium of foreign ownership relative to domestic ownership (Lecraw, 1984; Chhibber & Majumdar, 1999; Girma & Gorg, 2007). But this leaves the potential performance wedge between partial and full foreign ownership under-studied. Given that many developing countries have adopted foreign direct investment (FDI) deregulation policies, such as the dismantlement of ownership restrictions (Whalmsely, Hertel, & Ianchovichina, 2006), it is important to understand to what extent full foreign ownership leads to superior performance relative to partial foreign ownership and if so, why this occurs. Foreign buyouts of international equity joint ventures (JVs) therefore provide a unique opportunity to gain insight into the performance implications of full foreign ownership. This is the focus of our study.

Buying out the local partner of an equity JV and assuming full ownership over the subsidiary is a significant event that shifts the entire ownership control of the subsidiary to the foreign parent, as well as changing the way that the foreign parent manages and operates the subsidiary (Nippa & Reuer, 2019). Compared to cross-border mergers and acquisitions (M&As), foreign buyouts in the context of JVs are unique in the sense that the foreign parent had collaborated with the local parent through the operation of their JV, which significantly reduces information asymmetry between the target (i.e., the JV) and the acquirer (i.e., the foreign parent). The

informational advantage would reduce the likelihood of some pitfalls plaguing international M&A, such as overpay and lack of synergies (e.g., Seth, Song, & Pettit, 2002; Harford, Humphery-Jenner, & Powell, 2012).

However, to what extent foreign buyouts lead to better performance is far from simple, as two studies have shown that overall foreign buyouts do not lead to better or worse performance (Chang, Chung, & Moon, 2013; Chang, 2019). In this paper, we continue this nascent line of enquiry by applying two complementary theoretical views that provide further insights into the contingencies upon which *ex post* performance improvement arises.

The first theoretical perspective is based on incomplete contract theory (Grossman & Hart, 1986). This theory suggests that ownership *per se* is not an antecedent of superior performance. Instead, ownership allocation is a device to minimize contract frictions and install *ex post* incentives (Grossman & Hart, 1986; Hubbard, 2004; Anstras, 2013). Given that all contracts are inherently incomplete, ownership should be allocated to *the party* whose input is most critical but difficult to contract for the successful operation of the business. In other words, it is the alignment between ownership allocation and the owner's inputs to the business that holds the promise of superior performance improvement. This view entails that, in the context of JV buyout, full *foreign* ownership is more likely to generate better performance for those subsidiaries in which the *foreign* party's actions or inputs are most critical and yet difficult to write contract for. We refer to this as the *alignment* between ownership control and the operational orientation of the subsidiary.

One of the most salient differences of subsidiary operation is market orientation. In particular, they can be either local market or export market oriented. The former is often referred to as market-seeking or horizontal FDI, and the latter is referred to as efficiency-seeking or vertical FDI (Dunning, 1993; Markusen, 1984; Helpman, et al., 2004; Li & Rugman, 2007; Brouthers, Brouthers & Werner, 2008; Brouthers, Gao, & McNicol, 2008; Zhou &

Guillen, 2016). It is well established that one of the key motivations of foreign MNEs to create JVs with host country partners is to access resources and expertise for market-seeking subsidiaries (Hennart, 1988, 1991). The need for local expertise, however, is much lower for efficiency-seeking subsidiaries. Efficiency-seeking subsidiaries often require foreign market access and proprietary knowledge transfer from the parent. More importantly, they are more likely to be part of a multinational production network, which means that they need to coordinate with the multinational network to achieve corporate efficiency (Hanson, Mataloni, & Slaughter, 2005; Antras, 2013). Therefore, we operationalize our first hypothesis as an alignment between full foreign ownership and efficiency-seeking subsidiary, which will give rise to performance improvement after foreign buyout.

Our second theoretical lens is derived from agency theory. Agency theory acknowledges a separation of ownership and managerial control in modern corporations (Fama, 1980; Tosi & Gomez-Mejia, 1989; Kim, Prescott, & Kim, 2005; Bendickson et al., 2016). Therefore, similar to incomplete contract theory, but from a different perspective, this view also suggests that ownership *per se* does not guarantee performance, because managers may pursue goals misaligned with that of the owner (Jensen & Meckling, 1976). Instead, it is the alignment between the owner and their effective control over the management that can elicit performance improvement. In the case of MNEs, local managers of multinational subsidiaries may pursue goals incongruent with the parent, despite the parent's full ownership of the subsidiary (Peng, 2000; Filatotchev & Wright, 2011; Cavanagh et al., 2017). Therefore, performance improvement is more attainable if the foreign parent exerts managerial control, either implicitly or explicitly, over the subsidiary to mitigate agency problems. Departing from extant studies that examine various means through which the parent exerts managerial control over its subsidiaries (Chang & Taylor, 1999; Tan & Mahoney, 2005; Aguilera & Crespi-Cladera, 2016; Ali, Khalid, Shahzad, & Larimo, 2021), we focus on post foreign buyout CEO succession as a

compelling form of managerial control. We compare post buyout performance between subsidiaries that experienced CEO succession subsequent to the foreign buyout and those that did not, and we hypothesize that it is only in the former that positive performance improvement may be attainable.

To test our hypotheses, we use a panel dataset of the entire population of enterprises with foreign equity participation located in Wuxi, China, between 2001 and 2007. To compare performance between JVs that remained JVs and JVs that were transformed into wholly-owned subsidiaries (WOSs), we control for potential endogeneity associated with the ownership conversion by using a matching technique based on propensity score (Rosenbaum & Rubin, 1985). Matching is performed based on the propensity score and two additional criteria: two digit industry code and year. We also deploy a difference-in-differences estimation by treating the year in which the foreign buyout took place as the starting point and tracing the performance trajectories up to three years after the buyout event. We find supporting and robust evidence for our hypotheses.

Our research contributes to the international business literature in several ways. Empirically, it connects previously segmented studies on ownership choice, subsidiary operation characteristics, and CEO succession and provides deeper insights into how the alignment between ownership and subsidiary operation, and between ownership and managerial control, contribute to subsidiary performance. To elaborate on this point, most international business studies have examined ownership choice, especially upon entering a host market. With the exception of a small number of studies (Steensma, et al., 2008; Chung & Beamish, 2012; Chang, Chung, & Moon, 2013; Chang, 2019), much less work has been done on the post entry changes of subsidiary ownership structures or the performance implications of such changes. With respect to CEO succession, despite its growing significance in corporate finance and strategic management studies due to the important role of the CEO in modern corporations

(Quigley & Hambrick, 2015), international business literature has devoted scant attention to it due to a paucity of data; and neither has it been considered in the context of foreign buyout of international JV studies.

We also theoretically extend our understanding of the performance of WOSs. We demonstrate that full foreign ownership is valuable for improving the performance of the converted WOS only when the foreign party's inputs are critical for the successful operation of the subsidiary. This contingency embodies the critical importance of an alignment suggested by incomplete contract theory: an alignment between ownership and the owner's contribution to the operation of the business. This alignment reduces contractual difficulties, and also incentivizes the *right* party to contribute (Hart, 1998; Hubbard, 2004; Antras, 2013). Additionally, the finding that CEO succession subsequent to foreign buyout leads to superior performance in WOSs reiterates our view that ownership *per se* does not guarantee performance improvement. Instead, it is the alignment between the owner and the owner's managerial control that can mitigate agent costs and improve performance. This finding is particularly important in the context of China, which lacks an active market for corporate control, making the appointment of key personnel one of the few means for the owner to exercise managerial control (Firth, Fung, & Rui, 2006).

2. Literature review and hypothesis development

2.1 Literature review

From the early 2000s, China adopted a series of policy moderations with respect to foreign MNEs' operations, including the relaxation of ownership restrictions. Although the relaxation of ownership restrictions was less transparent than many foreign MNEs desired, and was often judged on a case by case basis, where local and central authorities still had considerable powers of intervention (Li & Li, 2010), WOS gradually replaced JV and became the dominant

organizational structure of MNEs in China (Yan & Warner, 2002). A major driver of this change was that many MNEs transformed their JVs into WOSs by buying out their local partners. For example, FedEx Corporation, which set up a JV with Tianjin Datian W. Group Co. in 1999, bought out its Chinese partner in 2006, taking control of the JV's facilitates in eighty nine locations across China. In 2004, Procter & Gamble purchased the remaining 20% stake held by its partner in China - Hutchison Whampoa China Ltd. - to assume full ownership of its Chinese operations. China is hardly unique in this respect. Similar trends are evident in other developing or transition economies, such as India (Mukherjee & Sengupta, 2001), Hungary (Steensma et al., 2008) and elsewhere (Svejnar & Smith, 1984; Desai et al., 2004).

In international business literature, JV is often considered a temporary organizational form that typically ends in dissolution. But dissolution implies several distinct outcomes, including local buyout, foreign buyout, acquisition by an outsider, and outright termination. Contrary to the view that JV dissolution indicates failure (e.g. Lu & Xu, 2006; Makino, Chan, Isobe, & Beamish, 2007), numerous studies suggest that dissolution could be an efficient response to end a collaborative relationship. Joint ownership brings benefits as well as costs compared to sole ownership (Reuer & Miller, 1997; Habig & Mella-Barral, 2006). A crucial benefit of JV is that it fosters exchange of information of markets and technology, thus creating potential sources of synergic gains (McConnell & Nantell, 1985; Balakrishman & Koza, 1993; Habig & Mella-Barral, 2007). Internalizing transactions within the JV can be more efficient than arms-length contracting because shared ownership ameliorates opportunistic behaviour (Williamson, 1979; Alchian & Woodward, 1987; Chowdhury and Chowdhury, 2001). JV also provides the opportunity for partners to pool financial resources (Johnson and Houston, 2002) and share risks (Antras et al., 2009).

Foreign buyout may be a natural outcome because as each partner's knowhow increases, so too does the partner's ability to operate alone. Some studies argue that in certain cases partners

enter a JV as a prelude to a merger, suggesting that JV may be a transitional mechanism to reduce the risk and enhance the value of the subsequent union (Mantecon & Chatfield, 2007). Therefore, instead of indicating failure, JV buyouts could be an efficient mechanism to separate the interests of partners, as studies find that the majority of JVs are dissolved through buyout rather than liquidation (Hennart et al., 1998; Steensma et al., 2008).

Prior studies examine the evolving influence of multi-party JV complexity on performance, where the multi-party goes through multiple waves of structural change (Chung & Beamish, 2012). While this is not our focus, we control for the number of parties in our analysis. Using extensive questionnaire data, power imbalance, learning and the moderating role of conflicts are found to be significant factors in the internalization of JVs (Steensma et al. 2008). While Steensma et al.'s study provides insights into the antecedents of buyout, as well as suggesting which party might take the JV over, we extend this line of analysis by tracing the performance trajectories *ex post* buyout. Our limitation is that we only trace the cases of foreign buyouts. Using nation-wide manufacturing data including foreign invested firms, Chang, Chung and Moon (2013) focus on foreign buyouts and find that foreign buyouts achieve superior performance only in *industries* with high levels of intangible assets embodied in R&D and advertising expenditure. Further, Chang (2019) provides a symmetrical analysis of both foreign and domestic buyouts of JVs: foreign buyouts tend to take place in *industries* with higher intangible assets and in *provinces* with lower institutional barriers; and more importantly, foreign buyouts in these contexts generate *ex post* performance improvement. The opposite is true for domestic buyouts: they are more likely to take place in industries with lower intangible assets and in provinces with higher institutional barriers; and these domestic buyouts deliver *ex post* superior returns.

These studies provide interesting insights into the buyouts of JVs and performance contingencies. However, the conclusions drawn from industry and region level differences may

not apply to individual subsidiaries. Our study complements and builds on Chang, Chung and Moon (2013) and Chang (2019) by focusing on subsidiary heterogeneity, specifically, their operational characteristics and the connectivity between CEO succession and *ex post* performance.

2.2. Hypotheses development

2.2.1 Alignment between ownership and subsidiary operation

The international business literature provides rich discussions on subsidiary operational characteristics. For example, Dunning (1993, 1998) classified FDI into four types: market-, resource-, efficiency- and strategic asset-seeking. Market-seeking FDI occurs when MNEs invest in a foreign country to exploit a market of greater dimension than in the home country. Resource- and efficiency-seeking can overlap in the sense the former emphasizes the cases where MNEs seek to gain access to natural resources not available in their home country, whereas the latter underscores the benefits of accessing cheaper labor in the host country. But in general, efficiency-seeking FDI plays a more prominent role in developing countries due to the significance of abundant labor. By contrast, strategic asset-seeking FDI is less about exploiting firm capabilities and more about defending or augmenting competitive advantage through acquisition of, or partnership with, a foreign firm (Dunning, 1998: 50; Meyer, 2015).

It is important to note that these are not siloed or static alternatives. In practice, the antecedents of a subsidiary may derive from more than one of Dunning's classification types. For example, it may be both market-seeking and efficiency-seeking, particularly in a large and diverse market like China. Also, the strategic logic of a multinational subsidiary may change over time, as a host market evolves from what Ghemawat (2007, 2008) describes as arbitrage prospects (exploiting differences such as cheap labor costs) to adaptation opportunities (increasing market share by customizing products to meet local demand). This has been evident

in markets like China, where, as wages increased and labor arbitrage declined, consumer demand grew for international products and adaptation became more attractive.

Moreover, as government policy evolves, for instance, in response to an external stimulus like China's World Trade Organization (WTO) accession, we also see movement between and within FDI types. This is because although foreign MNEs are likely to benefit from the local partner's contribution of local knowledge via their joint venture cooperation (Yan & Gray, 1994; Inkpen & Beamish, 1997; Oguji, Degbey, & Owusu, 2021), the benefits may decline over time, usually due to learning and adaption, and decline more for those exporting from China because of convergence between the rules and regulations governing international trade in China and those of the WTO system.

Dunning's taxonomy bears similarity to the discussion in international economics literature. Beginning with Markusen (1984) and Helpman (1984), FDI is first modelled as a vehicle to avoid high transportation costs or host country trade protection. MNEs are then found to increasingly segment their international production value chains to take advantage of lower labor costs unavailable at home (Barrell & Pain, 1996). Both motivations may be present, as the knowledge capital model of Markusen and Maskus (2002) and other studies acknowledge that MNEs pursue "complex integration strategies" as the value chain may be split into more than two stages and more than two host countries (Grossman, Helpman, & Szeidl, 2006). An example of this strategy is export platform FDI, with the aim not of exploiting the larger host country market but rather using it as a platform to export to third countries.

In our analysis, we focus on market- and efficiency-seeking FDI, as these have been the two primary motives of inward FDI in China, with its rapid economic growth and competitive labor costs (Liu, Lovely, & Ondrich, 2010). The distinction between the two is important because the extent to which the subsidiary may require foreign input differs, implying a *differentiated* desirability of full foreign ownership.

For market-seeking subsidiaries, JV is often the preferred mode of operation and may remain so even after the relaxation of policy restrictions on foreign ownership. Hennart (1988, 1991) notes that JVs arise when two or more firms desire to combine their inputs but that the transfer of those resources has high market transaction costs, typically because they are know-how resources. In the Chinese context, market-seeking subsidiaries are subject to a greater level of influence from local environmental forces (Luo, 2001, 2002, 2003). Local partners can provide insightful information and country-specific knowledge, which can lower the risk of institutional conflicts between foreign subsidiary and host country institutions (Peng, 2003; Duanmu, 2011). The resources that local partners have can be tacit and network based and may not be obtained efficiently via market exchanges or M&A (Das & Teng, 2000; Xu et al., 2006; Sun, Mellahi, & Wright, 2012). Some resources that market-seeking subsidiaries need for growth are strictly controlled by the state or local firms with political connections and institutional embeddedness, and are not always available for market exchange (Sun, Xu, & Zhou, 2011; Shi, Markóczy, & Stan, 2014; Nell, Puck, & Heidenreich, 2015; Ge, Carney, & Kellermanns, 2019).

Further, as Wang et al. (2020) argue, access to resources through political ties and institutional engagement must occur at various governmental levels to ensure both innovativeness and profitability. These resources include distribution channels, which are usually monopolized by local government or powerful family businesses, natural and perishable resources that are only feasible to source locally, and favorable land use rights and production and distribution licenses for regulated products such as alcohol, drugs, and medical supplies. For example, the global pharmaceutical corporations GlaxoSmithKline and Novartis set up joint venture with local companies, Shenzhen Neptunus Interlong Bio-Technique Company and Zhejiang Tianyuan Bio-Pharmaceutical respectively to access government vaccine-procurement programs. Coca-Cola entered a 50-50 JV with the Ministry of Light

Industry and Shanghai Investment and Trust company to sidestep regulatory constraints on soft drink production and distribution (Mok, 2002). Joint ownership with local partners becomes, and is likely to remain, an efficient way to access valuable resources and circumvent idiosyncratic restrictions, making it an optimal ownership structure for market-seeking subsidiaries (Yan & Gray, 1994; Inkpen & Beamish, 1997; Bai et al., 2004).

By contrast, there are at least two reasons that WOSs may be more desirable for efficiency-seeking subsidiaries. First, efficiency-seeking subsidiaries usually need the corporate parent's information about and access to overseas markets (Feenstra & Hanson, 2005). This means that they need more inputs, such as market information and technical support from the parent. Second, efficiency-seeking subsidiaries are often part of the parent's global production network, which means that they have high interdependence with their parent and other sibling subsidiaries. This would require them to have successive adaptations in their coordination with other parts of the corporation. Using Antras' term: these subsidiaries require more "headquarters-intensive" services and planning, thus make foreign ownership crucial for their success (Antras, 2013, p. 119). Such intra-firm coordination may put strain on local partnerships in the case of joint ownership. These two reasons suggest that the foreign party's contribution is the most critical for the success of the subsidiary, which indicates, based on incomplete contract theory, that internalization by the foreign parent will entail the optimal ownership allocation (Grossman & Hart, 1986; Hart, 1988; Hubbard, 2004; Abernethy et al., 2004; Antras, 2013).

This view is echoed in other studies. Chang, Chung, and Moon (2013) suggest that JVs might have difficulty in coordinating a parent-subsidiary product portfolio due to shared control, divergent learning and expectations. When foreign MNEs use a local subsidiary to develop exporting within its own vertical production network, there are additional risks in securing and enforcing contractual obligations such as timely deliveries and quality standards. Internalizing

these subsidiaries through full ownership helps mitigate such risks and achieve corporate efficiency (Roth & Morrison, 1992). Full ownership enables the MNE to coordinate globally in terms of product design, manufacturing, distribution, and tax planning (Kant, 1990; Desai, Foley, & Hines, 2004), facilitates information sharing (Pantzalis, Simkins, & Laux, 2001), and avoids corporate sub-optimization (Egelhoff, 1982).

What is particularly noteworthy in our research context is China's WTO accession in December 2001. The most fundamental goal of WTO accession was to facilitate China's trade integration with the global economy. This explains the large reductions of tariff and non-tariff barriers in China (Brandt et al., 2012). The sharp reduction of trade protection made China a more desirable destination for vertical production by MNEs. Although there is no research investigating the potentially asymmetrical effect of WTO accession on market- versus efficiency-seeking FDI into China, research has shown that, using firm level data of U.S. MNEs, lower trade costs in host countries significantly accelerate the vertical fragmentation of U.S. MNEs production, but no such effect is shown for market-seeking (i.e., horizontal) FDI (Hanson, Mataloni, & Slaughter, 2005).

The regulatory convergence of China with WTO rules means that China removed many idiosyncratic requirements for firms engaging in international trade. This substantially reduced the need for local partner's input, especially concerning compliance with regulatory and legislative rules on trade (Child & Tse, 2001; Pan & Chi, 1999). For example, China introduced special arrangements for processing trade, such as duty exemptions and rebates of Value Added Tax payments. Imports of intermediate inputs for use in the production of exports were completely liberalized. These privileges were only accessible to domestic firms and JVs before 2001 but were expanded to WOSs from 2002 with China's WTO accession. These policies could significantly promote China as a location for efficiency-seeking FDI, which may explain

why China's neighboring countries expressed their concern that they would lose out in their ability to attract FDI (Deardorff, 2001).

In contrast, although the Chinese government was obliged to treat all foreign invested firms equally as domestic firms under the general rules of the WTO, host countries can maintain some level of ownership restrictions for foreign investment to suit their domestic needs. This is consistent with the institutional goal of the WTO, which is to use a universal set of rules to govern and promote international trade, and to leave domestic markets to host governments. More importantly, there are various subtle ways in which local government agencies and domestic firms can maintain their monopolistic control over local resources, particularly distribution channels and local supply networks. The significant tariff and non-tariff reductions associated with China's WTO accession also meant that the domestic market faced fiercer import competition (Brandt et al., 2012; Duanmu, Bu, & Pittman, 2018). This could make JV desirable to share expertise and resources and to pool risks for market-seeking subsidiaries. Combining these arguments, we suggest the first hypothesis as follows:

Hypothesis 1 (**H1**): Foreign buyout is more likely to generate performance improvement if the subsidiary operation is efficiency-seeking, *ceteris paribus*.

2.2.2 Alignment between ownership and managerial control

It is often implicitly assumed or explicitly stated that an MNE's control over its subsidiary comes exclusively through ownership (Anderson & Gatignon, 1986; Gatignon & Anderson, 1988; Kim & Hwang, 1992; Hennart, 2010). However, in reality, ownership does not eliminate incentive problems, nor does it achieve *de facto* control because of the separation between ownership and management in most modern enterprises (Fama, 1980; Tosi & Gomez-Mejia, 1989), especially in MNEs (Li, 2008; Puck, Hödl, Filatotchev, Wolff, & Bader, 2016). Therefore, our second theoretical insight is based on agency theory, from which we postulate that ownership *per se* is not sufficient for performance improvement; instead, it is an alignment

between ownership and the owner's managerial control over the subsidiary that holds the potential for performance improvement.

The agency relationship central to our interest is that between the MNE's parent and its subsidiary (Filatotchev & Wright, 2011; Cavanagh et al., 2017). The linkage between a parent and its foreign subsidiary can be appropriately compared to the agency relationship between a principal and an agent in that the parent invests funds and resources in the subsidiary, and the subsidiary, in turn, is expected to work for the benefit of the parent (Chang & Taylor, 1999; Buckley & Strange, 2011; Aguilera & Crespi-Cladera, 2016). Agency costs in this context include any subsidiary decision undertaken to promote its own interests at the expense of headquarters'. Agency problems tend to be more acute in the relationships of MNEs with their foreign subsidiaries, compared to firms with only a domestic orientation. One of the main reasons is that foreign subsidiaries operate in environments that are substantially different from those of the parent in terms of culture, language, and legal systems. The geographic and institutional distance between the MNE headquarters and foreign subsidiaries increases monitoring costs because it is more uncertain for the parent to assess the appropriateness of subsidiaries managers' decisions (Egelhoff, 1984; Chang & Taylor, 1999; Peng, 2000; Hoskisson et al., 2000).

From this perspective, full ownership of the subsidiary by the foreign MNE alone may not necessarily deliver superior performance if there is divergence between the parent and the management of the subsidiary (Puck, et al., 2016). Conversely, superior performance might be more attainable when full foreign ownership is aligned with the MNE's effective managerial control over the subsidiary (Chow et al., 1999). The level of managerial control of the parent over the subsidiary has been viewed as a means of coordinating globally dispersed units within MNEs (Gates & Egelhoff, 1986), aligning subsidiary behavior with corporate objectives (O'Donnell, 2000), and mitigating uncertainty in culturally distant locations (Garnier, 1982).

While past studies have examined various means through which the parent exerts managerial control over its subsidiaries, such as via culture, behavior, and output control (Chang & Taylor, 1999; Puck et al., 2016), and through the assignment of expatriates (Tan & Mahoney, 2006), we advocate a new but critically important channel through which the parent can exert managerial control: subsidiary CEO succession. Buyout of the local joint venture partner's equity interests enables the MNE to consolidate managerial control - often exemplified by the appointment of a new CEO - and reduce subsidiary agency costs. This also highlights the strategic nature of CEO succession (Beatty & Zajac, 1987). Further, as previous work such as Zajac (1990) argues, firms with CEOs promoted from within tend to be more profitable than firms with CEOs brought in from outside. This is in part explained by lower agency problems around goal congruence and information asymmetry (Chakravarthy & Zajac, 1984). We build on and extend this work into international business research, arguing that a CEO – appointed *solely* by the parent multinational following the buyout of local partner interests – reduces headquarters-subsidiary agency problems of goal congruence and positively impacts on subsidiary performance.

In doing so, we acknowledge that extant studies have contested correlations between CEO succession and performance improvement, particularly when the new CEO is tasked with delivering strategic change (Beatty & Zajac, 1987; Miller, 1993; Schepker, Kim, Patel, Thatcher, & Campion, 2017). However, we argue that research has failed to take account of the specificities of CEO succession in the overseas subsidiaries of MNEs, particularly as a consequence of the shift in ownership from joint venture to wholly-owned subsidiary. We argue that in these situations, a subsidiary's successful strategic realignment is facilitated through enhanced managerial control of parent over subsidiary, epitomized by CEO succession.

This aligns with Tushman and Rosenkopf's (1996) argument that CEO succession is positively associated with subsequent performance when context is stable, but significantly more negatively associated with subsequent performance in turbulent contexts. We argue that consolidated ownership and enhanced managerial control in the parent-subsidiary context corresponds with Tushman and Rosenkopf's notion of a stable context. We also note that our research context involves regulatory dynamics that render the business environment more open and liberal. This in turn is conducive to new CEOs adopting to the evolving business environment through novel capabilities, skills and visions. This view is also reflected in Haveman, Russo, & Meyer's argument that following regulatory punctuation, CEO succession tends to improve firm performance because they are the agents for change and new developments in the business operations (2001, p. 260). In addition, the notion that the CEO succession-performance connectivity is stronger for firms with a majority (or in our case, unitary) shareholder is further confirmed in Kato and Long's (2006) study of executive succession and firm performance in China.

The succession of top management is one of the most important topics in corporate finance and strategic management studies due to the increased importance of the CEO in modern enterprises (Drucker, 1981; Pfeffer, 1981; Fama & Jensen, 1983; Walsh, 1988; Wiersema & Bantel, 1993; Firth, Fung, & Rui, 2006; Cheng,, Li, & Tong, 2008; Quigley & Hambrick, 2015). But it is scarcely examined in international business research. However, interesting insights can be drawn from extant studies in these areas. For example, one of the five rules for successful acquisitions is that the acquiring parent company must be able to supply top management for the target company within one year of takeover (Drucker, 1981). In cases of M&As without prior collaboration between the two parties, the acquiring firm may wish to retain the target's top management to ensure successful integration. In contrast, such an incentive is absent in cases where the acquirer and target had a prior collaborative relationship

(Walsh, 1988), as is the case in our study. In studies of M&A, a takeover gives rise to the disciplinary power of an external market for corporate control. Thus, a takeover is often considered a mechanism to replace inefficient top management (Walsh & Ellwood, 1991). CEO succession is argued to provide an important mechanism for the organization to overcome inertia (Tushman & Romanelli, 1985; Hannan & Freeman, 1984; Helmich & Gilroy, 2012), to strategically adopt to changing environments (Helmich, 1977; Vancil, 1987), and to symbolically ratify the intentions to change organizational operations and the effectiveness of these operations (Pfeffer, 1981).

More specifically in the context of foreign buyout of JVs' local partner, we suggest that full foreign ownership is likely to enable the foreign party to fill the top management position entirely based on its own preference (Baliga & Jaegar, 1984). While the CEO in the JV is often appointed jointly by the parties to ensure a fit for the organizational context and JV goals, when the foreign party buys out the local partner, the incumbent CEO who was previously a fit for the job may no longer be suitable to lead a subsidiary that has experienced ownership conversion. The foreign buyout may send a signal to the incumbent CEO that the consolidated WOS may pursue new goals which (s)he may not agree with or be able to adapt to leading. The direction of the WOS, as distinct from the previous JV, may not suit his or her career prospects and organizational identification (Li, 2008).

This assertion is predicated on the previous JV CEO not being appointed exclusively by the foreign MNE. China's foreign investment legislation obliged joint decision making in Sino-foreign JVs on all fundamental issues, such as production and business programs, the budget, distribution of profits, and the appointment or hiring of the CEOs, chief engineers, treasurers, and the auditors, as well as their remuneration (Zimmerman, 2004). Thus it is plausible to assume that the previous CEO was appointed with the consultation or participation of the local parntner. Therefore, we suggest that in cases where an MNE chooses to appoint a new CEO

subsequent to buying out a local partner, it is consistent with the classical agency theory view that the change of ownership reflects a market for corporate control, wherein companies compete for the right to determine the management of a target company's resources (Fama & Jensen, 1983). CEO succession in such a context, as an extreme form of managerial control, can be an integral part of the internal monitoring mechanism for the parent to reduce agency problems in the subsidiary (Walsh, 1988) and improve organizational efficiency (Jensen & Ruback, 1983; Bilgili, Calderon, Allen, & Kedia, 2017).

CEOs also act as the core of the stable governance structures within an organization, which can restrict the organization's ability to change (Brady & Helmich, 1984). As a result, the succession of CEOs provides an important mechanism for the organization to overcome inertia (Tushman & Romanelli, 1985) and adapt strategically to changing contexts (Helmich, 1977; Vancil, 1987). It is thus plausible to infer that a new CEO, appointed exclusively by the foreign parent in the converted WOS, may facilitate the necessary cultural, operational and strategic changes in the subsidiary. This fits with the Boivie et al. (2011) findings that a CEO with high organizational identification may avoid the pursuit of personal gains that can harm the firm, thereby reducing agency costs. This also aligns with the Bosse and Phillips (2016) notion that self-interest is bounded by norms of reciprocity and fairness, and therefore if the CEO has the goodwill of the principal, s/he is likely to reward it through positively reciprocal behaviors, thus reducing agency problems in the subsidiary.

Our reasoning has a particular pertinence to the Chinese context. The lack of an active market for corporate control in China means that there is no takeover threat from M&A (Firth, Fung, & Rui, 2006), making the appointment of top management one of the few means to exercise managerial control. Through CEO succession, the parent may instill more rigorous corporate governance, which might have been difficult to achieve when the subsidiary was under joint ownership. The foreign party may prefer to bring more Western managerial practices,

organizational cultures and values into the subsidiary, which might be hampered by the previous local partner's divergent preference. The parent may also choose a CEO with different skillsets to adapt to the rapidly changing business environment and their evolving corporate goals (Wiersema & Bantel, 1993), all of which could help improve subsidiary performance. We sum up the discussion in the following hypothesis:

Hypothesis 2 (H2): Foreign buyout is more likely to generate performance improvement if there is CEO succession after the foreign buyout event, *ceteris paribus*.

3. Data and methods

3.1 Data

We use a panel dataset of the entire population of firms with foreign equity participation located in Wuxi, China, between 2001 and 2007. We obtained the dataset from the Wuxi Municipal Government. Wuxi is a fast developing city in Jiangsu Province, adjacent to the commercial center of China – Shanghai. Wuxi's GDP per capita was USD 20,600 in 2016, making it the top city in Jiangsu Province and among the top five cities in China.

Compared to data used in prior research, ours has advantages as well as limitations. For example, the nation-wide data used in Chang, Chung, and Moon (2013) and Chang (2019) is from the Annual Survey of Industrial Firms (i.e., minimum annual turnover of 5 million RMB), in which foreign ownership can be identified as part of the ownership reporting. Our data is the entire population of firms with foreign equity participation located in a region. Thus, one key advantage of our data is that it is an unbiased representation of *all* foreign firms in the region because it is free from the sampling threshold present in Chang, Chung, and Moon (2013) and Chang (2019).

A second advantage of our data is that it contains richer information than that in Chang (2019) and Chang, Chung, and Moon (2013). For example, we can observe subsidiary home country of origin, number of expatriates, service income, import values, and importantly, CEO.

Some of the information proves non-trivial either in our matching exercise or in testing our theoretical hypotheses.

Thirdly, although our data is limited to 2001-2007, the time line is not far from that in the Annual Survey of Industrial Firms (1998 to 2007) in previous studies (Chang, Chung, & Moon, 2013; Chang, 2019). The time line is also suitable to explore contextual factors relevant to our discussion, i.e., China's WTO accession and foreign ownership relaxations in this period. While over 70% of FDI into China was in the form of JVs in the 1980s, this percentage declined to approximately 50% in 1997, and continued to drop to 30% in 2002 (Bai, Tao, & Wu, 2004). With increasing numbers of new entries choosing WOS (Guillen, 2003), the number of foreign buyouts will be decreasing, making the later years less relevant to our investigation. Our findings can also be viewed as a snapshot in time, indicative of what may happen in other developing countries which are in the process of relaxing their ownership rules, such as Vietnam, and Laos (OECD, 2017), or may relax restrictions in the future, such as numerous sub-Saharan African countries.

We use "firm" and "subsidiary" interchangeably as our observations are (Chinese) subsidiaries from the foreign MNEs' perspective and are firms from the Chinese census's perspective. Our focus is exclusively on these subsidiaries, i.e., JVs, and WOSs when JVs are converted to WOSs. We do not have their Chinese or foreign parent information, nor is that our focus.

3.2 Measuring performance and foreign buyout

Our key interest is whether or not foreign buyouts in subsidiaries with efficiency-seeking operation and *ex post* CEO succession lead to better performance. We measure operational performance, as these subsidiaries are not listed on stock exchange markets. It is measured as

return on assets (ROA), consistent with Chang, Chung, and Moon, (2013), Chang (2019) and other international business studies concerned with subsidiary performance.

We define foreign buyout as a dummy variable, which is coded as "1" when the ownership of the subsidiary changes from less than 100% to 100%, and "0" otherwise. We also use 95% as an alternative threshold. This alternative threshold does not generate tangible impact on our results as we only find two cases where the foreign ownership changed to 95%.

To compare the performance of JVs that remained JVs and those that were transformed into WOSs, we need to control for potential endogeneity associated with the transformation, i.e., foreign buyout. We use a matching technique based on propensity scores (Rosenbaum & Rubin, 1985) by selecting a control group of firms that do not receive the foreign buyout treatment but have characteristics similar to those of the treated firms (namely, where foreign buyout took place). Matching is performed based on the propensity score, and two additional criteria: two digit industry code and year. Matching eliminates differences between the matched foreign buyout firms and the remaining Sino-foreign JVs due to the observable characteristics. However, there might be other systematic differences between the treated and control groups that are not captured by observable characteristics. Using a difference-in-differences propensity score matching estimator alleviates the issue by eliminating unobservable time-invariant difference between the treated and control groups. It differs from the standard difference-in-differences estimator by including only treated firms within the common support and weighting of the control group firms according to Mahalanobis' distance within caliper matching rather than linearly (Heckman, Ichimura, & Todd, 1997; Smith & Todd, 2005).

Another advantage of our data is that the fact that the foreign buyout events occur at different times in our longitudinal dataset alleviates concerns that the outcome observed after treatment is caused by factors related to the time of the treatment rather than to the treatment itself. But it also poses a practical issue of how to assign counterfactual treatment dates to the firms in the

potential control group. We align observations in event time and assign counterfactual treatment dates at random to the firms that never receive treatment proportionally to the fraction of acquired firms that receive treatment in each calendar year (Eichler & Lechner, 2002). Thus the group of treated firms consist of all firms that are subject to foreign buyout, whereas the control group includes those firms that remain Sino-foreign JVs through the span of the data.

3.3 Variables for propensity score matching (PSM)

We have subsidiary-level control and country-level control variables (i.e., home country of foreign MNEs) that are used for constructing difference-in-differences PSM. Theoretical priors have guided our choice of these variables. However, their individual significance is of limited importance since variables should be good enough predictors of foreign buyout treatment to meet the conditional independence assumption required for PSM, but not perfect predictors because this would exacerbate the common support problem (Smith & Todd, 2005).

Specifically, we include ROA and two aspects of firm size: the natural logarithm of total assets and the natural logarithm of employment. ROA is to control for prior performance. Size is to consider that large operations can be attractive but require greater financial investment and therefore can be more risky for buyout. We include the firm's *relative* labor intensity by scaling its labor-to-capital ratio to that of the two-digit industry and year mean to control for productive efficiency. The fraction of firm annual sales in industry annual sales is used as a proxy for its market power. It is likely that greater market power increases the probability of foreign buyout. The ratio of sales to total assets is used to proxy for the degree of capital intensity, which controls for the ability of the assets to generate revenue. We also control for the age of the firm (e.g., the JV) since it would be a proxy for learning having taken place between partners (Chowhury & Chowhury, 2001; Habib & Mella-Barral, 2007). Previous studies have found some evidence that the longer JVs have been in operation in China, the

better their performance (Child & Yan, 2003; Chen, 2008). There might be a positive correlation between the age of the operation, and the probability of foreign buyout. We include age squared as an additional control to accommodate possible non-linear effects. We also include the number of Chinese and foreign partners as controls. A large number of partners leads to more dispersed ownership structure, which can encourage the unification of control by a single shareholder (Grossman & Hart, 1986; Hart & Moore, 1990), but it might be costly to buy out multiple partners. We include the interactive terms of the number of partners and firm age to control for possible learning effects taking place. We then include the percentage of foreign ownership, which is expected to be positively associated with foreign buyout (Asiedu & Esfahani, 2001; Dhanaraj & Beamish, 2004; Noe, Revello, & Shrikhande, 2002). The fraction of expatriate employees in total employment is included as an indicator of foreign MNE involvement in the daily operation of the firm. A higher fraction may give the foreign MNE more confidence in managing the operation under a sole ownership arrangement and therefore increases the probability of foreign buyout. We also control the fraction of imports and exports in sales, and whether the operation has income from services. Inkpen and Beamish (1997, p.191) suggested that market-seeking subsidiaries may be more likely to be acquired by the foreign party in the mature stage of operations. We suggest that this tendency might be equally possible for efficiency-seeking subsidiaries. As such, we include the ratio of export sales to total sales as a reversed proxy of market seeking. Our last firm level control is CEO succession, which is constructed by a dummy variable coded as "1" if the CEO underwent a change.

The country level controls are three country dummies indicating their income levels, cultural distance based on Hofstede's six cultural dimensions, linguistic linkage with China as an alternative to cultural distance, geographic distance between the country of origin of the MNE (the capital) and Wuxi, government effectiveness, political stability and the rule of law,

regulatory quality, voice and accountability, corporate tax rate and exchange rate. The cultural and geographic variables may influence foreign buyout in the way that the larger the distance it is, the lower the benefit that a foreign buyout may generate (e.g. Rauch, 2001; Grossman & Helpman, 2004). We include a series of governance variables because it is possible that foreign partners from better governance regimes would be less likely to buyout their Chinese firms due to the challenges of adjusting to the weak legal and institutional environment in China (Shleifer & Vishny, 1997). The corporate tax and exchange rate could influence the decision of foreign buyout by affecting the finance and tax positions of the operation.

The definitions of all variables are explained in greater detail in Table 1. Table 2 presents their descriptive statistics. The pairwise correlation matrix of our key variables can be found in the online Appendix 1 via the *Journal of World Business* website.

4. Empirical results

4.1 Propensity score estimation

Before reporting our main results, we outline propensity score estimation results, focusing on those significantly impacting on the probability of foreign buyout. In Table 3, we regress the foreign buyout dummy on the firm-level and country-level control variables described above. All control variables are lagged one period. Nominal variables are deflated using the corresponding industry-specific producer price index as reported in China's statistical yearbooks. All level variables are in natural logarithm form. To eliminate outliers, we winsorize all variables at the 1% level, with the exception of dummy variables, and foreign ownership percentage.

We find that, firstly, JVs with higher industry market share are more likely to be bought out by foreign partners, indicating that high visibility and market power are attractive to foreign MNEs. Secondly, foreign ownership percentage has a significant and positive effect on the

probability of foreign buyout, suggesting a high initial commitment enables buyouts by posing a lower hurdle to full ownership. Thirdly, foreign partners from higher and middle income countries are less likely to buy out their local partners, possibly indicating that the greater the initial differences between partners, the lower the probability of buyout. Fourthly, we do not find a significant role for the cultural distance based on Hofstede's cultural dimensions (as shown in Column 1), but when we use "linguistic linkage" as an alternative (as shown in Column 2), it is a statistically significant and positive estimator. Finally, echoing the results of Desai et al. (2004), we find that high foreign statutory corporate tax rates encourage buyouts, implying that international tax planning is an important predictor for foreign buyout.

Because our data contains information on the country of origin of investing MNEs, we report the frequency and percent of treatment and control group firms by country of investment origin in the online Appendix 2. There are thirty eight countries of origin of the subsidiaries in Wuxi, and we observe foreign buyouts in sixteen of them, among which Hong Kong, Japan and the U.S. have the majority. Their distribution in treated group and control groups is largely proportionate to their total number of JVs. For example, although foreign buyouts by Japanese MNEs constituted 15% of all foreign buyouts, 16% of all JVs were those between Chinese and Japanese MNEs in the first place. We also report industry distributions of treated and control groups in the online Appendix 3.

4.2 Matching estimates: whole sample

The top panel in Table 4 presents the difference-in-differences matching estimates for the treated group and the matched control group, where the matched firms are chosen with replacement from among the control groups firms (JVs that remain JVs) using one-to-one Mahalanobis matching within calipers. Overall, foreign buyout does not lead to better or worse performance. The bottom panel reports results of the before-after difference in performance

(i.e., ROA) between the treated and the control group *without* PSM. The unconditional effect of foreign buyout also shows no significant differences in the ROA of treated and matched firms over the four-year period subsequent to the foreign buyout event. This result is similar to McConnell and Nantell (1985) who found little performance difference between U.S. JVs and M&As, Blomstrom and Sjohilm (1999) who found that the degree of foreign ownership does not significantly affect operating performance, and Chang, Chung, and Moon (2013) and Chang (2019) who found that overall foreign buyouts of JVs in China do not lead to performance change.

4.3 Hypothesis 1: matching estimates for efficiency-seeking subsidiaries

We define efficiency-seeking subsidiary based on each firm's average ratio of exports to total sales. Thus, firms with above average export intensity are labelled efficiency-seeking and the rest market-seeking. This measurement is quantified at *t*, which is also when the foreign buyout takes place. Our results, presented in the top panel of Table 5, directly compare the outcome for the two groups of firms, conditional on foreign buyout. The treated group includes those experienced foreign buyout as well as having efficiency-seeking operations. The control group includes those that experienced foreign buyout but have market-seeking operations. Both groups are selected based on PSM with common support as performed in Table 4.

We find that converted WOSs that are efficiency-seeking (i.e., the treated group) experience a 8.4% and 13.7% cumulative improvement in ROA relative to those market-seeking firms two and three years after foreign buyout, respectively. The result lends support to our first hypothesis that the value of full foreign ownership is higher for efficiency-seeking subsidiaries. The improvement likely occurs with a lag (one year), since it takes time to implement changes in the firm.

The bottom panel of Table 5 reports the results of unadjusted difference-in-difference estimates comparing the treated and control groups. That is, the selection of control groups is not based on PSM. The results are divergent from those in the top panel, suggesting the importance of a stringent matching. Also interesting is that the overall trend of *ex post* performance moves more towards a positive trajectory shown in this bottom panel, i.e. three years after the foreign buyout, although still remaining statistically nonsignificant. The coefficient is 0.068, but the standard deviation is 0.045.

4.4 Hypothesis 2: matching estimates for foreign buyouts with CEO succession

To investigate whether foreign buyouts that are accompanied by CEO succession outperform those without, we first perform an auxiliary test to evaluate whether the incidence of CEO succession is higher in cases with foreign buyouts compared to those without. We find that, based on difference-in-differences combined with PSM in the top left panel of Table 6, foreign buyouts lead to 24.1% higher CEO succession in the year post-buyout among treated firms compared with matched control group firms. This result indicates that foreign parent MNEs are eager to restructure their solely owned operations to better suit their strategic goals. In the bottom left panel of Table 6, we find similar results where propensity score is not considered.

We then examine whether the CEO succession is beneficial by evaluating its effect on ROA, conditional on foreign buyout. To mitigate simultaneity, we limit our observations (the treated group) which experienced CEO succession *one year after* foreign buyout. We find that, as reported in the top right panel of Table 6, firms with the CEO displaced (one year after foreign buyout) experience 10.1% and 12.8% greater cumulative changes in ROA two and three years after the buyout event compared with matched control group firms, where the control group consists of bought-out firms without CEO succession. This result suggests that foreign buyout accompanied by top management succession enables stronger managerial control by the

foreign parent over the subsidiary, i.e., lower agency costs, thus leading to stronger performance.

The results without PSM is presented in the bottom right panel, where no such effect is observed, once again suggesting the importance of stringent matching.

5. Discussion and conclusion

5.1 Contributions

By applying incomplete contract theory and an agency view, we provide original understanding on the performance implications of foreign buyouts of international equity JVs. Our findings suggest that, on the one hand, it is the alignment between ownership and the owner's contribution to the operation, rather than ownership *per se,* that holds the key to ex post performance improvement because this alignment reduces contractual difficulties and incentivizes the *right* party to contribute (Hart, 1998; Hubbard, 2004; Antras, 2013). On the other hand, the alignment between the owner and the owner's managerial control over the operation, rather than ownership *per se*, gives rise to ex post performance improvement because the alignment mitigates agency costs. The findings strongly support the principle insight shared by the two theoretical perspectives: the reduction of contractual frictions is an important source of performance improvement. Thus, we complement extant literature in that the importance of MNEs' ownership of subsidiaries does not merely arise from the control of intangible assets such as R&D or advertising (Chang, 2019), but also from other headquarter intensive services and inputs that can be difficult to contract. And no less importantly, ownership without effective managerial control - such as appointing new CEOs - may not deliver the anticipated performance improvement because of the inherent agency costs associated with incumbent CEOs after ownership switch.

Our findings are facilitated by our empirical focus on the subsidiary characteristics, which departs from, but complements, industry and regional focused analysis in previous studies (Chang, 2019; Chang, Chung, & Moon, 2013). We also provide rigorous analysis by employing propensity score matching with difference-in-differences estimation that not only deals with the selection bias associated with foreign buyouts but also eliminates time invariant unobservables that would bias our performance analysis. The selection and endogeneity issues receive limited attention in international business research but our analysis shows the imperative of employing these appropriate statistical methods to attain reliable analysis.

5.2 Implications for managers and policy makers

Several managerial and policy implications emerge from our analysis. First, China's economic success in the past decades has been in part fueled by its targeted export growth. China's integration into the world trade system through WTO accession is likely to have strengthened China's attraction for efficiency-seeking FDI, in which the foreign MNEs' inputs are often more critical, as shown in our analysis. However, two newer trends may blunt China's advantage. One is rising labor costs (Tomizawa, Zhao, Bassellier, & Ahlstrom, 2020). The other, which might be more challenging, is China's trade relations with the U.S. and potentially other developed countries, set against the backdrop of increasing skepticism about the benefits of globalization (Cuervo-Cazurra, Doz, & Gaur, 2020). These trends could shift subsidiary mandates, reversing JV as a preferred operational mode. Subsidiary managers may consider shifting their operational focus to the Chinese domestic market to realign the partial ownership and operational orientations so as to mitigate efficiency loss that could arise from ownership-operation misalignment.

Second, our results indicate that it is through the change of CEO that performance improvement is attained in WOSs. This implies that, from the parent MNEs' perspective, it is

important to mitigate agency costs in subsidiaries. While appointing a new CEO represents a strong form of managerial control through selection, foreign MNEs may choose other means to mitigate agency costs. These can include ensuring clear and sufficient communication between the subsidiary and corporate headquarters, regular internal audits of management actions, outcome-based performance monitoring, and adopting more stringent accounting and auditing standards.

From a government policy perspective, artificially restricting ownership choices of MNEs may adversely introduce performance inefficiency to subsidiary operations. Ownership restrictions that compel MNEs to operate as JVs may also prompt MNEs to strategically align the prescribed ownership arrangement with their operational decisions, for instance, through focusing on the domestic market but not overseas markets, and restricting knowledge transfer from headquarters to control unintended spillovers (Liu, Lu, & Yang, 2019). The optimal way to encourage joint ownership seems to be through the competence of local firms: when their knowledge and connections are critical, joint ownership is likely to be voluntarily pursued by MNEs. It is therefore suggested that government ownership restrictions might be kept at minimum.

5.3 Limitations and future research

Our study has limitations. For example, we do not have foreign or Chinese parent information about the JVs, which prevents us from directly observing their contributions to the operations of JVs. Thus, the inference based on subsidiary type, i.e., efficiency-seeking, is indirect, although it is derived from prior theoretical studies. Due to the fact that we use data that record all firms with foreign equity participation (from partial to full foreign participation), they will automatically drop out of the dataset once they are bought out by their Chinese parent. This makes it impossible to analyze Chinese buyout cases, as in Chang

(2019). Also, unlike studies focusing on CEO succession, which often differentiate forced from voluntary succession, we do not have the requisite information.

In addition to addressing these limitations with relevant secondary data, primary data collection might ensure future research address the constraints of secondary data by capturing the qualitative aspects of foreign buyout of international equity joint ventures in China. For instance, partner conflicts and the nuance and power dynamics of parent-subsidiary relations, particularly relating to CEO succession. Future research may also explore how ex post organizational integration unfolds in converted WOSs. Given that an organization can be conceptualized as a nexus of relationships (Nohria, 1992), a rich research agenda would be to investigate how new relationships – which are not only the consequence of foreign buyout but also have implications for how the transformed organization will perform - are configured and facilitate the future operations and performance of the MNE in China. Consequently, future research can provide richer accounts of the inner workings of foreign buyouts.

5.4 Conclusion

We commenced our paper with questions around the conditions under which foreign buyout may lead to performance improvements. Consistent with prior studies (Chang, Chung, & Moon, 2013; Chang, 2019), we find that foreign buyout *per se* does not lead to better or worse performance. Foreign buyouts with operations oriented towards overseas markets, for which foreign MNEs' inputs are most crucial, and foreign buyouts with CEO succession, attain stronger *ex post* performance. This indicates the importance of two alignments: one is that between ownership and owner's contribution to the operation, and the other is that between ownership and owner's managerial control.

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Table 1. Variable Definitions

Variable Name	Definition
Treatment Dummy	Indicator variable equal to 1 in the year the JV transitions from Sino-foreign JV to foreign owned firm, and 0 otherwise.
JV Characteristics	
ROA	Return on assets defined as the ratio of total profits to total assets.
Log Total Assets	Natural log of total assets. Reported in tens of thousands of 2001 RMB.
Log Employees	Natural log of the number of employees.
Labor/Capital Ratio Relative to Industry Mean	Labor to capital ratio relative to mean foreign JVs industry-year labour to capital ratio.
Industry Year Market Share	Proportion of sales out of total foreign JVs industry-year sales.
Sales/Total Assets	The proportion of sales out of total assets.
Enterprise Age	Years since incorporation.
Enterprise Age Squared	Years since incorporation squared.
Number of Chinese Investors	Number of Chinese partners in JV.
Number of Chinese Investors Squared	Number of Chinese partners squared.
Chinese Investors x Age (corrected)	Number of Chinese partners interacted with enterprise age.
Number of Foreign Investors	Number of foreign partners in JV.
Number of Foreign Investors Squared	Number of foreign partners squared.
Foreign Investors x Age (corrected)	Number of foreign partners interacted with Enterprise age.
Foreign Owned %	Foreign owned % of registered capital.
Expat Employees/Employees	Fraction of foreign employees in total employees.
Imports/Total Sales	Fraction of imports in sales.
Exports/Total Sales	Fraction of exports in sales.
Service Income Dummy	Indicator variable equal to 1 if firm has service income, and 0 otherwise.
CEO Succession	Indicator variable equal to 1 if firm experiences CEO succession and 0 otherwise
Foreign Country Characteristics	
High Income Country Dummy	Indicator variable equal to 1 if dominant foreign partner is from a high income country as defined by the World Bank World Development Indicators, and 0 otherwise.
Middle Income Country Dummy	Indicator variable equal to 1 if dominant foreign partner is from a middle income country as defined by the World Bank World Development Indicators, and 0 otherwise.
Kogut Singh 6 Dimensions Index	Index defined based on Hofstede's 6 cultural dimensions, relative to China.
Linguistic Linkage	Indicator variable equal to 1 if foreign and domestic partner share a common language, and 0 otherwise.
Log Distance	Log distance in miles from foreign country capital.
Control of Corruption	Extent to which public power is exercised for private gain. Source: World Bank Worldwide Governance Indicators.
Government Effectiveness	Quality of civil and public services. Source: World Bank Worldwide Governance Indicators.
Political Stability and Absence of Violence/Terrorism	Likelihood that the government will be destabilized or overthrown by unconstitutional or violent means. Source: World Bank Worldwide Governance Indicators.
Rule of Law	Quality of contract enforcement, property rights, the police, the courts, and the likelihood of crime and violence. Source: World Bank Worldwide Governance Indicators.
Regulatory Quality	Ability of the government to formulate and implement sound policies and regulations promoting private sector development. Source: World Bank Worldwide Governance Indicators.
Voice and Accountability	Extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Source: World Bank Worldwide Governance Indicators.
Corporate Tax Rate	Corporate tax rate. Source: KPMG Corporate Tax Rates Survey.
Exchange Rate	RMB per unit of foreign currency. Source: IMF International Financial Statistics.

Table 2. Summary Statistics

	Obs	Mean	Std. Dev.
JV variables			
Treatment Dummy	998	0.086	0.280
Firm Characteristics			
ROA	998	0.019	0.143
Log Total Assets	998	7.404	1.495
Log Employees	998	4.318	1.190
Labor/Capital Ratio Relative to Industry Mean	998	0.658	0.946
Industry Year Market Share	998	0.012	0.041
Sales/Total Assets	998	1.395	$1.^{3}86$
Enterprise Age	998	5.600	3.907
Enterprise Age Squared	998	46.608	53.227
Number of Chinese Investors	998	1.149	0.411
Number of Chinese Investors Squared	998	1.490	1.440
Chinese Investors x Age	998	6.617	6.351
Number of Foreign Investors	998	1.118	0.383
Number of Foreign Investors Squared	998	1.397	1.370
Foreign Investors x Age	998	6.265	5.136
Foreign Owned %	998	0.468	0.217
Expat Employees/Employees	998	0.009	0.040
Imports/Total Sales	998	0.112	0.606
Exports/Total Sales	998	0.102	0.187
Service Income Dummy	998	0.022	0.147
CEO Succession	998	0.118	0.323
Foreign Country Characteristics			
High Income Country Dummy	998	0.962	0.191
Middle Income Country Dummy	998	0.037	0.189
Kogut SIngh 6 Dimensions Index	998	1.469	1.389
Linguistic Linkage	998	0.555	0.497
Log Distance	998	7.166	1.080
Control of Corruption	998	1.434	0.534
Government Effectiveness	998	1.423	0.442
Political Stability	998	0.838	0.403
Rule of Law	998	1.277	0.405
Regulatory Quality	998	1.461	0.449
Voice and Accountability	998	0.633	0.529
Corporate Tax Rate	998	26.130	10.666
Exchange Rate	998	2.651	3.308

Notes: All level variables denominated in RMB expressed in natural logs of tens of thousands of real 2001 RMB.

Table 3. Probit Estimate of foreign buyout

	(1)	(2)
Firm Characteristics		
ROA	0.036	0.010
	[0.056]	[0.055]
Log Total Assets	-0.002	-0.002
	[0.009]	[0.009]
Log Employees	0.008	0.008
	[0.010]	[0.010]
Labor/Capital Ratio Relative to Industry Mean	-0.017	-0.017
	[0.014]	[0.014]
Industry Year Market Share	0.322*	0.342**
	[0.172]	[0.171]
Sales/Total Assets	-0.004	-0.004
	[0.007]	[0.007]
Enterprise Age	-0.004	-0.005
	[0.007]	[0.007]
Enterprise Age Squared	0.000	0.000
	[0.000]	[0.000]
Number of Chinese Investors	-0.125	-0.101
	[0.151]	[0.143]
Number of Chinese Investors Squared	0.024	0.018
	[0.047]	[0.044]
Chinese Investors x Age	0.003	0.003
	[0.004]	[0.004]
Number of Foreign Investors	-0.030	-0.014
	[0.123]	[0.122]
Number of Foreign Investors Squared	-0.004	-0.011
	[0.036]	[0.036]
Foreign Investors x Age	0.004	0.005
	[0.004]	[0.004]
Foreign Owned %	0.221***	0.223***
	[0.034]	[0.034]
Expat Employees/Employees	-0.191	-0.147
	[0.289]	[0.265]
Imports/Total Sales	0.006	0.007
	[0.009]	[0.009]
Exports/Total Sales	-0.028	-0.029
	[0.042]	[0.041]
Service Income Dummy	0.039	0.036
	[0.060]	[0.058]
CEO Succession	-0.006	-0.007
	[0.019]	[0.018]
Foreign Country Characteristics		
High Income Country Dummy	-0.978***	-0.979***
	[0.007]	[0.007]
Middle Income Country Dummy	-0.084***	-0.091***
	[0.022]	[0.023]
Kogut Singh 6 Dimensions Index	0.021	
	[0.018]	
Linguistic Linkage		0.190**
		[0.088]
Log Distance	-0.055*	0.034
	[0.028]	[0.027]
Control of Corruption (High=good)	-0.102	-0.105*
	[0.064]	[0.058]
Government Effectiveness (High=good)	0.091	0.007
	[0.057]	[0.061]
Political Stability and Absence of Violence (High=good)	0.020	0.015
	[0.033]	[0.030]
Rule of Law (High=good)	0.038	0.057
	[0.087]	[0.078]
Regulatory Quality (High=good)	0.042	0.039
	[0.056]	[0.052]
Voice and Accountability (High=good)	-0.023	0.053
	[0.034]	[0.035]
Corporate Tax Rate	0.003**	0.004**
	[0.002]	[0.002]
Exchange Rate (RMB/Foreign Currency)	0.003	-0.004
	[0.005]	[0.005]
Observations	998	998
Pseudo R2	0.231	0.242

Notes: The dependent variable is a dummy variable equal to 1 if a JV is transformed into a wholly owned foreign subsidiary and 0 otherwise. ROA is the measure of performance. The table reports marginal effects or the change in probability of an event for an infinitesimal change in each independent continuous variable and the change in probability for discrete changes in independent dummy variables, where the rest of the independent variables are set at their means. All level variables measured in currency are expressed in natural logs of tens of thousands of real 2001 RMB. All variables except company age, foreign holding, and dummy variables are winsorized at the 1% level. Time varying variables are lagged one period. All regressions contain industry and time dummies. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Performance Matching Estimates: whole sample

Outcome	ROA		
		On Support	
t	Matching Estimate	Treated firms	Controls firms
	Difference-in-differences combined with propensity score matching estimates		
		Number of treated	Number of controls
t-1, t	0.028 [0.028]	83 {0.010}	67 {-0.017}
t-1, t+1	0.035 [0.027]	69 {0.021}	54 {-0.016}
t-1, t+2	0.038 [0.030]	53 {0.040}	40 {0.005}
t-1, t+3	0.062 [0.050]	41 {0.131}	34 {0.058}
Unadjusted difference-in-differences estimates			
t-1, t	-0.015 [.028]	86 {0.008}	912 {0.021}
t-1, t+1	0.000 [0.020]	72 {0.020}	602 {0.020}
t-1, t+2	0.002 [0.021]	55 {0.036}	441 {0.033}
t-1, t+3	-0.002 [0.028]	43 {0.127}	304 {0.131}

Notes: Reports difference-in-differences matching estimates of performance over a 4 year horizon, following a foreign buyout event. The top panel reports estimates from one-to-one Mahalanobis matching with replacement within calipers based on propensity score, two digit industry code and year. The bottom panel reports unadjusted difference-in-differences estimates comparing treatment and control group firms. The Treated and Controls columns report the respective number of observations on the common support. Bootstrapped standard errors in brackets. Reported in braces are the differenced mean values of treated and control firms respectively.
*** p<0.01, ** p<0.05, * p<0.1.

Table 5. Performance Matching Estimates: efficiency-seeking

Outcome	ROA conditional on efficiency-seeking		
		On Support	
t	Matching Estimate	Treated firms	Control firms
	Difference-in-differences combined with propensity score matching estimates		
		Number of treated	Number of controls
t-1, t	0.024 [0.032]	53 {0.013}	25 {-0.009}
t-1, t+1	0.006 [0.025]	43 {0.027}	21 {0.022}
t-1, t+2	**0.084*** **[0.046]**	**34 {0.063}**	**14 {-0.019}**
t-1, t+3	**0.137**** **[0.064]**	**25 {0.150}**	**12 {-0.009}**
	Unadjusted difference-in-differences estimates		
t-1, t	0.000 [0.045]	54 {0.011}	32 {0.010}
t-1, t+1	-0.008 [0.030]	44 {0.029}	28 {0.036}
t-1, t+2	0.013 [0.031]	35 {0.061}	20 {0.052}
t-1, t+3	0.068 [0.045]	26 {0.156}	17 {0.087}

Notes: Reports difference-in-differences matching estimates of performance conditional on efficiency-seeking over a 4 year horizon, following a foreign buyout event. Treated firms are those with above average ratios of exports to sales, i.e. efficiency-seeking. The top panel reports estimates from one-to-one Mahalanobis matching with replacement based on propensity score, two digit industry code and year. The bottom panel reports unadjusted difference-in-differences estimates comparing treatment and control group firms. The On Support columns report the respective number of observations on the common support. Bootstrapped standard errors in brackets. Reported in braces are the differenced mean values of treated and control firms respectively . *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Performance Matching Estimates: CEO Succession

Outcome	CEO Succession			ROA conditional on CEO Succession		
		On Support			On Support	
t	Matching Estimate	Treated	Controls	Matching Estimate	Treated	Controls
	Difference-in-differences combined with propensity score matching estimates					
		Number of treated	Number of control		Number of treated	Number of control
t-1, t	**0.241*** [0.075]**	**83 {0.228}**	**69 {-0.010}**	0.015 [0.064]	32 {0.112}	17{0.099}
t-1, t+1	0.043 [0.069]	69 {0.057}	55 {0.017}	0.022 [0.034]	29 {0.101}	15 {0.082}
t-1, t+2	0.113 [0.107]	53 {0.078}	42 {-0.032}	**0.101** [0.047]**	**22 {0.194}**	**10 {0.087}**
t-1, t+3	-0.073 [0.102]	41{-0.047}	34 {0.026}	**0.128* [0.071]**	**18 {0.155}**	**9 {0.031}**
Unadjusted difference-in-differences estimates						
t-1, t	0.283*** [0.039]	86 {0.226}	916 {-0.051}	0.038 [0.043]	36 {0.113}	50 {0.081}
t-1, t+1	0.038 [0.046]	72 {0.061}	606 {0.027}	-0.011 [0.029]	32 {0.098}	40 {0.115}
t-1, t+2	0.071 [0.051]	55 {0.076}	449 {0.005}	0.046 [0.029]	26 {0.199}	29 {0.155}
t-1, t+3	0.061 [0.045]	43 {-0.048}	307 {-0.112}	0.040 [0.043]	22 {0.151}	20 {0.116}

Notes: Reports difference-in-differences matching estimates of performance, CEO succession and performance conditional on CEO succession over a 4 year horizon, following a foreign buyout event. The top panel reports estimates from one-to-one Mahalanobis matching with replacement within calipers based on propensity score, two digit industry code and year. The bottom panel reports unadjusted difference-in-differences estimates comparing treatment and control group firms. The Treated and Controls columns report the respective number of observations on the common support. Bootstrapped standard errors in brackets. Reported in braces are the differenced mean values of treated and control firms respectively. *** p<0.01, ** p<0.05, * p<0.1.