Jamie Hurst*

Department of Management and Marketing,

Durham University Business School,

University of Durham,

Durham, DH1 3LB, UK

Email: jamie.l.hurst@durham.ac.uk

*Corresponding author

Dylan Sutherland

Department of Management and Marketing,

Durham University Business School,

University of Durham,

Durham, DH1 3LB, UK

Email: dylan.sutherland@durham.ac.uk

Abstract

This paper explores (i) the extent to which emerging market MNEs, owing to their generally fragile and weaker domestic institutional environments, are more predisposed towards institutional arbitrage related FDI than developed market MNEs and (ii) identifies whether their institutional arbitrage behaviours are less responsive to domestic institutional change than those of developed market MNEs. We consider these questions by using the number of offshore tax haven based subsidiaries as a proxy for institutional arbitrage activity in 10,892 publicly listed developed market MNEs and 7,243 listed emerging market MNEs. Our results show EMNEs, other things being equal, do indeed have a higher propensity for offshore incorporation. At the same time, however, EMNEs appear less responsive to institutional change than DMNEs. We consider implications for extant mainstream EMNE related IB theory, such as the 'springboard theory', which predicts differences between these MNE types with regards to institutional arbitrage orientation and strategy.

Keywords

Institutional arbitrage

FDI

Emerging market MNEs

Developed market MNEs

Institutional fragility

Tax havens

1. Introduction

The unprecedented rate at which outward FDI has grown from emerging markets has garnered significant academic interest, not least concerning how the rise of emerging market (E)MNEs) may shape our understanding of International Business theory (Buckley et al. 2018). Many EMNEs have evolved in the context of comparatively fragile domestic institutional environments and are 'infants', often in the earlier stages of their development, sometimes also undertaking firm-level 'catch-up' strategies (Luo and Tung, 2007). Their development experiences, it is conjectured, may provide new impetus to IB theorizing. An important EMNE related debate, for example, motivated by mainstream IB theory (including the OLI model and internalization theory), has focused on the apparent paradox of the strategic-asset-seeking orientation of EMNEs (Sutherland et al. 2019) - poorly explained by mainstream IB theory according to some (Mathews, 2006; Luo and Tung, 2018).

A significant exploration of this paper surrounds the interesting trait of EMNEs' international expansion. A notion that has been conceptually explored, though subject to far less empirical scrutiny, is their conjectured predisposition to engage in 'institutional arbitrage' FDI strategies (Luo & Tung,

2018; Boisot and Meyer, 2008; Buckley et al. 2015). For EMNEs to successfully 'catch-up' with developed market (D)MNEs (Mathews, 2006; Luo and Tung, 2007), as well as acquiring world class technologies and brands, they must also avail of world class institutional environments (Luo and Tung, 2018). For example, Ge and Ding (2011) found the institutional environment to be significant when aiming to better understand the internationalisation strategies of EMNEs such as those from China. Indeed, without the latter (i.e. intellectual and other property rights protection, access to more liquid international capital markets, more sophisticated legal systems allowing for complex managerial incentive structures etc.) it may well become impossible to achieve the former (Buckley et al. 2015; Luo and Tung, 2018). Some high-profile EMNEs, for example, such as China's Fosun Group (one of China's largest private groups) have identified the use of offshore incorporation as a key stage in their growth as an MNE. In a speech given at the *China Europe International Business School*, co-founder Guo Guangchang has talked of offshore incorporation as 'laying solid foundations' for their further international development.[1] It did so, he explained, by facilitating entrance to a range of world class business institutions not previously accessible to Fosun Group in China.

Mainstream International Business theory, such as Luo and Tung's (2018) upward spiral process theory, unsurprisingly identifies institutional arbitrage as a central motivating factor for EMNE' FDI: 'home country institutions, together with offensive or defensive arbitrage arising from institutional differences between home and host countries, is another central element of the springboard perspective' (Luo and Tung, 2018: 139). This is because EMNEs often operate in domestic markets exhibiting political instability, red-tape, unfathomable government bureaucracy, weak judicial and regulatory systems, as well as limited market related information (often poor in quality owing to weak media outlets, sometimes state controlled) (Hoskisson et al., 2000; Meyer and Peng, 2016). Key markets, like those responsible for capital allocation, may function poorly as a result. Owing to these institutional voids, strong incentives exist to avail of more sophisticated institutional environments, so called 'defensive' escape FDI (Luo and Tung, 2018: Su and Tan, 2018). This study builds upon the work

[1] https://www.youtube.com/watch?v=IjbIRQ7jPYw

carried out by Wei and Alon (2010), who investigated the important determinants of Chinese outward FDI by Chinese MNEs, who found that key driving factors for OFDI is the desire to circumvent host country trade barriers, pursue technological advancements and acquire management expertise. In Fosun's case, for example, superior offshore institutions allowed it to raise large volumes of capital via engagement with world leading advanced business service providers. In turn it was able to learn about how to undertake further international FDI transactions (usually via other offshore subsidiaries in centres such as Hong Kong, the Cayman Islands and BVI), using offshore 'special purpose entities' (SPEs) through which it has now undertaken numerous further international M&A transactions.

Which national jurisdictions offer the best opportunities for institutional arbitrage? As the above example illustrates, tax havens, which can often double as offshore financial centres (hereafter we refer collectively to them as 'THOFCs'), renowned firstly for their low corporation tax rates, also typically have excellent institutional frameworks. This includes both their legal and associated financial systems (Sutherland, Voss and Buckley, 2014; Haberly and Wojick, 2015). Recent research, for example, has noted the prominently high levels of EMNE' FDI to THOFCs and has shown that a key motivation is to take advantage of their superior institutions (Buckley et al. 2015). Here we use institutional arbitrage related concepts, commonly employed in the EMNE literature, including Luo and Tung's (2018) popular 'springboard theory', to explore potential differences between EMNEs and DMNEs. This escapist perspective (Witt and Lewin, 2007; Luo and Tung, 2018) suggests EMNEs route FDI through THOFCs in part to avoid their own weak and fragile domestic institutional environments (Buckley et al. 2015), capitalising on stronger and more stable institutions, which are often offshore (Witt and Lewin, 2007; Boisot and Meyer, 2008). We thus consider whether EMNEs are more prone to engage in institutional arbitrage related FDI than DMNEs (Palan et al., 2010; Sharman, 2012). Is the propensity towards these types of institutional arbitrage FDI strategies, in other words, a characteristic of EMNEs that distinguishes their OFDI strategies from DMNEs? Do EMNEs invest more in THOFCs owing, as speculated, to their greater propensity for institutional arbitrage (Luo and Tung, 2007; Witt and Lewin, 2007; Boisot and Meyer, 2008)?

This study contributes to the IB literature by comparing THOFC use amongst MNEs originating from both emerging and developed markets. To date there is dearth of such comparative studies (Anderson et al. 2020). We first outline how the EMNE literature has emphasized institutional arbitrage as an important motive for EMNE FDI. Second, building from this, we explore a current gap in this literature, namely the responsiveness of institutional arbitrage type FDI to institutional change. Third, we discuss our methods, followed by our results and discussion.

2. Theoretical framework and hypotheses

2.1. *EMNEs and Institutional Arbitrage FDI*

There has been some interest in the role domestic institutions may play in shaping the internationalisation strategies of MNEs (Witt and Lewin, 2007). Although as Witt and Lewin (2007) have argued, historically theoretical arguments surrounding FDI as an 'escape' response to unfavourable domestic institutional conditions have been under-represented. This has changed somewhat, however, with the rise of EMNEs in recent times (Luo and Tung, 2007, 2018; Buckley *et al.*, 2015). In fact, many consider that EMNE internationalization strategies may be different to DMNEs owing in part to the influence of the (generally) weaker domestic institutional environments that EMNEs face (Khanna and Palepu, 1997).[2] Luo and Tung (2007; 2018), for example, consider the early stages at which EMNEs internationalise, the 'aggressive' strategies they employ (i.e. acquisitions), as well as their tendency towards undertaking FDI into developed markets, as being driven by their weak domestic institutions (Luo and Tung, 2007; 2018). Luo and Tung (2018) note in their updated springboard 'theory', one that was originally developed with the purpose of explaining EMNE behaviours (Luo and Tung, 2007), how 'country of origin matters' and how springboard EMNEs 'systematically and recursively use international expansion to …. *reduce vulnerability to home*

[2] According to Barnard and Luiz (1998), the idea of escape FDI can be traced back to as early as 1983, when Lall 'argued that FDI could be a "logical means of escape" for what he termed third world multinationals' (Barnard and Luiz, 2018)(p. 605)

institutions' (2018: 130) (emphasis added). These activities, they argue, stand somewhat at odds with predictions of earlier international business models, many of which were based around the experiences of DMNE (most of which have developed under a different set of historical conditions). Thus, the Internationalization Process Model (IPM), often noted for its predictions of incrementalism in internationalisation, is considered not very suitable for explaining EMNEs, in part because of the speed and early stage of their development at which they internationalize (Mathews, 2006; Luo and Tung, 2007). 'Escape' FDI, driven by domestic institutional weakness and the possibility of exploiting superior overseas institutions via FDI, is considered more common among EMNEs.

The role of domestic institutional conditions as a driver of EMNE FDI has subsequently been most commonly explored in the context of EMNEs from *specific* countries or regions. Boisot and Meyer (2008), for example, in one of the earliest contributions, consider the case of Chinese outward FDI. They argue Chinese MNEs, particularly smaller sized businesses, may be more prone to undertaking 'escape' FDI. This is owing to the high costs they face in expanding domestically. In the Chinese case, they view the role of provincial boundaries as discontinuous, thus forming discrete barriers to *domestic* business expansion. They argue that 'local protectionism and inefficient domestic logistics', make supra-provincial domestic investments spanning province boundaries difficult, if not impossible, to undertake (Boisot and Meyer, 2008). Chinese businesses, they argue, may therefore instead find it less costly to make their investments outside of China in far earlier stages of their development than if these provincial barriers did not exist. In a similar vein to others (Luo and Tung, 2007; 2018), they argue such MNEs may invest in jurisdictions where property rights are more safely guarded. As such, '*strategic exit* from the home country, rather than *strategic entry* into foreign markets, may explain the internationalization of many Chinese firms' (Boisot and Meyer, 2008: 349) (emphasis added).

Looking at the case of Russian MNEs investing in Finland, Golikova et al. (2013) also find evidence that their FDI may be as much about 'escape from Russia as [it is about] entry to the foreign market in search for a more favourable institutional environment' (Golikova and Karhunen, 2014, p. 1). They show how Russian MNEs have used Finland as an intermediate safe haven location from which they are able to 'learn how to operate in an institutional environment different from Russia'(Golikova and

Karhunen, 2014). Finland's market potential and/or other traditional 'pull factors' for internationalization, they contend, is not in fact the most important motivation for Russian FDI.

In another country specific study, looking at the 'hyper turbulent' environment of the Lebanon, Fathallah et al. (2018) note how domestic businesses used foreign markets as an essential way of hedging against domestic market turbulence: 'challenges at home made internationalization necessary to sustain, safeguard, and scale business concepts once thriving at home' (Fathallah, Branzei and Schaan, 2018). Again, in their argument they highlight the way in which comparatively immature EMNEs (contrasted with say DMNEs) are in general highly dependent upon their home market: 'firms born or based in emerging market contexts depend almost exclusively on their country of origin'. As such, this engenders great sensitivity to domestic market uncertainty, in turn making: 'them willing to take greater risks, i.e. by pursuing more distant or riskier host contexts' (Fathallah, Branzei and Schaan, 2018). Finally, using a similar approach but focusing on a historical study of South Africa in the 1956 to 2012 period, Barnard and Luiz (2018) explore situations in which 'escape FDI' is triggered. They find that when 'the future "rules of the game" are unknown', escape FDI is encouraged (Barnard and Luiz, 2018), thus emphasizing the role of uncertainty.

While the above research focuses on MNEs from individual countries, a weakness in extant research is its lack of depth in the analysis of: (a) the host nations targeted and; (b) the specific institutional deficits EMNEs look to 'arbitrage'. As regards (a), *studies exploring the cases of* China and India support the idea that THOFCs are common location choices for institutional arbitrage related FDI. Looking at the Chinese case, for example, Buckley et al. (2015) showed that historical factors created incentives for domestic Chinese businesses to establish offshore parent companies and "round-trip" capital back to China. Limited access to domestic capital markets, in particular in the private sector, strongly drove private businesses towards offshore financing channels (Buckley *et al.*, 2015). [3] Domestic interference and restrictions on the OFDI projects of Chinese businesses, moreover, caused many Chinese businesses to route FDI via offshore vehicles (to circumvent these restrictions). Chinese

[3] Hong Kong and other havens closely linked to it, particularly the British Virgin Islands (hereafter BVI) and Cayman Islands (historically linked by their common membership of the former British Empire) proved very convenient conduits for offshore financing.

enterprise income tax law, moreover, also for many years favoured foreign MNEs over domestic businesses. This provided strong incentives to move offshore and round-trip capital back to China. This has been achieved via 'escape' FDI looking to arbitrage the specific capital and property rights advantages found in specific offshore tax havens (for China, the Cayman Islands (capital markets) and Hong Kong/BVI (secrecy and secure property rights) have been especially important. [4]

In a country level empirical study, focusing on India, Chari and Acikgoz (2016) show that Indian MNEs engaged in FDI to THOFCs for institutional arbitrage related purposes. They looked in particular at offshore M&A transactions via THOFCs and find many are driven '*by the need to escape or take advantage of institutional weakness in their home country*' (p. 664) (emphasis added). They argued also that 'Tax haven destinations…are important hosts and intermediaries for institutional arbitrage strategies' (M. Chari & Acikgoz, 2016, p. 664). In the Indian case, for example, Mauritius has proved to be an important host location for institutional arbitrage types of FDI. This is again in part related to its important role as a financial centre. Russian MNEs, moreover, have been identified using Cyprus as a base for institutional arbitrage and Brazilian MNEs the Cayman Islands (Buckley *et al.*, 2015).

These country level studies suggest that THOFCs are indeed convenient jurisdictions for institutional arbitrage related escape FDI. As regards point (b), moreover, they show that the specific institutional deficits EMNEs look to 'arbitrage' are often quite specific. For example, the literature shows that EMNEs can especially benefit from improvements in capital market and related property rights markets, as well as offshore advanced business service providers (Sutherland and Ning, 2011; Buckley *et al.*, 2015). This, it has been suggested, is not only because of their low taxes but also, importantly, their excellent institutional environments. This explains why so much THOFC related FDI is directed towards *specific* jurisdictions: most tax havens offer low or zero taxes, but relatively few can provide the specific legal and financial institutions necessary to further accelerate their businesses growth. Tax advantages, in other words, are just one of the benefits of offshore incorporation.

[4] Chinese FDI data, unsurprisingly, has had (and continues to have) an unusually large bias towards THOFCs (particularly Hong Kong, the BVI and CI). By 2010 over 60% of Chinese FDI stock was channelled to THOFCs, compared to an average of around 25% for developed market economies (Sutherland and Anderson, 2015).

To summarise, institutional arbitrage theorizing to date has focused largely on the low *levels* of domestic institutional development and how these may influence EMNE escape FDI which may help MNEs avail of superior foreign institutional environments (Witt and Lewin, 2007; Boisot and Meyer, 2008; Luo and Tung, 2018). THOFCs, moreover, have been identified as among the more important locations that EMNEs use for institutional arbitrage related purpose (Buckley et al., 2015; M. Chari & Acikgoz, 2015; Wojcik, 2013). Locating in such jurisdictions helps address some of the key institutional deficits that EMNEs face, particularly capital market and legal institutional voids (Buckley *et al.*, 2015). All of these studies, however, have focused on *individual* emerging market contexts. If EMNEs are indeed different to DMNEs because they have a greater tendency towards institutional arbitrage related FDI, can these differences be identified in a broader sample of both EMNE and DMNEs?

Hypothesis 1. EMNEs, other things being equal, have a greater propensity to engage in tax haven related institutional arbitrage outward FDI than DMNEs.

2.2. *The evolution of domestic institutions and EMNE/DMNE comparative responsiveness*

The EMNE literature has placed an emphasis on the role of underdeveloped domestic market institutions as a driver of EMNE behaviours (Luo and Tung, 2007; 2018; Buckley et al. 2018). Institutional environments, however, are dynamic and evolve, raising the question of how institutional arbitrage strategies respond to institutional change. Shi et al. (2017), for example, have recently considered the notion of 'institutional fragility' referring to mismatches in the *evolution* of different components of domestic institutions, finding that the unevenness in the evolution of institutions affects outward FDI.[5] Thus, their analysis moves from a relatively static notion of *levels* of institutional development, to one of *changes* in institutions over time (and MNE responsiveness to that change). Extending this idea to an international context, it is interesting to consider whether EMNEs and DMNEs

[5] They look at Chinese MNEs and again they employ a single emerging market country case for their empirical analysis.

may differ in their *responsiveness* to institutional change. In other words, as institutions evolve, becoming either better or worse over time, do EMNEs and DMNEs respond via escape FDI with equal rapidity? There is comparatively little theorising on this question (Shi *et al.*, 2017; Barnard and Luiz, 2018). This is partly because within mainstream EMNE literature, such as the 'springboard perspective/theory' (Luo and Tung, 2007, 2018), as well as the more specific 'institutional arbitrage' focused literature (Witt and Lewin, 2007; Boisot and Meyer, 2008), the impact of overall institutional *levels* has attracted the majority of research attention. Witt and Lewin (2007) did raise the question of whether coordinated or liberal market economies responded more quickly to extra-institutional pressures (i.e., they explore impacts of societal coordination on institutional change). Their argument that coordinated marked economies are less responsive, however, has been criticised for its ahistoricism and over simplistic empirical analysis (Kobrak et al. 2018).

We argue EMNEs are more likely to be accustomed to dealing with institutional changes and thus less responsive to changes in levels of institutions over time. This is because, firstly, emerging market businesses are more accustomed to volatile institutional environments. For example, the formation of diversified business groups is considered one such mechanism (Khanna and Yafeh, 2007). As well as reducing transaction costs in specific areas (like imperfect capital, labour and product markets, business groups are well placed to lobby local political actors (Khanna and Palepu, 1997)): 'by being exposed to high levels of home country uncertainty in the form of political risk and corruption, *firms develop an uncertainty management capability at home*' (Cuervo-Cazurra *et al.*, 2018).

Secondly, as EMNEs are generally far more dependent upon their home market, owing to their comparative lack of international business activities (*vis* a *vis* DMNEs), they have fewer possible opportunities to divert their activities to other markets. They are, to a greater extent, wedded to their domestic market base and must, accordingly, develop strategies for dealing with its challenges. Escape options, in other words, are not as readily available. Relatedly, they also have less actual experience of 'escape FDI' (Zhou and Guillen, 2015). As a result, we suggest, emerging market businesses are more likely develop stronger coping mechanisms to deal with institutional volatility, when compared with DMNEs.

As noted, some recent research on 'institutional fragility' has started to explore the question of how domestic institutional change influences EMNE' FDI (Barnard & Luiz, 2018; Shi et al, 2017). Shi et al. (2017), for example, explore the way in which the asynchronous nature of institutional development may influence 'escape' (i.e., institutionally motivated) FDI. They, however, look specifically at changes over time in five different institutional dimensions, including the relationships between; government and business, private sector development, product market development, factor market development, and the legal system and law service intermediaries (p.454). Shi et al (2017) find many Chinese provinces 'have progressed along these five dimensions at different paces, thus creating a misaligned restructuring process' (p.454). They refer to these imbalances as 'institutional fragility'.

Shi et al.'s (2017) focus on a single emerging market, however, and the internal differences within that market, does not allow us to understand DMNE/EMNE comparative characteristics. Rather, it looks at how discrepancies in different kinds of institutional development influence escape FDI (in different Chinese provinces). Interestingly, however, they conclude that their findings 'seem to be consistent with the institution escapism lens' for FDI (p.469). This is because higher levels of institutional unevenness (i.e., what they refer to as 'fragility') are associated with higher levels of FDI (controlling for other factors).

In their research on South Africa, Barnard and Luiz (2018), following a somewhat similar logic, argue that it is inadequate to argue that escape FDI results from "weak" institutions alone. Instead, they argue that it is the 'societal contestation', and/or *misalignments* 'between firms and national institutions' (not 'weak' institutions *per se*) that cause escape FDI (Barnard & Luiz, 2018, p. 606). In this regard, they point out that in most studies 'institutional weakness' has 'received greater attention than institutional misalignment'.[6] In their study of the Lebanon, Fathallah et al. (2018), also emphasise the dynamic and longitudinal aspects of institutional change that EMNEs typically face: 'Whereas

[6] They note, for example, how 'Luo and Tung (2007:488) argue that entrepreneurs from developing countries often seek "better legal protection overseas over their property rights and business activities than they face at home"'.

institutional arbitrage was once a way to work around what firms could not change at home (Luo & Wang, 2012), we explain how it may also help firms cope with dramatic and dynamic changes and challenges' (Fathallah, Branzei and Schaan, 2018).

In short, the literature on escape FDI and institutional arbitrage has tended to focus not only on institutional *levels*, but rather institutional complexity (different dimensions) and change, as well as misalignment (Shi *et al.*, 2017; Barnard and Luiz, 2018; Fathallah, Branzei and Schaan, 2018). The question of *responsiveness* to institutional *change* is an interesting one in our view, as it may potentially be a differentiating characteristic between EMNEs and DMNEs. While both types of MNEs are likely to find weak domestic institutional environments an inconvenience (i.e., as they create business uncertainty and raise business costs) we argue EMNEs may be less inclined to undertake escape FDI when faced with volatility in their domestic institutional environment. Thus,

Hypothesis 2a. B*oth DMNEs and EMNEs are sensitive to institutional change and engage in greater institutional arbitrage related outwards FDI as institutions deteriorate (i.e., there is a positive relationship between institutional fragility and institutional arbitrage related FDI).*

Hypothesis 2b. *Institutional arbitrage related outwards FDI in EMNEs, however, is less sensitive to domestic institutional changes than in DMNEs (i.e., this positive relationship is weaker in EMNEs than DMNEs).*

3. Data, variables and empirical model

3.1. *Research Design*

Our methodology and data collection has similarities to that of Jones and Temouri (2016, 2018). Their work, however, focuses on determinants of tax haven use and only in DMNEs (whereas we compare DMNEs with EMNEs) and use a binary logit model, whereas by contrast we use multinomial logistic regression (with a count dependent variable). Like them, we use firm-level data from ORBIS

(Bureau van Dijk), which allows for identification of the geographical location of MNEs' overseas subsidiaries. This includes the number and location of subsidiaries in THOFCs. We use the number of THOFC subsidiaries as our count dependent variable.

We define an MNE following conventional ownership thresholds for locking in control (UNCTAD, 2013; OECD, 2018b), using ORBIS to identify parent firms owning a minimum of 10 percent ownership in at least one overseas subsidiary. To avoid misrepresentation, we remove all cases whereby the MNE in question only has one overseas subsidiary, and this sole subsidiary is positioned outside of a tax haven.

3.2. *Sample construction and data collection*

Our sample firms are active publicly listed companies. Such firms have stricter reporting and legal requirements to shareholders to disclose accurate details, including those on subsidiaries. Data availability for listed firms is therefore generally superior. From the initial screening of 46,979 MNEs, those that returned no specified location of their subsidiaries, along with any other missing or invalid fields were removed (31,737). The final sample contained 18,135 classified MNEs, 10,892 of which had parent firms in a total of 27 developed markets and 7,243 were identified across 104 emerging markets.

Table 1 provides a breakdown of the top five MNE parent nations regarding tax haven investments (from both emerging and developed economies). In total, 258,044 subsidiaries were established, spanning across 205 countries and, 29, 771 of these were located in THOFCs jurisdictions. Thus over 10% of all MNE subsidiaries are incorporated in recognised tax havens. In total, 11,687 THOFC subsidiaries were established by DMNEs, while EMNEs had 18,072 tax haven subsidiaries.

The process of identifying which countries are considered tax havens is not altogether trivial, as highlighted by Palan, Murphy and Chavagneux (2013, p.8) state that THOFCs are countries that 'take advantage' of their autonomy 'to create legislation designed to assist non-resident persons or

corporations to *avoid the regulatory obligations imposed on them*'. Considering this, one attribute of THOFCs are zero or close to zero rates of corporate taxation gifted to non-resident firms. Due to significant political pressure on bodies such as the OECD and the IMF, this makes these tax haven classification guides somewhat arbitrary, creating an element of difficulty when classifying THOFC locations. Our approach, however, also focuses on THOFCs that in addition to low taxes have excellent domestic institutional environments. The PwC (2018) tax guide, used in conjunction with a guide issued by the European Parliament (2018) (this also includes countries along with the volume of THOFC subsidiary investment by each parent country) allows us to separate out and identify THOFCs that have world leading institutional environments. [7] Of the 205 subsidiary countries in the sample, 42 of them were classified as tax havens according to this guide (see Appendix D). Thus, our list focuses on offshore locations that would be suitable for MNEs engaging in institutional arbitrage.

(SEE END OF DOCUMENT FOR TABLE 1)

Table 1 shows that from a developed market context, it appears France and Germany utilise THOFCs at significantly lower rates than the U.K, Japan and the U.S.A. Whilst from an emerging market context, China and Taiwan have invested significantly more in THOFCs than other emerging markets (such as Malaysia, South Africa and the Republic of Korea).

3.3. *Variables*

Dependent variable: As noted, recent research has highlighted the important role that offshore incorporation in tax havens and financial centres plays as a mechanism for institutional arbitrage

[7] Some also consider the size of each tax haven location. Desai et al. (2006), for example, distinguished the category of tax havens by allocating each one into a category of the Big 7. Hines and Rice (1994), by contrast, identified the smaller economies as dot tax havens. Here we consider all THOFCs under one single category, whether they be large or small, focusing more on institutional strength/reputation.

(Buckley et al. 2015). The dependent variable we employ is thus the total *number* of THOFC subsidiaries that each active MNE holds.

The practicality of obtaining information regarding the total amount of assets invested in THOFCs is often restricted due to the secrecy and covertness offered offshore, providing them with 'secure secrecy for their commercial activities' (Palan, Murphy and Chavagneux, 2013, p.2). Using count data, while imperfect, is our preferred option. This is somewhat similar to Jones and Temouri (2016, 2018). They, however, use a binary approach (i.e., logistic regression models).

3.4. *Explanatory and Control variables*

3.4.1. *Explanatory variables*

A dummy variable capturing DMNE/EMNE parent status (i.e., the provenance of the global ultimate parent) was used. This equals one if the parent MNE is an EMNE, and zero if DMNE. Our definition of emerging markets on the MSCI Global Market Accessibility Review (MSCI, 2018), which includes annually updated market assessments for all markets. Finally, an interaction term was created using the product of the EMNE dummy variable with the institutional fragility score, capturing how the relationship between institutions and THOFC creation varies between DMNEs and EMNEs (i.e., testing hypothesis *H2b)*.

Measuring the Institutional fragility of each MNE's home country is required to address *H2a* and *H2b*. To do this we identify the home country of each MNE parent (listed in Appendix B). Using the seven Worldwide Governance Indicators (WGI) detailed by the World Bank (2018) we assign a percentile measurement to each home country. We then use an inverted measure of the mean of each country's percentile score to capture institutional fragility (i.e., the higher the score, the greater the institutional fragility). The Syrian Arab Republic, for example, had the most fragile institutions, with a total institutional fragility score of 123 (across all seven WGI indicators?). Whilst New Zealand generated an overall score of just 4, it the least fragile institutionally.

An interactive term *(EMNE$_i$*Institutional Fragility)* is then calculated by multiplying the institutional fragility mean score assigned to each parent country by the EMNE dummy variable to test H2b.

3.4.2. *Control variables*

Higher taxes may evidently drive offshore subsidiary creation for taxation related purposes. A crucial control variable is the level of domestic taxation levied on domestic MNE parent firms. We therefore incorporate the variable CorporateTaxRatei, a measure of the corporate tax rate that applies the parent country of each MNE. We used the corporate tax rate of each parent MNE at country level (see Appendix B), with the top eight highest corporate tax rates being all emerging markets, and only four developed markets in the top twenty highest corporate tax rates.

(SEE END OF DOCUMENT FOR TABLE 2)

Following Jones and Temouri (2016), who specify a similar empirical model, we draw from similar rationales for incorporating some other control variables. These include the size, operating revenue, and cash flow, total number of foreign subsidiaries, age and total number of THOFC subsidiaries of each MNE. In addition,

Industries dummies are created utilising NACE two-digit. Following Jones and Temouri's (2016) approach, moreover, who note the importance of technological sophistication and intangible assets as drivers of offshore incorporation, six industry groupings were controlled for in the study. If the MNE offers high technology manufacturing services and therefore had either a 21 or 26 NACE 2-digit code, it would be allocated a one, and zero otherwise. This was applied across all six characteristic categories and applied to the correlation matrix. In addition, the vector Industryi includes a number of sector/industry dummy variables, specific to the industry characteristic categories at the NACE 2-digit level, discussed in the above.

3.5. *Data and Model specification*

Count dependent variables are typically tested using negative binomial or Poisson modelling. Our approach is slightly different to Jones and Temouri, (2016) and Jones, Temouri and Cobham (2018), who use Logit/Probit binary type models. It is important to note that in this study, even MNEs that have not appeared to route any FDI through THOFCs are included. The following baseline model designed to test H1, H2 and H2b is estimated as follows:

$$Number\ of\ Tax\ Haven\ Subsidiaries_i = \beta_0 + \beta_1\ EMNE_i + \beta_2\ Institutional\ Fragility_i + \beta_3\ (EMNE_i\ *Institutional\ Fragility) + \beta_4\ Corporate\ Tax\ Rate_i + \beta_5\ Industry_i + \boldsymbol{\delta}\ \boldsymbol{X}_i + \acute{\varepsilon}_i$$

Where the dependant variable $TaxHavenSubsidiaries_i$ is equal to the amount of THOFC subsidiaries, whilst EMNE is a dummy variable, which distinguishes between EMNEs equalling one and DMNEs equalling zero. $InstitutionalFragility_i$ captures the institutional fragility and subsequent development, whilst the β_3 coefficient $(EMNE_i\ *Institutional\ Fragility)$ takes the $EMNE_i$ dummy variable and multiplies it by the $InstitutionalFragility_i$ variable, which, if the coefficient on this variable is significant, then any differences between emerging and developing economies, and the relationship between THOFC investment and institutional quality will be highlighted. This justifies why the β_2 and β_3 coefficients are of significant interest in this study. They can quantify the overall impact of not only whether an MNE is from an emerging or developing market, but also; whether EMNEs have a higher propensity to use THOFCs, whilst also considering the impact of institutional quality and the resulting sensitivity that each MNE type experiences. Ultimately, this can provide clarification on whether the relationship between institutional quality and the propensity to route FDI via THOFCs is negatively or positively moderated by the corresponding MNE type.

4.Results

The correlation matrix shows low correlations across most explanatory variables. An interesting negative correlation (-0.1977) is that between corporate tax rate and the number of THOFC subsidiaries. In general, multi-collinearity is not a serious issue.

(SEE END OF DOCUMENT FOR APPENDIX A)

On average each MNE invested in two THOFCs, with the maximum number of THOFCs subsidiaries reaching 290 (Table 1). Initial impressions suggest DMNEs have a higher propensity to carry out FDI via THOFCs. They have 7,111 THOFC subsidiaries found among the top five DMNE THOFC investors compared to 4,310 owned by EMNEs. However, considering that the top five DMNE THOFC investors had carried out OFDI in 99,728 foreign subsidiaries, compared to just 19,199 owned by EMNEs, this equalled 7 percent of overall foreign subsidiary investment for DMNEs compared with 22 percent for EMNEs.

Table 3 model (1) includes all explanatory variables, including the EMNE dummy variable, the institutional fragility variable, and the variable to measure institutional sensitivity between EMNE and DMNEs (i.e., institutional fragility variable multiplied by EMNE dummy variable). *H1*, which states that EMNEs have a higher propensity to route FDI through THOFCs compared to DMNEs, is supported. The EMNE dummy variable is highly significant with a positive coefficient (0.727). This is supported by this study's robustness check using the poisson regression model in Appendix C, where the coefficient is positively correlated at 0.540, thus confirming *H1*.

(SEE END OF DOCUMENT FOR TABLE 3)

There is in addition support for *H2a*: all MNEs, regardless of origin, are sensitive to institutions regarding THOFC subsidiary creation. The coefficient estimates for the institutional fragility variable

in specification (1) shows a significant (at 0.1% level) and positive coefficient. So as institutions deteriorate (i.e., become more fragile) they will tend to set up more THOFC subsidiaries. This supports and extends the findings of Shi et al. (2017), and Luo, Xue and Han (2010) who argue that home country institutional factors play an important role in the propensity to carry out OFDI and invest offshore.

When testing H2b our results show that although there is still a positive relationship between THOFC creation and institutional fragility, it is smaller for EMNEs. The interaction coefficient (institutional fragility*EMNE) is -0.00736 and significant at the 1% level. Thus, although all MNEs are sensitive to lower levels of institutional quality (i.e., institutional fragility) when it comes to THOFC use, EMNEs appear *less* sensitive to institutional changes. EMNE origin therefore negatively moderates the relationship between institutional fragility and the propensity to set up THOFC subsidiaries.

Tables 4 and 5 below run the same negative binomial model as displayed in Table 3 above, yet with two different samples. The sample in Table 4 is for EMNEs only, whilst Table 5 is for DMNEs only. The reason for this is additional robustness, especially when determining the results of the institutional fragility * EMNE variable, or more specifically, institutional fragility across both EMNEs and DMNEs.

(SEE END OF DOCUMENT FOR TABLES 4 AND 5)

From the two tables above, it is clear that the coefficient on the institutional fragility variable, although positive, is smaller for EMNEs than DMNEs. Therefore, successfully testing and rejecting *H2b.* This is because the results show that despite both EMNEs and DMNEs displaying sensitivity towards institutional fragility (*H2a*), and thus engaging in THOFC investment activities, it is DMNEs who are more sensitive.

In sum, our results show that EMNEs have a greater propensity to invest in THOFCs subsidiaries than DMNEs. The models also show that the *institutional fragility* variable is positively, yet weakly related to THOFC subsidiary investment. The institutional sensitivity variable showed that whilst both EMNEs and DMNEs are sensitive to institutional change, the relationship between DMNEs and

institutional fragility is more significant, with DMNEs showing a higher positive coefficient in Table 5 compared to the same coefficient for just EMNEs in Table 4.

Other control variables

Tax Rate is negatively significant (-0.0493) (Table 3), indicating that high levels of home country corporate tax do not increase an MNE's propensity to route FDI through THOFCs. However questionable, this would give rise to other factors that have not been considered in this model such as government policies and legislation, or simply the ardent nature of MNEs within particular markets that levy high corporate tax rates. Thus, further suggesting that the host country specific advantage of zero tax may in fact not be the primary determinant for THOFC use.

Age, Cash Flow and Turnover in the models from Table 3 and Appendix C, remain positively significant, indicating that older, larger and more profitable MNEs have a higher propensity to invest in THOFC subsidiaries. Tables 4 and 5 highlighted an interesting result regarding the *Age* variable. The EMNE only sample (Table 4) gave a negative coefficient (-0.00292), whilst in the DMNE only sample (0.000175).

Robustness tests

We do not believe endogeneity is a major concern as we are primarily interested in how the country of origin, including institutional levels, impacts upon MNE' tax haven use. It is difficult, for example, to envisage how causality might be reversed (i.e. that tax haven usage could lead to changes in domestic institutional quality). We do not believe that our estimated variable coefficients are therefore biased by endogeneity related concerns related to the direction of causality. To perform additional robustness testing we varied the ownership threshold from 10 to 50% and ran identical models using the new restricted sample.

5. Discussion

5.1 Institutional arbitrage and escape FDI in EMNEs: are they different?

Are EMNEs different to DMNEs owing to their greater propensity to engage in institutional arbitrage? Much mainstream EMNE related theorizing has raised this question, arguing EMNE' internationalization strategy may be more strongly driven by such motives. Luo and Tung's (2007; 2018) springboard 'theory', for example, is a case in point. It argues that 'springboard' MNEs (and EMNEs are considered often to fall into this category) are strongly motivated to engage in 'institutional arbitrage' related FDI. Others have supported this line of reasoning, arguing EMNEs, owing to their relatively weak domestic institutional environments, engage in 'escape' FDI (Boisot and Meyer, 2008; Barnard and Luiz, 2018; Fathallah, Branzei and Schaan, 2018). To date, however, most studies of EMNE institutional arbitrage related FDI have either been conceptual, or else empirical studies, that have only focused at the level of individual countries (i.e., China, India, South Africa, Russia and the Lebanon), thus lacking a comparative element. There are, therefore, no large-scale DMNE/EMNE comparative empirical studies. As such, it has been difficult to definitively conclude whether EMNEs are more strongly motivated by institutional arbitrage related FDI. [8]

Our findings, controlling for a range of domestic measures of institutional fragility and domestic national corporate tax rates (as well as industry and firm-level characteristics), do suggest that EMNEs have a comparatively higher proclivity to use THOFC offshore companies compared to DMNEs. They thus support the idea that institutional arbitrage is comparatively more important for EMNEs, distinguishing them from DMNEs in this way. These findings, if accepted, raise additional points for discussion, including: (a) a more rigorous in-depth examination of the explanations given for institutional arbitrage/escape FDI in the EMNE related literature; and (b) from this, greater clarity as to

[8] Previous literature (Haberly and Wojcik, 2015; Jones and Temouri, 2016) did not extend their tax haven analysis beyond OECD countries,

the exact reasons why EMNEs are more prone to offshore incorporation than DMNEs. We now address these points.

5.2 Augmenting extant EMNE theory

Regarding point (a), Luo and Tung's (2018) 'springboard theory' (and their earlier 'springboard perspective'), are high profile approaches seeking to explain EMNE FDI. They incorporate institutional arbitrage as an important driver of springboard FDI. The springboard theory is thus instructive in how the mainstream EMNE literature, which generally argues in favour of institutional arbitrage, explains it (c.f. Boisot and Meyer, 2008). We argue, however, that this aspect of EMNE related theorizing, is not yet as explicit and detailed regarding the exact nature and role of institutional arbitrage strategies in EMNEs as it might be.

Firstly, the timing of institutional arbitrage related FDI within the EMNE internationalisation process is not clearly spelt out in the institutional arbitrage and springboard related theory. Luo and Tung (2018) acknowledge, for example, that: 'both views need further development in illuminating dynamic changes – how the firm evolves from its initial pursuit of institutional arbitrage to subsequent pursuit of market opportunities' (Luo and Tung, 2018: 135). The springboard theory, in this regard, envisages a dynamic 'upward spiral' *process*, whereby early outwards FDI of springboard EMNEs is mostly geared towards strengthening the *domestic* market position.

On closer inspection, however, it appears to us that the setting up of an offshore presence in a THOFC counts among the earliest outward FDI steps that EMNEs usually take. This is because offshore incorporation for EMNEs typically creates a *bridgehead* for further so-called 'onward-journey' (or capital in transit) EMNE related FDI. For example, undertaking direct cross-border M&As from countries like China, India and Russia is highly problematic. This is owing to the legal institutional constraints. Such deals cannot easily be undertaken on a bilateral basis between most emerging markets and other (developed market) host countries. Typically, therefore, such FDI is facilitated via advanced business service providers and mediated initially via favourable offshore institutional arrangements

(Chari, 2015). Importantly, therefore, THOFC related institutional arbitrage often takes place very early on in the internationalisation processes of EMNE (Buckley et al. 2015). In some cases, moreover, corporate inversions be carried out – technically redomiciling the global ultimate owner of the EMNE. While the ultimate purpose of any subsequent 'onward-journey' investments from THOFCs may well be related to domestic market expansion, the initial stages of EMNE OFDI are, therefore, closely related to (defensive) institutional arbitrage (Luo and Tung, 2018). Going offshore via THOFCs is basically a prerequisite for further international expansion for EMNEs.

Secondly, the springboard theory argues that 'escape' FDI is often undertaken in tandem, mixed with a number of other motives. This is to say foreign subsidiaries can serve multiple purposes (i.e., efficiency/market/asset seeking as well as institutional arbitrage). This may undoubtedly be true. Indeed, as a general point, following Witt and Lewin (2007), we would agree that the institutional motives for FDI have tended to be downplayed in the International Business literature (i.e., scholars focus on efficiency/market seeking etc.) (Kobrak et al. 2018). We argue, however, that Luo and Tung's (2018) springboard theory tends to overstate the true extent of mixed motive related escape FDI in EMNEs (and thus underestimates the importance of pure play institutional arbitrage FDI). THOFC related escape FDI, which is extensive in EMNEs, is typically undertaken with the purpose of addressing quite *specific* institutional deficits, usually crucial bottlenecks that EMNEs face at home. Among these, accessing superior capital markets (and thereby addressing domestic imperfections) undoubtedly plays a central role. As Jackson and Deeg (2008: 553) note: 'MNEs often arbitrage between different institutions by locating *distinct functional activities in different national locations*' (our emphasis). The scope for market and efficiency seeking types of FDI are clearly limited in THOFC jurisdictions. So, it is common for EMNEs to address specific institutional voids via THOFC incorporation (Buckley et al. 2015).

Relatedly, the ability of offshore incorporation to facilitate access to international property rights markets is crucial (liquid offshore markets also allows for the entry and exit of both international and domestic investors). Such offshore companies may open up financing channels but are often also, as noted, a prerequisite for undertaking further FDI transactions, particularly international M&As. These

are most typically brokered and negotiated using offshore structures, where tax and property rights transactions are far easier to negotiate (as all parties, both target and acquirer, can be incorporated offshore, avoiding unnecessarily complex legal negotiations between very different (institutionally speaking) countries.

The specific institutional deficits EMNEs therefore seek to address via THOFC incorporation are arguably ones that are vital to their further internationalisation. Without them, any further attempts at rapid internationalisation (a distinguishing feature characteristic of springboard EMNEs), would most likely be derailed. They are, in other words, *pre-requisites* and necessary conditions for further internationalisation through FDI to take place.

In this sense, EMNE related theorizing, typified by the example of the springboard theory, does not adequately explain the crucial part that institutional arbitrage plays at the *early stages* of the EMNE internationalization process and how such strategies are undertaken to address very defined needs. This specific requirement to access offshore capital and property rights markets plausibly explains, in our view, why it is that EMNEs have a comparatively greater offshore presence in THOFCs than DMNEs (i.e., why we see support for hypothesis 1). EMNEs must move offshore in order to successfully 'springboard'.

5.3 Institutional arbitrage: the attraction of deeper capital markets and property rights security

As regards point (b): answering the question of what kinds of institutions EMNEs seek when creating their THOFC subsidiaries, the example of Fosun introduced briefly earlier, illustrates the point that raising capital is crucial. Fosun's offshore listings, undertaken using offshore vehicles, marked a 'breakthrough' for Fosun according to its CEO. Inadequate property rights, lack of reliable information (and financial press, strong auditing and accounting regulations) and generally weak judicial systems make it hard to bring lenders and borrowers together. While this situation is evolving (with peer-to-peer lending and fintech, for example) in some emerging markets, it remains an important constraint. Tapping offshore capital markets (and offshore investors) has therefore been very important to many

EMNEs. In the Chinese case, for example, this is evidenced by the very serious threats to block access to US stock markets for Chinese companies by the current US administration. All such overseas Chinese listings are preceded by the offshore incorporation of foreign subsidiaries (or corporate inversions), typically in the triad of the Cayman Islands (fourth largest financial centre in the world), BVI and Hong Kong. In the Indian case Mauritius is commonly used, and Cyprus is typically used by Russian MNEs. Specific offshore hubs are chosen in part because of their developed financial systems (or links to other more developed financial systems) and associated property rights markets and related institutions (i.e., judicial systems) (Maurer, 2011).

5.4 Sensitivity to institutional changes in EMNEs and DMNEs: going beyond levels of institutional development.

Whether an MNE is from a developed or emerging market context, our findings showed the decision to route FDI via THOFCs is still positively associated with the quality of institutions in the MNE's home country (i.e., a deterioration in institutions leads to greater escape FDI). These findings somewhat support the ideas of Witt and Lewin (2007), early supporters of the need to consider escape related reasons for FDI. In addition, we compared the sensitivity of EMNEs with DMNEs and found that while the absolute levels of escape FDI may be higher (controlling for taxes, corporate size etc.) in EMNEs, they were *less* sensitive to changes in institutions. We argue that this may be explained by the fact that EMNEs are habituated to unstable institutional contexts. As such, unlike DMNEs, they have to constantly deal with changeable regulations and continuous evolving legal institutions and political systems. EMNEs, we argue, also develop complex organisational forms (i.e. diversified business groups) to deal with the higher transactions costs of doing business in a domestic environment associated with greater *uncertainty*. They are used to coping with fast evolving difficult domestic market environments - the so called 'institutional voids'. EMNEs, moreover, are more strongly tied to their domestic institutional bases than DMNEs. This is because they make most of their sales and reap most of their income domestically. In this regard, it is perhaps not entirely surprising that our dataset

suggests a lesser sensitivity to institutional fragility with regards the creation of offshore THOFC subsidiaries.

To date the focus in much of the EMNE related institutional arbitrage theorizing has been on levels of institutional development and how these may impact on EMNE' escape FDI (Boisot and Meyer, 2008; Luo and Tung, 2018). That EMNEs show a lesser, albeit still positive and significant, reaction to institutional fragility, may not on reflection be so surprising. This may, however, stand out as a potentially distinguishing feature of EMNEs when compared with DMNEs. Going forward conceptual distinction between analysis of levels, and responsiveness to changes in those levels of institutional development, may provide further insights into the unique characteristics of EMNEs.

6. Conclusion

Over fifteen years ago Witt and Lewin (2007) noted that the phenomena of outward FDI as 'an escape response from the home country environment.... [had] received relatively little systematic exploration in the field of IB' (Witt and Lewin, 2007: 579). In the interim, MNEs have become ever more footloose, with the role of offshore incorporation becoming a more prominent feature of MNE' activity (Buckley et al. 2015). Strategic market exit (Huang, 2006; Boisot and Meyer, 2008), moreover, rather than entry, would appear of growing importance, in part owing to the rise of EMNEs. The literature on EMNEs has accordingly placed considerably weight on institutional arbitrage and escape related FDI as an important and potentially distinguishing feature of EMNEs (Luo and Tung, 2018). Our analysis is amongst the first to empirically compare EMNEs with DMNEs in this regard. While partially supportive, it also points to the need for further refinement in current treatment of EMNE related escape FDI. In particular, we found sensitivity of THOFC use to institutional fragility was noticeably less for EMNEs than DMNEs. The notion that institutional arbitrage is therefore an important explanation for EMNE expansion is partially supported by these findings – but also that it is important for DMNEs, albeit in different ways (i.e., DMNEs experience greater sensitivity to institutional fragility).

Emphasis at times has been placed on the differences between EMNEs and DMNEs throughout the IB literature. Our findings, however, also point towards some of the similarities between the two groups. In reality, all MNEs are sensitive to levels of domestic institutional fragility – with DMNEs actually being more sensitive than EMNEs to changes in those institutions. As EMNEs, however, are in their early stages of development and their domestic institutional contexts are typically far less developed (i.e., they suffer from institutional voids), they are more strongly attracted to using subsidiaries in offshore locations than DMNEs. Offshore incorporation, in addition, allows EMNEs to address very specific institutional voids (i.e., capital markets, property rights) which are the preconditions for further internationalisation. This suggests that thresholds in institutional levels may have important impacts on EMNEs with regards offshore tax haven incorporation. Thus, in contrast to much of the IB literature, which stresses the overall levels of tax haven use being greater in EMNEs, our findings point towards a more nuanced and less discussed aspect of how both EMNEs and DMNEs respond to institutional levels and change in those levels.

6.1 Managerial and policy implications

At the managerial level, our findings suggest movement offshore is one realistic and at times even necessary option for EMNEs. It is common practice, suggesting that EMNEs are able to reap potential rewards (beyond tax optimisation, lighter regulations and capital secrecy). THOFC use is prevalent throughout the world, but more so in EMNE than DMNE contexts. This has important implications on EMNE policy-makers, who may have to consider how best to control strategic exit of their businesses. Such exit erodes their tax base and subsequently, tax collections. This, implying that the greater economic activity associated with THOFCs may come at a higher cost, particularly regarding foregone government revenues (Hines, 2005), whilst Dharmapala (2008) argued that under certain conditions, the existence of THOFCs can in fact enhance efficiency and mitigate tax competition.

Policy Implications: tax havens and EMNEs

As OFDI into THOFCs is increasing (UNCTAD, 2018), a greater explanation into the determinants is indeed necessary when seeking a greater understanding of MNE activity. As the propensity amongst MNEs to use THOFCs becomes more apparent, the financial implications for parent-country governments in unsurprising, with an estimated impact of $600 billion per annum regarding corporate tax revenue that is lost (Crivelli, de Mooij, and Keen, 2015; Cobham and Jansky, 2018). Rather than merely providing tax incentives for MNEs, THOFCs provide a deviation from disclosure, stringent regulations, and even criminal liability. Yet, as emphasised by the IMF (2019), at what unquantifiable cost does this come at?

The reasons for seemingly stronger tendency of EMNE to locate in the offshore world are thought not to be only related to lower burdens of tax such jurisdictions offer. Rather, as Buckley et al. (2015) have persuasively argued, the heavy concentration of EMNE FDI to offshore tax havens and financial centres is also strongly driven by considerations related to 'institutional arbitrage'.

6.2 Limitations of the study and future research

It has been argued that THOFCs are popular locations for institutional arbitrage related FDI (Buckley *et al.*, 2015; Chari and Acikgoz, 2016). Recent empirical observations are supportive of this view.[9] However, some may question whether there may be alternative, potentially superior, ways of capturing an MNEs propensity to engage in institutional arbitrage.

Despite a comparatively large data set, a potential limitation is that it is cross-sectional in nature. By looking at how institutions vary across countries, we make inferences about how MNEs may respond

[9] Damgaard and Elkjaer (2017), for example, found that EMNEs from China, India and Brazil routed approximately 50 to 90 percent of outward FDI through THOFCs. By comparison, DMNEs from the U.K and the U.S, for example, routed only between 50 to 60 percent of their outward FDI through THOFCs. As a result, THOFCs now host approximately $12 trillion of global FDI positions, with a disproportionate volume from emerging markets given their shares of global GDP (Damgaard, Elkjaer and Johannesen, 2018).

to institutional change at the domestic level (i.e., over time how THOFC use evolves). Future research should consider whether a panel data set can be developed, as this may not only provide more observations but give further reassurances into the longitudinal nature of the relationships between THOFC use over time and market provenance (i.e., DMNE or EMNE). I have also used a composite measure of institutional quality that is somewhat restricted. Additional aspects of institutional quality could certainly be incorporated in future refinements of this study.

One further point to consider is that the data extracted from ORBIS is a snapshot of today. To elaborate, the subsidiaries in this study and the statistics that accompany them are taken from the most recent period, which in this case is 2017. Therefore, this study does not take into consideration any data before this period, nor does it exclude relevant data on or after this period. Whilst ORBIS highlights the ownership history for each MNE, there is still a small chance that these MNEs could close their tax haven subsidiaries, which is an important factor to consider when considering the credibility of this paper's methodology, and the outcomes that aim to measure the propensity of THOFC use amongst DMNEs and EMNEs. Further, whilst the theoretical construct in this study, institutional fragility, captures key institutional characteristics of emerging and developed economies, there is no indication as to whether such institutional differences are viewed as opportunities or, as Stahl et al. (2016) found, merely problematic. Yet, taking an institutional arbitrage approach, this study found that institutional fragility should be seen as an attractive opportunity to leverage specific host country opportunities mentioned above (tax, property rights and secrecy arbitrage), whilst overcoming inherent home market issues.

The dependent variable in this study does not measure the financial extent to which MNEs have invested in each THOFC subsidiary. ORBIS's ability to deliver this information was somewhat lacking, therefore future research could address this weakness. By obtaining a greater depth of information on subsidiary activity, an isolation can be made as to whether the THOFC subsidiary is simply used for tax minimisation, or productive economic activity. Given the increasing utilisation of THOFCs by MNEs, this paper hopes to have introduced a new direction of enquiry amongst IB literature. Whether

an MNE truly benefits from THOFC use, both financially and in a performance context, remains to be answered. How would these performance gains be measured, if affected at all?

Our modelling showed that EMNEs, other things being equal (i.e., corporation tax), have a greater propensity to use offshore THOFC subsidiaries. We suspect imperfections in capital and related property rights markets play a large part in explaining this. Our modelling does not, however, specifically control for capital market development. As such it may be that the higher prevalence of EMNE THOFC use could be explained by the addition of this variable. This is an area that should be explored in future empirical research.

This study was unable to capture the impact of dynamic effects on the propensity of THOFC use. This being said, the impact of government policy changes could provide valuable information for this gap in research, clarifying whether varying home-country policy implications negatively or positively affect THOFC subsidiary creation. Yet, as the data extracted from ORBIS is primarily from national corporate registries. With respect to THOFC subsidiaries, there could be missing areas in the coverage that have not been considered by ORBIS. Therefore, considering the conservative THOFC subsidiary observations in this study, it is reasonable to assume that the true figure may be more significant; hence, these results may underestimate the impact of institutions.

7. References

Anderson, J., Sutherland, D., Zhang, F., & Zan, Y. (2020). Analyzing the reliability of Chinese outward FDI studies: a replication approach. *Critical Perspectives on International Business*, *ahead-of-p*(ahead-of-print). https://doi.org/10.1108/cpoib-11-2019-0088

Barnard, H., & Luiz, J. M. (2018). Escape FDI and the dynamics of a cumulative process of institutional misalignment and contestation: Stress, strain and failure. *Journal of World Business*, *53*(5). https://doi.org/10.1016/j.jwb.2018.03.010

Boisot, M., & Meyer, M. W. (2008). Which way through the open door? Reflections on the internationalization of Chinese firms. *Management and Organization Review*, *4*(3), 349–365. https://doi.org/10.1111/j.1740-8784.2008.00116.x

Buckley, P. J. J., Sutherland, D., Voss, H., & El-Gohari, A. (2015). The economic geography of offshore incorporation in tax havens and offshore financial centres: the case of Chinese MNEs. *Journal of Economic Geography*, *15*(1), 1–26. https://doi.org/10.1093/jeg/lbt040

Buckley, P. J., Chen, L., Clegg, L. J., & Voss, H. (2018). Risk propensity in the foreign direct investment location decision of emerging multinationals. *Journal of International Business Studies*, *49*(2), 153–171. https://doi.org/10.1057/s41267-017-0126-4

Buckley, P. J., Sutherland, D., Voss, H., & El-Gohari, A. (2015). The economic geography of offshore incorporation in tax havens and offshore financial centres: The case of Chinese MNEs. *Journal of Economic Geography*, *15*(1), 103–128. https://doi.org/10.1093/jeg/lbt040

Chari, M. D. R. (2015). An Integrated Model of Upgrading and Catchup by Emerging Economy Firms. *Emerging Economies and Multinational Enterprises*, *28*. https://doi.org/10.1108/S1571-502720150000028015

Chari, M., & Acikgoz, S. (2016). What drives emerging economy firm acquisitions in tax havens? *Journal of Business Research*, *69*(2). https://doi.org/10.1016/j.jbusres.2015.08.034

Cobham, A., & Janský, P. (2018). Global distribution of revenue loss from corporate tax avoidance: re-estimation and country results. *Journal of International Development*, *30*(2), 206–232. https://doi.org/10.1002/jid.3348

Crivelli, E., De Mooij, R., & Keen, M. (2015). *Base Erosion, Profit Shifting and Developing Countries Prepared by*.

Cuervo-Cazurra, A., Ciravegna, L., Melgarejo, M., & Lopez, L. (2018). Home country uncertainty and the internationalization-performance relationship: Building an uncertainty management capability. *Journal of World Business*, *53*(2), 209–221. https://doi.org/10.1016/j.jwb.2017.11.002

Damgaard, J., & Elkjaer, T. (2017). *The global FDI network: searching for ultimate investors*.

Damgaard, J., Elkjaer, T., & Johannesen, N. (2018). Piercing the veil. *Finance & Development*, *55*(2).

Desai, M. A., Foley, C. F., & Hines, J. R. (2006). Do tax havens divert economic activity? *Economics Letters*, *90*(2), 219–224. https://doi.org/10.1016/j.econlet.2005.08.007

Dharmapala, D. (2008). What problems and opportunities are created by tax havens. In *Oxford Review of Economic Policy* (Vol. 24, Issue 4, pp. 661–679). https://doi.org/10.1093/oxrep/grn031

Fathallah, R., Branzei, O., & Schaan, J.-L. (2018). No place like home? How EMNCs from hyper turbulent contexts internationalize by sequentially arbitraging rents, values, and scales abroad. *Journal of World Business*, *53*(5). https://doi.org/10.1016/j.jwb.2018.04.001

Ge, G. L., & Ding, D. Z. (2011). Determinants of internationalisation strategies: A study of Chinese multinational enterprises. International Journal of Business and Emerging Markets, 3(2), 137-157.

Golikova, V., & Karhunen, P. (2014). *Internationalization of Russian firms as institutional arbitrage: The case of Finlande*.

Golikova, V., Karhunen, P., & Kosonen, R. (2014). Internationalization of Russian firms as institutional arbitrage: the case of Finland. In *Internationalization of Firms from Economies in Transition*. Edward Elgar Publishing. https://doi.org/10.4337/9781783474707.00017

Haberly, D., & Wójcik, D. (2015). Tax havens and the production of offshore FDI: An empirical analysis. *Journal of Economic Geography*, *15*(1), 75–101. https://doi.org/10.1093/jeg/lbu003

Hines, J. R., & Rice, E. M. (1994). Fiscal Paradise: Foreign Tax Havens and American Business. *The Quarterly Journal of Economics*, *109*(1). https://doi.org/10.2307/2118431

Hines, J. R. (2005). Do Tax Havens Flourish? *Tax Policy and the Economy*, *19*, 65–99.

Hoskisson, R. E., Chung, L. E., Lau, M., & Wright, M. (2000). Strategy in Emerging Economies. In *Source: The Academy of Management Journal* (Vol. 43, Issue 3).

Huang, Y. (2006). Assessing financing constraints for domestic private firms in China and India: Evidence from the WBES survey. *Indian Journal of Economics and Business*, 69–92.

Jackson, G., & Deeg, R. (2008). Comparing capitalisms: Understanding institutional diversity and its implications for international business. *Journal of International Business Studies*, *39*(4), 540–561. https://doi.org/10.1057/palgrave.jibs.8400375

Jones, C., & Temouri, Y. (2016). The determinants of tax haven FDI. *Journal of World Business*, *51*(2), 237–250. https://doi.org/10.1016/j.jwb.2015.09.001

Jones, C., Temouri, Y., & Cobham, A. (2018). Tax haven networks and the role of the Big 4 accountancy firms. *Journal of World Business*, *53*(2), 177–193. https://doi.org/10.1016/j.jwb.2017.10.004

Khanna, T., & Palepu, K. (1997). Why focused strategies may be wrong for emerging markets. *Harvard Business Review*, *75*(4), 41–54.

Khanna, T., & Yafeh, Y. (2007). Business Groups in Emerging Markets: Paragons or Parasites? *Journal of Economic Literature*, *45*(2). https://doi.org/10.1257/jel.45.2.331

Khanna, T., & Yafeh, Y. (2007). Business Groups in Emerging Markets : Paragons or Parasites ? Business Groups in Emerging Markets : Paragons or Parasites ? *Journal of Economic Literature*, *45*(3), 331–372.

Kobrak, C., Oesterle, M. J., & Röber, B. (2018). Escape FDI and the Varieties of Capitalism: Why History Matters in International Business. *Management International Review*, *58*(3), 449–464. https://doi.org/10.1007/s11575-017-0323-1

Luo, Y., & Tung, R. L. (2018). A general theory of springboard MNEs. In *Journal of International Business Studies* (Vol. 49, Issue 2, pp. 129–152). Palgrave Macmillan Ltd. https://doi.org/10.1057/s41267-017-0114-8

Luo, Y., & Tung, R. L. (2007). International expansion of emerging market enterprises: A springboard perspective. *Journal of International Business Studies*, *38*(4), 481–498. https://doi.org/10.1057/palgrave.jibs.8400275

Luo, Y., & Wang, S. L. (2012). Foreign direct investment strategies by developing country multinationals: A diagnostic model for home country effects. *Global Strategy Journal*, *2*(3), 244–261. https://doi.org/10.1111/j.2042-5805.2012.01036.x

Luo, Y., Xue, Q., & Han, B. (2010). How emerging market governments promote outward FDI: Experience from China. *Journal of World Business*, *45*(1), 68–79. https://doi.org/10.1016/j.jwb.2009.04.003

Mathews, J. A. (2006). Dragon multinationals: New players in 21st century globalization. *Asia Pacific Journal of Management*, *23*(1), 5–27. https://doi.org/10.1007/s10490-006-6113-0

Meyer, K. E., & Peng, M. W. (2016). THEORETICAL FOUNDATIONS OF EMERGING ECONOMY BUSINESS RESEARCH. In *Journal of International Business Studies* (Vol. 47, Issue 1).

MSCI. (2018). *MSCI Global Market Accessibility Review – June 2018*.

OECD. (2018). *Base erosion and profit shifting*.

Palan, R., Murphy, R., & Chavagneux, C. (2013). *Tax Havens*. Cornell University Press. https://doi.org/10.7591/9780801468568

PricewaterhouseCoopers (PWC). (2018). *Tax Guide 2018 – Tax havens*.

Sharman, J. C. (2012). Chinese capital flows and offshore financial centers. *The Pacific Review*, *25*(3). https://doi.org/10.1080/09512748.2012.685093

Shi, W., Sun, S. L., Yan, D., & Zhu, Z. (2015). Institutional Fragility and Outward Foreign Direct Investment from China. *Academy of Management Proceedings*, *2015*(1), 11333–11333. https://doi.org/10.5465/ambpp.2015.11333abstract

Shi, W., Sun, S. L., Yan, D., & Zhu, Z. (2017). Institutional fragility and outward foreign direct investment from China. *Journal of International Business Studies*, *48*(4), 452–476. https://doi.org/10.1057/s41267-016-0050-z

Stahl, G. K., Tung, R. L., Kostova, T., & Zellmer-Bruhn, M. (2016). Widening the lens: Rethinking distance, diversity, and foreignness in international business research through positive organizational scholarship. In *Journal of International Business Studies* (Vol. 47, Issue 6, pp. 621–630). Palgrave Macmillan Ltd. https://doi.org/10.1057/jibs.2016.28

Su, W., & Tan, D. (2018). Business Groups and Tax Havens. *Journal of Business Ethics*, *153*(4), 1067–1081. https://doi.org/10.1007/s10551-018-3910-6

Sutherland, D., & Anderson, J. (2015). The Pitfalls of Using Foreign Direct Investment Data to Measure Chinese Multinational Enterprise Activity. *The China Quarterly*, *221*, 21–48. https://doi.org/10.1017/S0305741014001490

Sutherland, D., Hennart, J. F., & Anderson, J. R. (2019). How does the routing of FDI to and via tax havens confound our understanding of Chinese MNE identity? A critical review of the empirical literature on Chinese MNEs. In *Asian Business and Management* (Vol. 18, Issue 5, pp. 337–359). Palgrave Macmillan Ltd. https://doi.org/10.1057/s41291-019-00058-2

Sutherland, D., & Ning, L. (2011). Exploring 'onward-journey' ODI strategies in China's private sector businesses. *Journal of Chinese Economic and Business Studies*, *9*(1). https://doi.org/10.1080/14765284.2011.542885

Sutherland, D., & Ning, L. (2011). Exploring "onward-journey" ODI strategies in China's private sector businesses. *Journal of Chinese Economic and Business Studies*, *9*(1), 43–65. https://doi.org/10.1080/14765284.2011.542885

Sutherland, D., Voss, H., & Buckley, P. J. (2014). Sutherland, D., Voss, H., & Buckley, P. J. (2014). Chinese incorporation for institutional arbitrage and access to finance. *International Finance Corporation Review*.

UNCTAD. (2018). *World Investment Report 2018 – Investment and New Industrial Policies*.

UNCTAD. (2013). *World Investment Report 2013 – Global value chains: Investment and trade for development.*

Wei, W. X., & Alon, I. (2010). Chinese outward direct investment: a study on macroeconomic determinants. International journal of business and emerging markets, 2(4), 352-369.

Witt, M. A., & Lewin, A. Y. (2007). Outward foreign direct investment as escape response to home country institutional constraints. *Journal of International Business Studies*, *38*(4), 579–594. https://doi.org/10.1057/palgrave.jibs.8400285

Wojcik, D. (2012). Where governance fails: Advanced business services and the offshore world. *Progress in Human Geography*, *37*(3), 330–347. https://doi.org/10.1177/0309132512460904

Wójcik, D. (2013). Where governance fails. *Progress in Human Geography*, *37*(3). https://doi.org/10.1177/0309132512460904

Zhou, N., & Guillén, M. F. (2015). From home country to home base: A dynamic approach to the liability of foreignness. *Strategic Management Journal*, *36*(6), 907–917. https://doi.org/10.1002/smj.2242

Table 1
Top 5 THOFC investing parent countries

Top 5 Countries (excluding home country tax havens)	Number of MNEs	% of total MNE sample	Total number of foreign subsidiaries	% of total subsidiary sample	Total number of THOFC subsidiaries	% of total subsidiary sample
Developed market economies						
United Kingdom	814	4.49	25,414	9.85	2,143	7.20
Japan	1,855	10.23	28,994	11.24	1,794	6.03
United States of America	483	2.66	8,464	3.28	1,343	4.51
France	451	2.49	17,761	6.88	939	3.15
Germany	394	2.17	19,095	7.40	892	3.00
Top 5 total	3,997		99,728		7,111	
Percentage of sample total		**22.04**		**38.65**		**23.89**
Emerging market economies						
China	1,252	6.90	7,131	2.76	2,262	7.60
Taiwan	899	4.96	5,183	2.01	1,226	4.12
Malaysia	347	1.91	2,286	0.89	358	1.20
South Africa	153	0.84	1,674	0.65	251	0.84
Republic of Korea	404	2.23	2,925	1.13	213	0.72
Top 5 total	3,055		19,199		4,310	
Percentage of sample total		**16.85**		**7.44**		**14.48**
Total number of MNEs	**18,135**					
Total number of subsidiaries			**258,044**			
Total number of tax haven subsidiaries					**29,771**	

Table 2
Definition of variables.

Name of variable	Description of variable	Source
MNE characteristics		
Cash flow	The sum of: P/L for the Period [=Net Income] / Depreciation.	**ORBIS**
Turnover	A figure that appears on the balance sheet and is defined as the Total Operating Revenue (Net sales / Other operating revenue / Stock variations). This figure excludes VAT.	**ORBIS**
Quantity of foreign subsidiaries	This value is the total number of foreign subsidiaries which have been identified for the home-country/parent firm.	**ORBIS**
Age	The number of years elapsed since the firm was incorporated.	**ORBIS**
Industry characteristics		
High technology manufacturing	NACE 2-digit codes: 21, 26	**Central Statistics Office/Eurostat**
Medium/high technology manufacturing	NACE 2-digit codes: 20, 27, 28, 29, 30	**Central Statistics Office/Eurostat**
Medium/low technology manufacturing	NACE 2-digit codes: 19, 22, 23, 24, 25, 33	**Central Statistics Office/Eurostat**
Low technology manufacturing	NACE 2-digit codes: 10, 11, 12, 13, 14, 15, 16, 17, 18, 31, 32	**Central Statistics Office/Eurostat**
Knowledge intensive services	NACE 2-digit codes: 50,51, 58, 59, 60, 61, 62, 63, 64, 65, 66, 69, 70, 71, 72, 73, 74, 75, 78, 80, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93	**Central Statistics Office/Eurostat**
Less knowledge intensive services	NACE 2-digit codes: 45, 46, 47, 49, 52, 53, 55, 56, 68, 77, 79, 81, 82, 94, 95, 96, 97, 98, 99	**Central Statistics Office/Eurostat**
Tax haven definitions		
Tax havens	Andorra, Antigua and Barbuda, Aruba, Bahamas, Bahrain, Barbados, Belize, Bermuda, Cayman Islands, Costa Rica, Djibouti, Dominica, Gambia, Gibraltar, Grenada, Guyana, Honduras, Hong Kong, Jamaica, Jordan, Kiribati, Kuwait, Lebanon, Liberia, Liechtenstein, Marshall Islands, Mauritius, Monaco, Nauru, Panama, Qatar, Saint Kitts and Nevis, Saint Lucia, Samoa, San Marino, Seychelles, Solomon Islands, Swaziland, Trinidad and Tobago, United Arab Emirates, Uruguay, Vanuatu	**PwC**
Tax variable		
Corporate tax rate	This is the tax rate that is imposed by a jurisdiction on the income or capital of corporations. For this study, it was obtained from sources including European Tax Handbook and Ernst & Young Worldwide Corporate Tax.	**Oxford Centre for Business Taxation**
Market orientation and institutions		
Emerging/developed market	Classification obtained from the MSCI index on whether the MNE is situated in a developed or emerging economy.	**MSCI**
Institutional fragility	Data extracted from The World Bank, and Worldwide Governance Indicators with each of the six indicator fields returning a percentile score out of 100, with 100 being the most stable. The six indicators are: (1) Control of Corruption, (2) Government Effectiveness, (3) Political Stability and Absence of Violence/Terrorism, (4) Regulatory Quality, (5) Rule of Law and (6) Voice and Accountability.	**The World Bank**

Table 3

Negative Binomial regression analysis of the number of THOFC subsidiaries

Variables/specification	(1) THOFC subsidiaries	(2) THOFC subsidiaries	(3) THOFC subsidiaries
EMNE	0.727***	0.540***	
	(0.0893)	(0.0563)	
Institutional fragility	0.00836**	0.00184*	0.00868***
	(0.00260)	(0.000934)	(0.000605)
Institutional fragility * EMNE	-0.00736**		
	(0.00273)		
Corporate Tax Rate	-0.0493***	-0.0496***	-0.0605***
	(0.00193)	(0.00192)	(0.00157)
Ln Operating revenue (Turnover)	0.0894***	0.0908***	0.0978***
	(0.0150)	(0.0150)	(0.0150)
Ln Cash flow	0.0884***	0.0863***	0.0791***
	(0.0140)	(0.0140)	(0.0140)
Age	0.00108*	0.00105	0.000803
	(0.000544)	(0.000544)	(0.000547)
High technology manufacturing dummy	0.140*	0.152*	0.223***
	(0.0604)	(0.0603)	(0.0600)
Medium/high technology manufacturing dummy	-0.222***	-0.218***	-0.211***
	(0.0602)	(0.0602)	(0.0604)
Medium/low technology manufacturing dummy	-0.199**	-0.196**	-0.187**
	(0.0680)	(0.0679)	(0.0680)
Low technology manufacturing dummy	-0.0358	-0.0277	-0.0323
	(0.0638)	(0.0638)	(0.0639)
Knowledge intensive services dummy	0.246***	0.253***	0.227***
	(0.0554)	(0.0553)	(0.0553)
Less knowledge intensive services dummy	0.193***	0.198***	0.188***
	(0.0547)	(0.0547)	(0.0548)
Total number of foreign subsidiaries	0.0157***	0.0158***	0.0151***
	(0.000551)	(0.000551)	(0.000542)
_cons	-1.815***	-1.674***	-1.424***
	(0.131)	(0.120)	(0.117)
lnalpha	0.395***	0.396***	0.406***
	(0.0246)	(0.0246)	(0.0246)
Obs	11,336	11,336	11,336

Standard errors in parentheses

*Note: Correlations with * are significant at 5%*

** p<0.05, ** p<0.01, *** p<0.001*

Table 4

Negative Binomial regression analysis of the number of THOFC subsidiaries for EMNEs only

Variables/specification	(1) THOFC subsidiaries
Institutional fragility	0.00311**
	(0.000953)
Corporate Tax Rate	-0.0433***
	(0.00216)
Ln Operating revenue (Turnover)	0.0399*
	(0.0179)
Ln Cash flow	0.0785***
	(0.0171)
Age	-0.00292**
	(0.000956)
High technology manufacturing dummy	0.162*
	(0.0717)
Medium/high technology manufacturing dummy	-0.263***
	(0.0747)
Medium/low technology manufacturing dummy	-0.180*
	(0.0817)
Low technology manufacturing dummy	-0.0334
	(0.0764)
Knowledge intensive services dummy	0.227**
	(0.0697)
Less knowledge intensive services dummy	0.173**
	(0.0669)
Total number of foreign subsidiaries	0.0307***
	(0.00126)
_cons	-0.678***
	(0.144)
lnalpha	0.113***
	(0.0329)
Obvs	5,600

Standard errors in parentheses

*Note: Correlations with * are significant at 5%*

** p<0.05, ** p<0.01, *** p<0.001*

Table 5

Negative Binomial regression analysis of the number of THOFC subsidiaries for DMNEs only

Variables/specification	(1) THOFC subsidiaries
Institutional fragility	0.00666*
	(0.00284)
Corporate Tax Rate	-0.0343***
	(0.00443)
Ln Operating revenue (Turnover)	0.144***
	(0.0256)
Ln Cash flow	0.0639**
	(0.0230)
Age	0.00175*
	(0.000692)
High technology manufacturing dummy	0.165
	(0.103)
Medium/high technology manufacturing dummy	-0.107
	(0.0968)
Medium/low technology manufacturing dummy	-0.118
	(0.113)
Low technology manufacturing dummy	-0.0168
	(0.107)
Knowledge intensive services dummy	0.249**
	(0.0874)
Less knowledge intensive services dummy	0.136
	(0.0899)
Total number of foreign subsidiaries	0.0122***
	(0.000634)
_cons	-2.569***
	(0.211)
lnalpha	0.646***
	(0.0387)
Obs	5,736

Standard errors in parentheses

*Note: Correlations with * are significant at 5%*

** p<0.05, ** p<0.01, *** p<0.001*

Appendix A

Appendix A

Descriptive statistics and correlation matrix.

Variable	Obs	Mean	Std. dev.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total number of THOFC subsidiaries	15,242	1.9532	6.6476	0	290.0000	1.0000														
Total number of foreign subsidiaries	15,242	16.4593	50.3400	1	2036.0000	0.5832	1.0000													
EMNE	15,242	0.4752	0.4994	0	1	0.0562	-0.1415	1.0000												
Institutional fragility	15,242	38.5616	26.9551	0	123.1667	-0.0046	-0.1279	0.7276	1.0000											
Institutional fragility * EMNE	15,242	28.2371	34.1409	0	123.1667	0.0096	-0.1489	0.8653	0.9505	1.0000										
Corporate Tax Rate	15,242	22.0213	9.7373	0	55.0000	-0.1977	-0.0288	-0.4132	-0.0442	-0.1709	1.0000									
Ln Operating revenue (Turnover)	14,849	12.1591	2.5947	0	20.0308	0.1832	0.3629	-0.0967	0.0083	-0.0323	0.1711	1.0000								
Ln Cash flow	11,430	10.5241	2.1351	0	17.7660	0.1956	0.3585	-0.0758	0.0336	-0.0046	0.1159	0.8642	1.0000							
Age	15,060	34.8372	29.8129	0	190.0000	0.0215	0.1700	-0.2829	-0.1820	-0.2270	0.2812	0.2384	0.1883	1.0000						
High technology manufacturing	15,242	0.1268	0.3327	0	1	-0.0031	-0.0207	0.0787	-0.0226	0.0041	-0.0271	-0.0335	-0.0380	-0.0460	1.0000					
Medium/high technology manufacturing	15,242	0.1280	0.3341	0	1	-0.0450	0.0127	0.0097	0.0450	0.0344	0.0925	0.0724	0.0353	0.1402	-0.1630	1.0000				
Medium/low technology manufacturing	15,242	0.0967	0.2956	0	1	-0.0325	-0.0005	0.0302	0.0479	0.0501	0.0342	0.0263	0.0199	0.0742	-0.1239	-0.1355	1.0000			
Low technology manufacturing	15,242	0.0927	0.2900	0	1	-0.0109	-0.0114	0.0333	0.0382	0.0382	-0.0323	0.0191	-0.0076	0.0897	-0.1336	-0.1461	-0.1111	1.0000		
Knowledge intensive services	15,242	0.2551	0.4359	0	1	0.0327	-0.0027	-0.1097	-0.0761	-0.0930	-0.0006	-0.1346	-0.0954	-0.1598	-0.1961	-0.2145	-0.1631	-0.1758	1.0000	
Less knowledge intensive services	15,242	0.1711	0.3766	0	1	0.0433	0.0052	-0.0143	-0.0166	-0.0190	-0.0499	0.0387	0.0382	-0.0386	-0.1905	-0.2084	-0.1585	-0.1708	-0.2508	1.0000

*Note: Correlations with * are significant at 5%*

** p<0.05, ** p<0.01, *** p<0.001*

Appendix B

(File too large to include in this manuscript. Can be sent/attached separately)

Appendix C

Appendix C

Poisson regression analysis of the number of THOFC subsidiaries

Variables/specification	(1) THOFC subsidiaries	(2) THOFC subsidiaries	(3) THOFC subsidiaries
EMNE	0.540***	0.227***	
	(0.0408)	(0.0271)	
Institutional fragility	0.0114***	0.00115*	0.00401***
	(0.00107)	(0.000452)	(0.000296)
Institutional fragility * EMNE	-0.0120***		
	(0.00115)		
Corporate Tax Rate	-0.0614***	-0.0621***	-0.0667***
	(0.000826)	(0.000829)	(0.000628)
Ln Operating revenue (Turnover)	0.162***	0.164***	0.168***
	(0.00725)	(0.00724)	(0.00722)
Ln Cash flow	0.125***	0.123***	0.118***
	(0.00685)	(0.00684)	(0.00680)
Age	0.00569***	0.00556***	0.00533***
	(0.000207)	(0.000206)	(0.000203)
High technology manufacturing dummy	0.199***	0.199***	0.224***
	(0.0275)	(0.0274)	(0.0273)
Medium/high technology manufacturing dummy	-0.220***	-0.230***	-0.217***
	(0.0293)	(0.0292)	(0.0292)
Medium/low technology manufacturing dummy	-0.307***	-0.323***	-0.313***
	(0.0333)	(0.0333)	(0.0333)
Low technology manufacturing dummy	-0.00951	-0.0166	-0.00902
	(0.0293)	(0.0293)	(0.0292)
Knowledge intensive services dummy	0.391***	0.382***	0.377***
	(0.0242)	(0.0242)	(0.0242)
Less knowledge intensive services dummy	0.281***	0.275***	0.279***
	(0.0238)	(0.0237)	(0.0237)
Total number of foreign subsidiaries	0.00242***	0.00243***	0.00240***
	(0.0000217)	(0.0000216)	(0.0000213)
_cons	-2.535***	-2.306***	-2.186***
	(0.0611)	(0.0566)	(0.0546)
Obs	11,336	11,336	11,336

Standard errors in parentheses

*Note: Correlations with * are significant at 5%*

** p<0.05, ** p<0.01, *** p<0.001*

Appendix D

Appendix D
List of tax haven countries

THOFCs	Number of subsidiaries in the THOFC
Hong Kong	16,758
Cayman Islands	2,983
United Arab Emirates	1,841
Panama	1,089
Bermuda	1,027
Mauritius	976
Liberia	586
Samoa	513
Uruguay	466
Marshall Islands	339
Bahrain	331
Barbados	297
Costa Rica	296
Qatar	280
Lebanon	230
Bahamas	206
Jordan	203
Gibraltar	200
Seychelles	131
Monaco	117
Honduras	115
Trinidad and Tobago	111
Kuwait	95
Saint Lucia	89
Jamaica	83
Swaziland	82
Liechtenstein	52
Antigua and Barbuda	48
Guyana	41
Aruba	40
Belize	25
Djibouti	25
Vanuatu	24
Andorra	23
Solomon Islands	18
Gambia	16
Dominica	15
Saint Kitts and Nevis	15
Grenada	8
San Marino	7
Nauru	2
Kiribati	1
Total	**29,804**