**Firm-specific resources and foreign divestments via selloffs: Value is in the eye of the beholder**

## ***Abstract***

## In this paper, by using a large sample of foreign subsidiaries in Spain, we examine what explains their divestment via sell-offs. By integrating resource-based theory with foreign divestment literature, we examine the role that different subsidiary level resources and innovative capabilities play on its likelihood of being divested. We also argue and empirically show that the most influential subsidiary characteristics that determine divestment differ depending on whether the acquiring firm is a host-country firm or a foreign firm. Our results suggest that foreign subsidiaries are less likely to be sold off when they are characterized by high levels of product innovation performance, human capital or have introduced organizational innovations. Moreover, subsidiaries with export-market oriented capabilities were more likely to be divested to other foreign buyers whereas subsidiaries with domestic-market oriented capabilities were more likely to be divested to domestic buyers.

**Keywords:** Foreign divestment, Foreign direct investment, Resource based theory, Innovation types, Exporting, Financial crisis

## **1. Introduction**

Foreign divestment (hereafter FD) is the counterpart to international expansion where multinational enterprises (MNEs) reduce or completely divest their ownership in a foreign subsidiary ([Bang Nam and Se Young 2004](#_ENREF_1)). Foreign divestments can take the form of a sell-off, bankruptcy (and then liquidation), spin off and finally carve-out (Kolev 2016).In this study we focus only on divestments through sell-offs. Although Foreign Direct Investment (FDI) represents a long-term commitment to a foreign operation, divestments appear to be far from uncommon ([Benito 1997](#_ENREF_8); [Benito 1997b](#_ENREF_6); [Burt et al. 2003](#_ENREF_15)). Indeed, it has been estimated that for every two foreign subsidiaries established, one is divested ([Chung et al. 2013](#_ENREF_17)).

Despite the frequency with which divestments take place, the majority of scholarly attention is drawn to FDI and only very limited research work has been carried out in the area of FD ([McDermott 2010](#_ENREF_58)). This is mainly attributed to the lack of appropriate data. More specifically, studies on divestments require longitudinal data, which are particularly difficult to get hold of ([Lee and Madhavan 2010](#_ENREF_46)). Moreover, MNEs are reluctant to share information on their divestments because exits are often regarded as an admission of failure, particularly in the case of some divestment modes such as closure of a subsidiary ([Benito 1997](#_ENREF_8); [Benito 1997b](#_ENREF_6)). Despite these problems, a renewed interest in this area has been observed recently ([Moliterno and Wiersema 2007](#_ENREF_60); [Berry 2010](#_ENREF_9); [2013](#_ENREF_10); [Kolev 2016](#_ENREF_43)) and this fast growing line of research has argued that a better understanding of international business rests on not only studying FDI and internationalization, but also FD and de-internationalization ([Berry 2010](#_ENREF_9); [McDermott 2010](#_ENREF_58); [Berry 2013](#_ENREF_10); [Soule et al. 2014](#_ENREF_68)).

Examining the causes of divestments is important because divestment has repercussions not only at the firm but also at the country level. For instance, apart from the fact that divestments are considered to be major strategic decisions with critical implications for an MNE’s capabilities, competitive strategy and overall performance (Berry 2010; 2013), when a foreign subsidiary is divested through sell-off, it can, at least in theory, lose access to the foreign parent’s resources including technology and managerial capabilities. This, in turn, means that at a country level, FD could deprive the host economies from a number of benefits associated with FDI, related especially to technology transfer and spillover effects ([Belderbos and Jianglei 2006](#_ENREF_5); [McDermott 2010](#_ENREF_58)).

Given the importance of investigating the phenomenon of foreign divestment, in this study we focus on the determinants of foreign divestment and we make a number of contributions based on recently identified gaps within the divestment literature. First, we extend the theory on foreign divestments by grounding our discussion on Resource Based Theory (RBT), a theory argued to be considerably underutilised in divestiture research ([Kolev 2016](#_ENREF_43)). This is in direct contrast with the part of IB literature that looks at foreign market entry decisions and post-entry performance where the RBV has been instrumental in specifying the nature of resources required to overcome the liability of foreignness ([Jay et al. 2001](#_ENREF_41)). Although the theory on divestiture (McDermott, 2010; Dunning and Lundan, 2008) suggests that subsidiaries that enjoy an advantage over rivals are less likely to be divested by an MNE, it does not shed light on which capabilities or resources are more important for subsidiary retention. By using RBT we contribute by showing which those resources and capabilities are, and by also explaining how they allow a subsidiary to generate a competitive advantage that can be transferred to other units within the MNE. Furthermore, we provide arguments regarding why a different group of resources and capabilities although valuable to a subsidiary, do not lead to a competitive advantage and therefore play no role on a MNE’s decision on whether to divest a certain subsidiary.

In more detail, we classify resources into three categories; physical, human and organizational (Barney, 1991). Physical can include a firm’s plant and location. Human refer to the skills of employees and finally organizational include a firm’s individual routines that make its structure. Because capabilities refer to the capacity of a group of resources to allow a firm to perform an activity more effectively than rivals (Grant, 1991), we focus on different types of innovative capabilities as potential sources of competitive advantage. Here, we use the taxonomy suggested by Schumpeter (1934) and used in a number of studies (Tavassoli and Karlsson, 2015; Varis and Littunen, 2010; Kim and Lui, 2015). We hence differentiate between product, process, organizational and marketing innovations. Product innovation refer to the introduction of new or significantly improved products to the market. Process innovation corresponds to new methods of production and ways of handing a good or service (Roper et al., 2008). Organizational innovation refers to the implementation of new managerial practices for internal workplace organisation or external relations (Genter and Hecker, 2014; Mothe and Thi, 2010). Finally, marketing innovations involve meaningful changes to the methods used for product promotion, pricing, place/positioning (distribution channels) as well as changes in product design[[1]](#footnote-1) (Tavassoli and Karlsson, 2015; Varis and Littunen, 2010).

After considering the above taxonomies, we contribute by providing theoretical arguments and by empirically showing that subsidiaries that develop product and organizational innovations are more likely to enjoy a competitive advantage and are less likely to be divested. On the other hand, process and marketing innovations are not believed to be sources of competitive advantage and should have no effect on the likelihood of a subsidiary being divested. Finally, we contribute by arguing that within an MNE setting, some individual subsidiary resources (employee skills) can provide a competitive advantage for the entire MNE (Hatch and Dyer 2004; Wright et al, 1994) and therefore also reduce the chances of a subsidiary being divested. This is despite RBT based suggestions that individual resources can rarely be a source of a competitive advantage (Srivastava et al 2001).

Moreover, in spite of arguments derived from the FDI literature suggesting that in general, foreign firms possess a different set of strengths and liabilities compared to their local counterparts ([Chang, et al., 2013a](#_ENREF_13), [Mata & Freitas, 2012](#_ENREF_43), [Xu, et al., 2006](#_ENREF_61)), the literature on foreign divestments has failed to take into account the origin of the buyers. Along these lines, we make an additional contribution by showing that certain capabilities that foreign subsidiaries possess can determine whether they are more likely to be acquired by a host country (local) or another foreign based firm.

In more detail, we contribute by constructing theoretical arguments suggesting that foreign subsidiaries with the ability to sell products to foreign markets are more likely to be acquired by other foreign MNEs (hereafter foreign to foreign (F-F) divestment), whereas foreign subsidiaries that cater only to the host-country market are more likely to be acquired by host-country firms (hereafter foreign to local (F-L) divestment). Understanding the antecedents of these two divestment modes is important because these two forms of divestments have different implications on the host countries. F-L divestments can deprive the host-country of foreign capital, technology and management resources whereas F-F divestments can in theory continue to facilitate these foreign resources to the host-country.

Finally, our study also makes a number of empirical contributions. First, we are able to infer causality in our models, a critical issue in the advancement of divestiture research ([Kolev 2016](#_ENREF_43)), and by adopting an appropriate annual longitudinal dataset of an 8 year period, we address a data limitation that has constrained research in this field (Lee and Madhavan, 2010).

Second, our study improves methodologically by being able to focus only on one form of divestment; that of sell-offs. This is in contrast with a number of studies that rarely distinguished between exits due to liquidation/bankruptcy and those caused by sell-offs ([Hennart et al. 1998](#_ENREF_38); [Chidlow et al. 2014](#_ENREF_16)). Nevertheless it is believed that those two processes are driven by different factors and understanding the determinants of each one of them can increase our knowledge regarding de-internationalization ([Mata and Portugal 2000](#_ENREF_55)). Indeed, most studies that investigate the survival of foreign subsidiaries acknowledge as a limitation the fact that they consider both liquidations and sell-offs as non-surviving ventures (see for example [Geroski et al. (2010)](#_ENREF_33), [Mata and Portugal (2002)](#_ENREF_57))[[2]](#footnote-2). This is despite existing evidence indicating that the majority of foreign divestments take the form of sell-offs rather than liquidations/bankruptcies ([Gomes-Casseres 1987](#_ENREF_34); [Hamilton and Yuen Kong 1993](#_ENREF_35); [Hennart et al. 1998](#_ENREF_38)).

The remainder of the paper is structured as follows. In the next section, we first provide the study’s theoretical framework and then we formulate our hypotheses. Section 3 introduces the data and outlines our empirical strategy. Section 4 presents the results followed by the discussion of our key findings and the final section provides conclusions.

## **2. Theoretical background and hypotheses**

Overall, the divestiture literature argues that divestment occurs when the original reasons for investment are eroded ([Liu and Siler, 1996)](#_ENREF_48). [Boddewyn (1983)](#_ENREF_11) first developed a vital theory on FD by relating FD to FDI theory and by arguing that a foreign subsidiary is more likely to be divested when an MNE realises that a specific subsidiary no longer possesses a competitive advantage**,** or it is no longer profitable to internalise advantages or finally it is not profitable to internalise its competitive advantage in the particular host-country ([McDermott 2010](#_ENREF_58)). Therefore, according to this theory, if MNEs engage in international operations in order to realize ownership advantages, location advantages, and internalisation advantages ([Dunning and Lundan 2008](#_ENREF_24)), disengagement from foreign operations should occur because either these advantages are diminished or not existing anymore.

Although divestment theory and literature emphasises that possessing an advantage reduces the chances of a foreign subsidiary being divested, it is still not clear what types of competitive advantage and what capabilities/resources that are linked with such advantages, contribute more towards reducing the likelihood of divestment taking place. With regards to when a firm holds a competitive advantage over rivals, RBT ([Barney 1991](#_ENREF_4)) suggests that this occurs when a firm possesses resources or capabilities that are valuable and rare and in addition that a firm enjoys a sustained advantage, when such resources are also inimitable and non-substitutable (VRIN resources). Therefore, in this paper we complement divestment theory with RBT and by doing so we shed light on the type of resources (employee skills) and innovative capabilities (product and organizational) that reduce the chances of a subsidiary being divested.

Nevertheless, it is also argued (Barney, 1991) in RBT that, unanticipated changes in the economic structure of an industry can render the capabilities/resources that are important for a competitive advantage irrelevant. For instance, because of changes in the external environment, the value or rareness of firm-specific capabilities may diminish over time and, therefore, the initial ownership advantages that the firm possessed at the time of making the foreign investment may change after a certain period. Such a change or depletion in ownership advantages may cause subsequent divestments. In light of this, in this paper we examine the effect that an environmental jolt (Wan and Yiu, 2009) such as a financial crisis, has on the likelihood of foreign subsidiaries being divested.

## **2.1 Hypotheses development**

We begin by suggesting that certain capabilities (product and organizational innovation) and individual resources (employee skills) allow subsidiaries to develop a competitive advantage which reduces their chances of being divested. Moreover, the value of such an advantage for an MNE is expected to increase depending on how easily it can be transferred to other units within the MNE network (Jensen and Szulanski, 2004). By transferring such an advantage, an MNE will be able to also draw benefits in the countries that these units reside. On the other hand, other capabilities (marketing and process innovations) or resources (i.e., physical) might not provide a subsidiary with a competitive advantage.

Regarding innovative capabilities, the launch of innovative products has the potential of placing firms in new global niches and expanding market segments. This allows firms not only to capture greater market share and enjoy a temporary monopoly position, but also increases the willingness of customers to pay a premium price for those products (Jansen et al, 2006; Zhang et al, 2013; Tavassoli and Karlsson 2015).Firms involved in product innovation have also been linked with higher rates of competitiveness and growth, even in a period of country level economic stagnation ([Lynskey 2004](#_ENREF_51); [Marvel and Lumpkin 2007](#_ENREF_54)). The technological knowledge imbedded in innovative products can also be transferred from country to country with considerable ease (Van Beers and Zand, 2014; Hsieh et al., 2018), something that can be of benefit to units within the entire MNE network. This is because technological knowledge is patentable, can be codified and therefore explained to managers in other MNE units. For those reasons, such firms have been found to be more heavily controlled by the parent firm ([Mata and Portugal 2002](#_ENREF_57)). Furthermore, it is to the strategic interest of MNEs (in order not to jeopardize their long-term competitiveness), to retain valuable technological know-how within the MNE network and would therefore be less likely to sell subsidiaries with strong capabilities in new product development and commercialisation.

There are also some practical reasons that make the sell-off of such subsidiaries more difficult to take place ([Brauer 2009](#_ENREF_13)). In contrast to physical assets, knowledge/intangible assets are difficult to be valued particularly due to market imperfections. For example, a firm would not be willing to disclose its technologies to a prospective buyer before the buyer agrees to acquire the technology and a buyer would not want to purchase the technology without first examining it. Ascertaining the value of the technology and agreeing on a price would be difficult in such a situation as both parties need to have full information regarding the characteristics of the technology.

We also expect subsidiaries that introduce organizational innovations to have lower chances of being divested. First, strong arguments exist that organizational innovations generate competitive advantage (Barney, 1991; Ganter and Hecker, 2013a) and have been found to enhance a firm’s overall performance (Mol and Birkinshaw, 2009; Mazzanti et al., 2006). Moreover, because they are socially complex and are part of an intricate organizational structure, they are also difficult to be imitated from competitors (Kim and Lui, 2015; Tavassoli and Karlsson 2015). Second, and as long as adaptation to different cultural settings is possible, organizational innovations can be transferred from subsidiaries to other units within the MNE network (Jensen and Szulanski, 2004; Andersson et al., 2001). Hence, subsidiaries that develop organizational innovations can increase not only their own competitiveness but also the competitiveness of other units within the MNE. Moreover, when different units implement similar innovative practices, the efficiency and synergy across the entire MNE network improves (Kostova and Roth, 2002). MNEs therefore transfer organizational practices between units especially if they believe that these reflect core competencies, are of strategic importance and are a source of competitive advantage (Kostova, 1999). Indeed, the long-term prosperity of MNEs has been linked with their ability to identify and share such practices across units (Jensen and Szulanski, 2004). Due to this important role that subsidiaries that develop organizational innovations play for the MNE’s competitive advantage, they should be expected to be less likely to be divested.

Although product and organizational innovations can provide a firm with a competitive advantage as they add value to a firm, can be rare and difficult to imitate (due to IPRs and complexity respectively), market and process innovations can be more easily copied and then diffused within an industry. Those two types of innovation are therefore less likely to be a source of a competitive advantage and to affect the likelihood of a subsidiary being divested. For instance, the introduction of new or the change of existing methods related to sales (i.e., internet), packaging, pricing and distribution, although they will be valued by customers (Mothe and Thi, 2010) can be easily observed and copied by rival firms. Moreover, market innovations that have been developed by a subsidiary in a certain country, might be difficult to be adapted and applied to other countries due to variations in laws, distribution networks etc (Hill, 2014).

Similarly, process innovations are less likely to lead to competitive advantage. First, in the majority of industries, most firms buy process equipment from other firms that operate in the machinery and equipment industries and specialize in the production of those processes (Tavassoli and Karlsson, 2015). Those innovations are therefore available to other firms in an industry sector which means that appropriability for process innovation is low (Teece, 1986). Even if a firm is among the first to adopt a certain process innovation or has developed one, those can be quickly diffused within a sector (Battisti and Stoneman, 2005). Often, firms themselves provide training to their suppliers when it comes to the usage of new processes (Corsten and Felde, 2005). Toyota for example provides detailed supplier training for manufacturing as well as component delivery processes. However, suppliers can then diffuse those processes to different customers (Hsieh et al., 2018). Based on the above arguments, we suggest that although the introduction of product or organizational innovations by foreign subsidiaries reduces their likelihood of being divested, process and marketing innovations have no such effect:

*H1: Foreign subsidiaries with higher levels of product innovation performance are less likely to be divested.*

*H2: Foreign subsidiaries that introduce organizational innovations are less likely to be divested.*

According to RBT, individual resources on their own can rarely lead to firm level competitive advantage (Grant, 1991). However, in this paper we argue that within an MNE setting, high level of employee skills in a foreign subsidiary can provide an MNE with a competitive advantage and therefore reduce the chances of that subsidiary being divested.

Highly skilled employees can make a significant contribution when it comes to the development as well as the successful implementation of different types of firm level innovations (Tavassoli and Karlsson 2015; Ganter and Hecker, 2013a; Caroli and Van Reenen, 2001). First, skills derived from education are linked with enhanced cognitive ability (Hatch and Dyer, 2004). Increased cognitive ability improves the rate at which employees learn and adapt in the face of environmental or technological changes. This allows highly skilled individuals to be able to introduce appropriate and efficient strategies in response to those changes and develop relevant (innovative) capabilities (Wright et al., 1994). Furthermore, once new innovations are adopted, such employees can adjust to resulting firm level changes faster and hence improve the chances that these innovations will be successful (Snow and Snell, 1992; Caroli and Van Reenen, 2001). High level of skills is therefore important not only for developing new strategies and capabilities but are also important for their subsequent success (Hambrick, 1987).

Moreover, different countries specialise in different knowledge types and knowledge tends to be geographically bounded (Kafouros and Forsans, 2012). MNEs can benefit from accessing different types of foreign based knowledge because this enables them to make more valuable knowledge combinations and hence innovate (Hsieh et al., 2018). Given that knowledge ultimately resides within companies and their employees (Mata and Portugal, 2002), MNEs can directly and continuously access superior foreign based knowledge only if they have access to the knowledge stock of highly skilled employees. Because of this, access and retention of foreign based human capital is among the priorities of MNEs and is regarded as vitally important for their knowledge-intensive capabilities (Cascio & Boudreau, 2016).

However, access to highly skilled employees will not result in a competitive advantage if rival firms are able to hire employees that possess similar types of knowledge. Although this might be the case for domestic firms where employee mobility is possible within a country, labour is not as mobile across borders due to employee search and social costs and because of uncertainty about job success (Hatch and Dyer 2004). Therefore, owning a foreign subsidiary characterised by highly skilled employees can allow an MNE to develop a competitive advantage that can be applied to other markets. This is because first, it provides access to superior specialised foreign knowledge that can be rare in the (MNE’s) home as well as other markets that the MNE operates and second, because at a global level this knowledge is highly immobile and hence not many firms have access to it.

Moreover, there are some practical reasons why the selling of subsidiaries characterised by high levels of employee skills might be difficult to take place. The buyer will ultimately want ownership not only of the valuable technology but also of key personnel within the subsidiary ([Brauer 2009](#_ENREF_13)). This last point complicates the process because often, separating knowledge from employees can be a complicated task and because the selling firm will not be able to guarantee that key employees will not walk away after the acquisition takes place (Hall, 1993).

Indeed, many of the problems associated with acquiring companies with a highly skilled workforce, arise from conflicts over intellectual property rights (especially those that have not been patented) between the acquiring company and employees of the company that is being divested. Often, because of these disputes, these key employees leave to work for someone else, or even start their own company (Grant, 1991).

*H3: Firms with higher levels of human capital are less likely to be divested.*

The recent developments in RBV, more specifically [Barney and Hesterly (2015)](#_ENREF_3)’s VRIO framework, have emphasised the critical role of the organization itself in harnessing the value of the resources. [Barney and Hesterly (2015)](#_ENREF_3) argue that the extent to which the firm can appropriate competitive advantage from a given set of resources will also be determined by the organisational support that can be provided to those resources, i.e. the organisation must be suitably organised to support/exploit the VRIN resources that it controls. This suggests that some organisations might be in a better position than others to fully exploit a given bundle of resources and capabilities that a divested firm possesses. It may also imply that the characteristics of the resources/capabilities of the divested unit may determine the ultimate buyer of the divested firm. Based on this logic, we posit that a subsidiary’s domestic or foreign market orientation (Luo, 2001) (whether the subsidiary capabilities are geared towards serving foreign markets via exporting or only the domestic market) will influence the post divestment ownership (local vs foreign) of the divested subsidiary. In more detail, foreign subsidiaries that only serve the domestic (host country) market will have developed capabilities that on average will be regarded more valuable by other host country firms in relation to foreign firms. These capabilities refer not only to being able to identify local customer needs more effectively but also respond to those by directly applying advanced foreign technological knowledge that other local firms do not have access to (Van Beers and Zand, 2014). This will allow for the development of more innovative solutions and will provide firms with an advantage over local rivals (Zahra et al., 2000; Yeoh, 2004). All these reasons suggest that on average, local buyers are more likely to acquire foreign divested subsidiaries that serve the domestic market.

On the other hand, foreign MNEs are more likely to acquire foreign subsidiaries that have the ability to operate across borders. This seems to be the case especially because foreign MNEs are more likely to be interested in firms that can be incorporated within and be part of their global production network ([Filatotchev et al. 2008](#_ENREF_29)). This is supported from the fact that at least half of the world’s trade value takes place through intra subsidiary transactions within an MNE network (Dicken, 2014). A wider network allows MNEs to increase operational flexibility, deal with demand fluctuations in different regions, which in turn allows them to reduce risk but also increase potential returns ([Kim et al. 1993](#_ENREF_42)). It is more likely therefore that foreign MNEs will show preference to a subsidiary that already had such a role within another MNE’s network. Moreover, compared to local owners, foreign owners have more motivation and capability to serve export markets, largely due to their superior resources, multi country presence, advance marketing skills/knowledge and across-country orientation ([Filatotchev et al. 2001](#_ENREF_28); [Wang et al. 2007](#_ENREF_69); [Yi and Wang 2012](#_ENREF_70); [Ganotakis and Love 2012a](#_ENREF_31); [Singla et al. 2017](#_ENREF_66)).

This does not mean that foreign buyers will not be interested in subsidiaries of other foreign MNEs that focus only on the host country’s market. However, we argue that if servicing only the local market is the strategic intend of a foreign MNE, then on average these subsidiaries might not be their preferred choice. First, when MNEs are seeking to acquire firms that are domestically market orientated, they have two options. The first is to acquire a local firm and the second to acquire a subsidiary of a foreign MNE. Compared to existing foreign subsidiaries, local firms are expected to possess capabilities that can reduce the extent of MNE’s liability of foreignness in the host country (Chang et al., 2013; Peng, 2001; Zaheer, 1995). Local firms are better equipped to understand local consumers and they benefit from a more recognizable/established brand in the local market (Luo, 2001). Moreover, they are more likely to be closely linked/integrated with local suppliers, distributors, buyers and even competitors. All the above allow local firms to be more effective in responding to new market opportunities in relation to foreign subsidiaries (Slangen and Hennart, 2008). Therefore:

*H4a:* Subsidiaries with domestic market capabilities are more likely to be bought by local buyers. Therefore, F-L divestments are more likely with firms catering to domestic markets.

*H4b:* Subsidiaries with foreign market capabilities are more likely to be bought by foreign buyers. Therefore, F-F divestments are more likely with firms catering to foreign markets*.*

RBT postulates that the value and uniqueness of resources that firms possess internally is essentially determined by the external environment. When external conditions change, resources that were rare and add value to a firm at a certain time period will no longer do so at a later point in time (Barney, 1993). For the case of divestments, this potentially means that the reasons that kept a foreign subsidiary within the network of an MNE might no longer hold if external conditions change, something that in turn can increase the probability of divestment.

During a worldwide financial crisis, the economic prospects and stability of the destination but also the home country can be adversely affected. At a firm level the crisis can cause a decline in consumer but also industrial (business to business) spending which can result in reduced revenues and profits. Because of this, some firms experience or anticipate a reduction in overall performance (Cerato et al., 2016). To respond to this development, a MNE can reduce resource deployment to some foreign based subsidiaries in order to avoid a scenario where resources are allocated from units that have a greater profit potential to units that contribute less to overall MNE performance (Zhou et al., 2011).

Not divesting part of that portfolio when faced with increased uncertainty, and unpredictable forecasts, can create a level of financial risk unlikely to be tolerated by investors (shareholders) of MNEs who will in turn put pressure to the respective boards of those companies to undertake divestments ([Brauer 2009](#_ENREF_13); [Chung et al. 2013](#_ENREF_17))[[3]](#footnote-3). The possibility of large losses or even bankruptcy during an economic downturn, increases shareholders' scrutiny and can make CEOs more cautious and risk averse in strategy‐making (Zona, 2012).

The sale of part of a MNE’s foreign network enables MNEs to obtain expedient funds in a period when access to the external capital markets can be limited (Zhou et al., 2011). These funds can then be redeployed more strategically ([Montgomery and Thomas 1988](#_ENREF_61); [Berry 2010](#_ENREF_9)).

Although there is evidence that the recent financial crisis has triggered a series of foreign divestments in the banking sector (see for example [Lund et al. (2013)](#_ENREF_50)), surprisingly the impact of the financial crisis on the foreign firms’ divestment actions has not being investigated in any empirical study, although [Chung et al. (2008)](#_ENREF_18) have investigated the effect of the 1997 Asian Economic Crisis.

*H5: Foreign divestments are more likely during the financial crisis.*

## **3. Data and Methodology**

3.1 Data and sample

The analysis in this study is based on data derived from the Spanish Technological Innovation Panel (PITEC), an annual survey based on the Community Innovation Survey (CIS) framework. The survey is carried out by the Spanish National Statistics Institute (INE) in collaboration with the Spanish Science and Technology Foundation (FECYT) and the Foundation for Technological Innovation (COTEC). The PITEC data are organized as a panel dataset and contain information from successive waves of the Spanish innovation survey providing us a panel dataset of 9 years (from 2008 to 2015)[[4]](#footnote-4). Our sample of interest is all foreign owned subsidiaries.

We investigate the changes in ownership by tracking the location of company headquarters. If the location of company headquarters changes from a foreign country to Spain, we consider it as an F-L divestment. If it changes from one foreign country to another foreign country, we consider it as an F-F divestment. However, we cannot track the foreign divestments where ownership changes but the country of ownership does not change, for example, when a Japanese MNE sells its stake in a Spanish subsidiary to another Japanese MNE. However, we do not anticipate this to have a substantial effect on our analysis for a number of reasons. First, we do not expect the number of such instances to be considerable, at a level that will affect our estimated results as MNEs are less likely to sell foreign subsidiaries to rival MNEs that come from the same country. For example, it is unlikely that a foreign MNE will sell a foreign subsidiary to a rival firm from the same country given that it will be easier for the rival firm to use the profit generated from that foreign market to expand operations in the divesting firm’s own country (main market). This can reduce the divesting firm’s home market share, profit and ability for future investments.

Moreover sell-offs are considered to be deliberate transactions from the management of the divested firm which has full control over the process, (unless the firm is under financial distress which is not perceived to be the main reason for divestments ([Brauer 2006](#_ENREF_12); [Berry 2010](#_ENREF_9))). The divestor therefore autonomously determines the deal’s structure ([Brauer 2006](#_ENREF_12)) which makes it highly unlikely for a subsidiary to be sold to a direct competitor.

Our sample consists of 1672 foreign firms over the period 2008-2015. We identified 1185 occurrences of foreign selloffs during 2008-2015, out of which 522 are F-L divestments and 663 are F-F divestments. These figures show that foreign firms frequently offload their foreign affiliates. This is quite interesting, given that in comparison with other types of financial flows such as portfolio investment and debt, FDI is generally considered as the least volatile ([Manyika et al. 2014](#_ENREF_52)). Nevertheless this finding is in line with prior predictions regarding the number of divestments that take place ([Chung et al. 2013](#_ENREF_17)). Table 1 summarises the total selloffs on a yearly basis.

\*\*\* Insert table 1 about here \*\*\*

Table 1 allows us to observe the descriptive statistics related to H5 on the level of divestments during the financial crisis. Divestment activity is significantly higher during the period 2008-2009.

3.2 Methodology

*Dependent variables*

Our dependent variable, foreign divestment, is captured in two ways, given that we use two different econometric models to carry out the analysis. First, we use a dummy variable (Selloff) to capture whether a subsidiary undergoes a selloff or not. ‘Selloff’ takes the value of 1 if the foreign firm is sold off and 0 otherwise. Our second variable (Selloff Type) is a categorical variable that captures the form of selloff and it is used in order to investigate whether different factors are more important depending on whether the buyer is a foreign or a host-country firm. It takes the value of one if the foreign firm is sold off to a local ownership, two if the foreign firm is sold off to a foreign ownership, and zero if the firm is not sold off.

*Key explanatory variables*

As a measure of a firm’s level of human capital, we use the percentage of employees with degrees, a variable argued to reflect potential labour quality ([Love et al. 2014](#_ENREF_49)). As a measure of product innovation performance, we considered the percentage of sales from innovative products that have been introduced during the last three years (Roper et al., 2008; Love et al., 2014). Process innovation is measured as a dummy of whether a firm introduced new methods of production and ways of handing a good or service (Roper et al., 2008). To capture marketing innovation, we used the questions in the questionnaire that ask the firms to disclose whether they introduce the following four types of marketing innovations in the last three years: (1) Significant modifications to the design or packaging of goods or services, (2) New product-promotion techniques or channels, (3) New methods for positioning the product in the market or sales channels, and (4) New methods for establishing prices of goods or services. We created a composite variable by adding these four variables to reflect how many types of marketing innovations were carried out (Kim and Lui, 2015). To capture organisational innovation, we used the three questions that asks the firms to disclose whether they introduce the following three types of organisational innovations in the last three years: (1) New business practices in work organisation and company procedures, (2) New workplace-organisation methods in the company with objective of better distribution of responsibilities and decision making and (3) New methods for managing external relations with other companies or public bodies. Again, we created a composite variable by adding these three variables to reflect how many types of organisational innovations were introduced (Kim and Lui, 2015). In order to capture the market orientation of a firm, we include a dummy variable (*Export Market Orientation*), capturing whether a firm sells products/services to foreign markets or whether it targets only the domestic market (Luo, 2001). In order to capture the effect of financial crisis, we included a dummy variable (*Financial crisis*) that takes the value of 1 for 2008 and 2009, and zero otherwise.

## *Control variables*

We controlled for a number of firm specific characteristics that are often used to explain divestiture. First, in order to control for firm size and vintage, factors that are often considered in studies investigating determinants of divestments, ([Mata and Portugal 2002](#_ENREF_57)), we included the logged value of the number of employees (Size) as a proxy for firm size (Roper et al., 2008) as well as a firm’s age (Age) (Dai et al., 2013; Benito, 1997). In order to account for firm performance, a key determinant of both entry and exit of firms to/from foreign markets (Berry 2010; 2013), we included firm level labour productivity (Productivity), measured as the sales (in € millions) per employee, ([Ganotakis and Love 2012a](#_ENREF_31); [Engel et al. 2013](#_ENREF_25)). To maintain the causal relationship between divestment and the aforementioned variables, we lagged those variables by one year. We also used a variable (Related) in order to measure the relatedness between the parent/group and the subsidiary ([Markides 1992](#_ENREF_53" \o "Markides, 1992 #899); [Berry 2010](#_ENREF_9)). This variable takes the value of one if the subsidiary has purchased R&D services from foreign businesses of the same group and zero otherwise. This is an appropriate variable to capture this relationship because MNEs have been shown to acquire subsidiaries that carry out R&D in similar areas or otherwise subsidiaries with greater R&D resource similarity (Yu et al., 2016). Moreover, a subsidiary will be able to exchange, absorb and successfully assimilate externally acquired knowledge from the MNE, only if it possesses a highly relevant basic (R&D) knowledge base in relation to the knowledge that is received from the MNE (March, 1991; Lane and Lubatkin, 1998). Also, given the general consensus in the literature that foreign firms are more likely to exit from countries that experience lower growth rates and as most exit studies have indeed found that the economic growth rate of the host-country is inversely related to MNEs divestment decisions ([Benito 1997](#_ENREF_8); [Berry 2013](#_ENREF_10)), we include the GDP growth rate of the host-country (GDP growth)[[5]](#footnote-5).

Theory on divestments suggests that exit decisions can also occur due to intense competition from rival firms ([Burt et al. 2003](#_ENREF_15)). Therefore, following ([Mata and Portugal 2002](#_ENREF_57); [Henisz and Delios 2004](#_ENREF_37)), we also included the industry level concentration ratio (Concentration) in order to control for any competition effects, measured as the ratio of the total sales of the largest three firms in the industry over total sales with that industry. We also included the industry growth level (in turnover) to control for industry specific performance and industry business cycle effect, as the importance of different types of innovations can vary depending on the life-cycle stage of an industry ([Karniouchina](https://scholar.google.co.uk/citations?user=95YySkAAAAAJ&hl=en&oi=sra) et al., 2013; McDougall et al., 1994). Early stage industries are characterised with increased demand and with a higher rate of growth and technological change in product design. Therefore, firms in those industries tend to put more emphasis and invest more in product related innovations. However, in more mature industries and as industry growth rate slows, process innovation can become more relevant as firms compete through scale economies and other efﬁciency or process-oriented advantages (Karniouchina et al., 2013; McDougall et al., 1994).

Finally, we include a series of dummy variables to control for industry sectors. The descriptive statistics and correlations are presented in Table 2.

\*\*\* Insert table 2 about here \*\*\*

*Method*

We use a Binary logistic regression model to estimate the odd of a firm being divested (Divestment) relative to not being divested. Similarly, we use a multinomial logit model in order to differentiate between F-L divestment in relation to not being divested and F-F divestment in relation to not being divested (Divestment type). Such a model was preferred as it was judged to be more suitable in terms of being able to take into account the mutually exclusive choices that a firm undergoes (F-F divestment, F-L divestment and non-divestment), where these options are not sequential or ordered. Furthermore, by using multinomial logit model and binary logistic model, the odd ratios for the explanatory variables can be estimated which provide more useful interpretations of the model’s coefficients (the odds ratio of a variable for example can be used to estimate the change in the odds of a firm being divested rather than not being divested when a one unit change in a specific independent variable occurs).

## **4. Results**

Table 3 reports the results of our baseline specification. Panel 3.1 reports the results of the binary logistic regression model and Panel 3.2 reports the results of the multinomial logit model. To help interpret our results better, for all the models, we report odds ratio[[6]](#footnote-6) instead of the estimated regression parameters.

\*\*\* Insert table 3 about here \*\*\*

First, a firm’s product innovation performance (Innovative Sales) was found (odd ratio less than one) to reduce the chances of a firm being divested (panel 3.1). This provides support for hypothesis 1. Interestingly, in panel 3.2, this effect was significant for F-F divestments but marginally insignificant for F-L divestments. This shows that foreign firms are particularly reluctant to divest their firms with innovation capabilities to other foreign firms. Firms with organizational innovations were found (odd ratio less than one) to be less likely to be divested (panel 3.1). This provides support for hypothesis 2. Again, in panel 3.2, this effect was significant for F-F divestments but insignificant for F-L divestments. This shows that foreign firms are particularly reluctant to divest their firms with organizational innovations to other foreign firms. As we expected, marketing innovations and process innovations were insignificant across all three panels.

Firms with better human capital were found to be less likely to be divested across all three columns. These results provide strong support for hypothesis 3. *Export Market Orientation* has an odd ratio smaller than one in panel 3.1, indicating that foreign firms are less likely to divest their subsidiaries with foreign market orientation. This variable has an odd ratio of smaller than one for F-L divestments, indicating that subsidiaries with domestic market orientation are more likely to be bought by local buyers. This provides support for H4a. In contrast, this variable has an odd ratio of larger than one for F-F divestments, indicating that foreign buyers have a strong preference to buy divested firms catering to foreign markets, providing support for H4b[[7]](#footnote-7).

With regard to the variable capturing the financial crisis, this variable has a very large odd ratio (about 2.7), suggesting that the relative probability of a firm being divested rather than remaining non-divested to be almost three times higher during a financial crisis. Therefore, we found strong support for H5 indicating that divestments are more likely during a financial crisis. To test the robustness of our results for this specific hypothesis but also to control for year specific effects, we carried out a robustness test where we included dummy variables for 2010 to 2014 only (leaving years 2008 and 2009 as the base). All the year dummies from 2010 to 2014 were found to have an odd ratio smaller than one and significant. This provides further evidence that the divestments were less likely during 2010 to 2014 compared to 2008 and 2009, providing further support for H5. The rest of the findings remained unchanged[[8]](#footnote-8).

In terms of other control variables, a firm’s size has an odd ratio smaller than one (panel 3.1), indicating that larger firms are less likely to be divested. However, this effect is insignificant. In panel 3.2, the effect was significant (with an odd ratio of smaller than one) for F-F divestment. This result is in line with previous empirical evidence that have investigated the firm size-exit relationship for the case of liquidations where most of which have consistently found that large firms are more likely to survive, (see for example, [Sharma and Kesner (1996)](#_ENREF_65), [Mata and Portugal (2002)](#_ENREF_57)). Age has an odd ratio smaller than one and is significant. This is in line with the arguments supporting the positive age effect on survival; older firms have less liability of foreignness and less liability of newness, thereby, increasing the chances of survival in a foreign country. *Interestingly, productivity* is insignificant for selloffs. This is in contrast to the findings of previous studies that show that weak firm performance is an important determinant of sell-offs. Competition (*Concentration*) is insignificant. ‘*Related*’ is not significant across all three columns. Interestingly, *GDP Growth* has an odd ratio of larger than one and significant in the first and the third column, indicating that divestments are more likely during periods of economic growth and that is the foreign buyers who are more likely to buy those investments in such periods. Similarly, sectoral growth rate also has an odd ratio of larger than one and significant in the first and the third column, indicating that divestments are more likely during periods of growth and that is the foreign buyers who are more likely to buy those investments in such periods.

Our interest is estimating the selloff probabilities from all foreign owned firms that exist in our 8 year sample, therefore, some firms in our sample can be liquidated at some point in time. Although we argue that the firms that could be sold off would be different from those that could be liquidated, removing these liquidations from our sample might potentially create some selection bias. Therefore, we repeated our analysis by including the liquidations as another form of exit from our sample. The survey provides the information on whether a firm’s status is a ‘closure’ at a certain year and we therefore considered those firms as liquidated. Altogether there were 97 liquidations (7.5%) out of total divestments of 1295[[9]](#footnote-9). We then recoded our two dependent variables to include the liquidation as another exit type and re-estimated our empirical models to test the robustness of our results.

First, we recoded the dummy variable ‘selloff’ to a new categorical variable ‘selloff-liquidation’ that takes the value of one if the foreign-owned firm is sold off, two if the foreign-owned firm is liquidated, and zero if the firm is not divested. We then estimated a multinomial model instead of the Binary logistic regression model, and the results are reported in the table 4. We did not include the age of the firm, as the year of company’s foundation was not available for the firms that were liquidated before 2009[[10]](#footnote-10). All results for selloffs (i.e. column 1) are similar to those of panel 3.1 in table 3[[11]](#footnote-11). From column two, we can observe that liquidations are less likely for firms with better human capital and those that have carried out organisational innovations. Interestingly, productivity has an odd ratio larger than one and significant, indicating that more productive firms are more likely to be liquidated. This is in direct contrast to some of the previous studies that have found weak performance to increase the likelihood of divestment. However, some studies have found that liquidations are likely to occur with firms that are more productive. E.g. Bravo–Biosca and Westlake (2014), looking at productivity growth in Britain from 1998 to 2007, found that a surprisingly high number of firms that went out of business were ones that showed above-average productivity. A potential reason for such a peculiar finding is that labour productivity could be artificially increased just before a liquidation takes place due to redundancies that companies undertake in order to reduce costs.

It can also be noted that, while higher GDP growth increases the chances of sell offs, lower GDP growth increases the chances of liquidations. Similar to selloffs, financial crisis has increased the chances of liquidations.

Second, we recoded the categorical variable ‘selloff type’ to a new categorical variable ‘selloff type-liquidation’ that takes the value of one if the foreign owned firm is sold off to a local ownership, two if the foreign firm is sold off to a foreign ownership, three if the firm is liquidated, and zero if the firm is not divested. We then ran a multinomial model with this new categorical variable, and the results are reported in the table 5. All the results for selloffs (i.e. column 1 and 2) are similar to that of panel 3.2 in table 3. Results for the liquidations (column 3 of table 5) are similar to that of column 2 of table 4.

\*\*\* Insert table 4 and 5 about here \*\*\*

## **5. Discussion and Conclusion**

In this paper, by using a large sample of foreign subsidiaries in Spain, we advance the literature on the determinants of foreign divestments theoretically but also empirically. With regards to the paper’s theoretical contribution, based on recent suggestions from the divestiture field (i.e. [Kolev (2016)](#_ENREF_43)), we link literature on divestments ([Boddewyn 1983](#_ENREF_11)) with RBT ([Barney 1991](#_ENREF_4)), a theory that has rarely been considered in research on divestitures. This in turn allowed us to construct theoretical arguments regarding the role that a subsidiary’s resources and capabilities play on its likelihood of being divested, an issue that by itself has almost never being considered within this literature. More specifically, although RBT (Grant, 1991) suggests that individual resources are less likely to generate competitive advantage, subsidiaries with high levels of employee skills were found to be less likely to be divested. We believe that this occurs because of the important contribution that highly skilled employees make to various aspects of firm but also MNE level competitiveness. First, skilled employees are important not only for the development of different strategies including different innovation types (i.e., product, organizational), but are also important for their post implementation success (Caroli and Van Reenen, 2001). Second, because the type (and level) of knowledge that exists in different countries is embodied within (skilled) employees (Mata and Portugal, 2002) and because MNEs become more competitive by accessing and combining different types of knowledge (Van Beers and Zand, 2014), subsidiaries with highly skilled employees are valuable for the competitiveness and efficiency of the entire MNE.

Regarding innovative capabilities, firms that enjoy high levels of product innovation performance or have introduced organizational innovations were found to be less likely to be divested. For the case of product innovation, we believe that this occurs because these capabilities can provide the entire MNE with a competitive advantage given that such subsidiaries have access to a technological platform that can be moved and applied to units in other parts of the world ([Markides 1992](#_ENREF_53); [Ganotakis and Love 2011](#_ENREF_30)).

Despite some arguments regarding the difficulties of implementing organizational innovations across different cultural and corporate settings, as they might reflect the cultural environment of the country within which have been developed and because their transfer and implementation to a new unit within the MNE network can require substantial changes to that unit’s existing organizational structure (Tavassoli and Karlsson 2015; Kim and Lui, 2015; Camisón & Villar-López, 2014), firms that introduced those types of innovations were less likely to be divested. Therefore, our results are in line with research (Kostova, 1999; Kostova and Roth, 2002) that suggests that MNEs draw competitiveness from organizational innovations and move important ones across units while trying to adapt them to local conditions (Jensen and Szulanski, 2004). We believe that this is because of the wide benefits that organizational innovation can bring to an MNE. Organizational innovations improve employee decision making as well as cross functional and external knowledge exchange and assimilation, while reducing coordination and production costs (Ganter and Hecker, 2014). These factors have been found to significantly enhance not only overall firm performance but also the chances of introducing different types of innovation (Laursen and Foss, 2003; Ganter and Hecker, 2014; Hsieh et al., 2018). Organizational innovation is also often believed to be a more ‘robust’ or prolonged source of competitive advantage even in comparison to product innovation (Ganter and Hecker, 2013a). For instance, in some sectors or markets, new products have a short product life cycle (and therefore provide a short edge), or competitors manage to work around patent protection. However, if a firm’s capability to continuously introduce innovative products is the result of organizational practices, then competitors will find it extremely hard to copy an entire organizational structure. This is because of the tacit and idiosyncratic nature of organizational practices which makes them generally difficult to understand and assimilate for outside observers (Ganter and Hecker, 2013a).

In addition, studies on foreign divestments have so far concentrated solely on the characteristics of the parent firm and the subsidiary whilst completely ignoring the role and characteristics of the buyer. In this paper, we take this first step and we contribute to the discussion on divestments by arguing and verifying empirically that some characteristics that foreign subsidiaries possess, such as the ability to carry out business internationally, will matter more for foreign based buyers whereas firms that concentrate on the domestic market will be of a greater value to domestic buyers and therefore more likely to be purchased by domestic buyers.

Our findings also indicate that MNEs are more likely to sell their foreign subsidiaries during periods of severe external uncertainty, a result that is in line with studies arguing that under such circumstances, MNEs often sell assets abroad in an attempt not only to reduce the level of future financial risk and loss ([Brauer 2009](#_ENREF_13" \o "Brauer, 2009 #875); [Chung et al. 2013](#_ENREF_17)), but also in order to raise and then re-allocate funds to strategically more important and potentially more profitable activities (Berry, 2010; Zhou et al., 2011). However, it has to be noted that although during a financial crisis, divestments via sell-offs are more likely to take place, some firms decide to acquire the subsidiaries that other MNEs divest (Wan and Yiu, 2009).

We can explain this decision by focusing on studies that are based on prospect theory and the behavioural theory of the firm (Ruth et al., 2013; Cerrato et al., 2013, Zona, 2012; Iyer and Miller, 2008). These studies suggest that under conditions of great external uncertainty such as during a financial crisis, the behaviour that different managers exhibit can vary substantially. As already mentioned, some managers can be risk averse and are more likely to divest some foreign subsidiaries in order to reduce overall risk exposure. Other managers however exhibit risk seeking behaviour and respond to lower than expected levels of performance by undertaking greater risks such as making acquisitions (Cerrato et al., 2016; Zona, 2012). These managers attempt to close the performance shortfall by searching for opportunities that will alter a firm’s existing capabilities because current capabilities do not generate the desired level of performance (Ruth et al., 2013). Such opportunities include acquisitions, as by acquiring new units, firms can gain access to a stronger stock of capabilities that can be used to increase future revenues and restore performance to expected levels. Indeed, Iyer and Miller (2008) found that some MNEs increased acquisition activity especially when financial performance was below aspirations. Finally, existing literature also suggests that managers are more likely to make risky decisions and hence carry out acquisitions during an economic downturn if they are required to reach higher performance targets, their firms possess slack financial resources and have greater levels of experience in acquisitions (Alessandri et al., 2014; Cerrato et al., 2016; Iyer and Miller, 2008; Wan and Yiu, 2009; Zona, 2012).

Although weak firm performance has emerged in the literature as one of the main reasons that leads to a divestment of a foreign subsidiary ([Song 2015](#_ENREF_67)), empirical evidence is inconclusive. For instance, while some exit studies have found that firms are likely to divest their poorly performing operations (Berry, 2013), other studies have found that firm performance/productivity is not an important determinant for explaining exits (Engel, Procher, & Schmidt, 2013, Soule, Swaminathan, & Tihanyi, 2014). In this study, by being able to differentiate sell-offs from liquidations, we are able to provide more robust evidence on this ongoing debate in the literature, of whether poor subsidiary performance matters when it comes to divestments. With regards to the results, labour productivity was not significantly related to sell-offs; on the contrary and rather interestingly, we found that more productive firms are more likely to be liquidated. A reason for this can be that firms just before liquidation takes place have reduced employment size in order to reduce costs. Our findings related to weak productivity not being a determinant of selloffs may appear as counter intuitive to our theorising relating subsidiaries’ resources/capabilities to foreign selloffs. We suggest that higher productivity can be the result of many different factors not just product innovation; indeed, productivity is highly heterogenous among firms. It can depend on exporting that enhance sales, process innovation that reduces the number of employees, outsourcing of activities that reduces employees, training that increases efficiency etc. Moreover, sales from innovative products does not always lead to contemporary increase in productivity (correlation is only at 17%), because the firm is in the process of removing old product lines from the market with an initial drop in sales from old products and a gradual increase from new ones. Moreover, the development of radical products requires more marketing and R&D personnel.

In terms of practical implications, our findings can potentially inform managers of both divesting and acquiring firms about the dynamics of FD. For the case of sell-offs, in order for the divesting parent firm to gain the maximum value out of a divestment, it is important to know the acquirers’ perspective ([Doan et al. 2018](#_ENREF_23)), and this study provides insights of what kind of firms local and foreign acquirers may prefer. Such an understanding of the potential pool of buyers as well as their needs and preferences, can enable divesting firms to enhance their value proposition (Berry, 2010) by properly tailoring their communication to the preferences of the buyers, thereby increasing the chances of divesting the subsidiary as well as maximising the value and speed of the divestment ([Ernst & Young 2015](#_ENREF_26)). In a similar note, it is important for buyers/acquirers to know what kind of firms foreign MNEs are likely to divest or not divest and when (under what conditions) and hence when they will be expected to pay over the odds. One of the key challenges for local firms, for example, is to access knowledge and other capabilities that are held outside their country and acquiring foreign subsidiaries in foreign countries is increasingly viewed as a one way of tapping into these foreign advantages ([Buckley and Hennart 2015](#_ENREF_14)). In the light of this, domestic firms could also tap into foreign innovative capabilities by acquiring a foreign invested firm that operates within their country, and this possibility has been rarely emphasised in the IB literature. Nevertheless, our results indicate that this could be challenging and host-country firms might be required to pay over the odds, given that MNEs are unlikely to divest their technologically sound operations or those that are characterised by highly skilled employees and valuable organizational structures.

Despite the fact that foreign divestments could stop/deprive the host economies from many benefits that FDI usually brings in ([Belderbos and Jianglei 2006](#_ENREF_5)), policymakers give less emphasis to the moment of exit although they give greater emphasis to the moment of entry ([Mata and Freitas 2012](#_ENREF_56)). Our results can form the basis for important policy suggestions for any country but can particularly be important for countries such as the UK given the uncertain climate created due to Brexit, especially after a number of foreign MNEs are considering divesting existing operations or not investing in value creating activities such as R&D ([Cumming and Zahra 2016](#_ENREF_19)). Based on findings from this paper, policy makers in the UK should make their priority to pass favourable laws in order to completely overturn this potential trend and attract foreign firms that carry out high levels of R&D, as this will first reduce the probability of those being divested at a later stage whilst at the same time benefiting UK firms from technology transfer and spillovers. In addition, the potential extent of loss caused by divestments to the host economy will depend on the type of divestments and on the context in which the divestment takes place ([Belderbos and Jianglei 2006](#_ENREF_5)). For example, foreign divestment via sell-offs will deprive the host economy from foreign capital, technology and associated know-how ([Cumming and Zahra 2016](#_ENREF_19)). Nevertheless, these benefits can be maintained if those divested firms are bought by different foreign owners. At the very least therefore policy makers can simplify the institutional environment when it comes to a foreign firm selling to another within the host country. In addition, policy makers can enact policies that will entice foreign firms to establish foreign subsidiaries with an exporting role as this will not only help the host economy to balance any trade deficit but also increase the chances that if these firms are to be divested, they will be bought by another foreign owner.

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**TABLES**

**Table 1** Number of divestments on a yearly basis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | Number of foreign firms in previous year | Total foreign selloffs | Number of foreign to local selloffs | Number of foreign to foreign selloffs | Foreign selloffs as a percentage of total foreign firm in the previous year |
| 2008 | 1419 | 397 | 149 | 248 | 27.98 |
| 2009 | 1289 | 170 | 111 | 59 | 13.19 |
| 2010 | 1203 | 109 | 43 | 66 | 9.06 |
| 2011 | 1183 | 113 | 55 | 58 | 9.55 |
| 2012 | 1179 | 133 | 56 | 77 | 11.28 |
| 2013 | 1159 | 94 | 35 | 59 | 8.11 |
| 2014 | 1071 | 84 | 38 | 46 | 7.84 |
| 2015 | 1085 | 85 | 35 | 50 | 7.83 |

**Table 2**: Descriptive statistics and correlation matrix

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | | Mean | S.D. | Min | Max | Correlation coefficients | | | | | | | | | | | | | | |
|  |  |  |  |  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | Selloff | 0.13 | 0.33 | 0 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Selloff type | 0.19 | 0.54 | 0 | 2 | 0.95 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Human Capital | 24.9 | 26.67 | 0 | 100 | -0.04 | -0.04 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Product Innovation | 18.04 | 32.16 | 0 | 100 | -0.03 | -0.02 | 0.02 |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Process Innovation | 0.53 | 0.5 | 0 | 1 | -0.02 | -0.01 | -0.04 | 0.26 |  |  |  |  |  |  |  |  |  |  |  |
| 6 | Marketing Innovation | 0.55 | 1.05 | 0 | 4 | -0.03 | -0.03 | 0.08 | 0.17 | 0.24 |  |  |  |  |  |  |  |  |  |  |
| 7 | Organisational innovation | 0.97 | 1.13 | 0 | 3 | -0.04 | -0.04 | 0.05 | 0.17 | 0.35 | 0.47 |  |  |  |  |  |  |  |  |  |
| 8 | Export Market Orientation | 0.81 | 0.39 | 0 | 1 | -0.05 | -0.02 | 0.04 | 0.13 | 0.15 | 0.02 | 0.09 |  |  |  |  |  |  |  |  |
| 9 | Productivity | 0.42 | 1.53 | 0 | 86.57 | 0 | 0 | 0.08 | -0.01 | 0.01 | 0.01 | 0.01 | -0.04 |  |  |  |  |  |  |  |
| 10 | Related | 0.07 | 0.25 | 0 | 1 | -0.02 | -0.01 | 0 | 0.1 | 0.12 | 0.02 | 0.12 | 0.11 | -0.01 |  |  |  |  |  |  |
| 11 | GDP Growth | -0.45 | 2.18 | -3.57 | 3.43 | 0.02 | 0.03 | 0.02 | 0.01 | -0.03 | 0.01 | 0 | 0.01 | -0.01 | -0.01 |  |  |  |  |  |
| 12 | Size | 5.43 | 1.41 | 0 | 10.63 | 0 | -0.01 | -0.23 | 0 | 0.12 | 0.12 | 0.16 | -0.14 | -0.05 | 0.06 | 0.02 |  |  |  |  |
| 13 | Age | 32.95 | 21.75 | 0 | 173 | -0.05 | -0.04 | -0.06 | 0 | 0.05 | 0.09 | 0.07 | 0.1 | 0.01 | 0.04 | 0.05 | 0.19 |  |  |  |
| 14 | Concentration | 21.45 | 9.01 | 6.8 | 100 | -0.02 | -0.01 | 0.13 | 0.02 | 0.01 | -0.03 | 0.03 | 0 | 0 | 0.07 | 0.03 | 0.07 | -0.03 |  |  |
| 15 | Sectoral growth | 1.78 | 109.13 | -99.82 | 3989.23 | 0.03 | 0.03 | 0.04 | -0.01 | -0.01 | -0.01 | -0.01 | 0.01 | 0.02 | 0.02 | 0.02 | -0.04 | -0.01 | 0.05 |  |
| 16 | Financial crisis | 0.29 | 0.45 | 0 | 1 | 0.17 | 0.15 | -0.09 | 0.02 | 0.09 | -0.04 | -0.01 | -0.05 | 0 | 0.02 | -0.18 | 0.03 | -0.09 | -0.09 | -0.02 |

**Table 3**: Determinants of foreign divestments via selloffs

|  |  |  |  |
| --- | --- | --- | --- |
|  | Panel 3.1 | Panel 3.2 | |
|  | Binary logistic regression | Multinomial logit model | |
|  | Dependent variable: Divestment | Dependent variable: Divestment type | |
|  |  | Foreign to local divestments | Foreign to foreign divestments |
| Human Capital | 0.995\*\*\* | 0.997\*\* | 0.995\*\*\* |
|  | (0.00140) | (0.00205) | (0.00177) |
| Product Innovation | 0.998\*\* | 0.998 | 0.998\* |
|  | (0.00110) | (0.00166) | (0.00139) |
| Process Innovation | 0.972 | 0.923 | 1.004 |
|  | (0.0700) | (0.0974) | (0.0923) |
| Marketing Innovation | 1.001 | 1.005 | 0.998 |
|  | (0.0372) | (0.0536) | (0.0489) |
| Organisational innovation | 0.934\*\* | 0.955 | 0.922\*\* |
|  | (0.0325) | (0.0490) | (0.0411) |
| Export Market Orientation | 0.815\*\* | 0.522\*\*\* | 1.302\*\* |
|  | (0.0683) | (0.0582) | (0.160) |
| Productivity | 1.003 | 1.010 | 0.989 |
|  | (0.0166) | (0.0190) | (0.0282) |
| Related | 0.910 | 0.787 | 0.988 |
|  | (0.126) | (0.179) | (0.165) |
| GDP Growth | 1.074\*\*\* | 1.012 | 1.125\*\*\* |
|  | (0.0153) | (0.0212) | (0.0204) |
| Size | 0.968 | 1.013 | 0.930\*\* |
|  | (0.0223) | (0.0342) | (0.0271) |
| Age | 0.996\*\*\* | 0.995\* | 0.996\*\* |
|  | (0.00161) | (0.00253) | (0.00200) |
| Concentration | 1.000 | 0.999 | 1.000 |
|  | (0.00390) | (0.00640) | (0.00461) |
| Sectoral growth | 1.001\*\*\* | 1.000 | 1.001\*\*\* |
|  | (0.000195) | (0.000388) | (0.000203) |
| Financial crisis | 2.763\*\*\* | 2.783\*\*\* | 2.749\*\*\* |
|  | (0.191) | (0.276) | (0.248) |
| Constant | 0.260\*\*\* | 0.148\*\*\* | 0.1000\*\*\* |
|  | (0.123) | (0.0956) | (0.0637) |
| Observations | 9,593 | 9,593 | |
| R2 | 0.0468 | 0.0504 | |
| chi2 | 334.6\*\*\* | 465.3\*\*\* | |

Note: Reported coefficients are the odd ratios. Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1: One-tailed tests are used for hypothesized variables; two-tailed tests are used for controls. Estimated results for industry specific fixed effects are not reported for brevity.

**Table 4**: Robustness test with including liquidations in the estimation

|  |  |  |
| --- | --- | --- |
|  | Foreign divestments via sell offs | Foreign divestments via liquidations |
| Human Capital | 0.995\*\*\* | 0.985\*\*\* |
|  | (0.00140) | (0.00557) |
| Product Innovation | 0.998\*\* | 0.997 |
|  | (0.00110) | (0.00360) |
| Process Innovation | 0.969 | 0.963 |
|  | (0.0693) | (0.232) |
| Marketing Innovation | 1.001 | 0.979 |
|  | (0.0370) | (0.150) |
| Organisational innovation | 0.930\*\* | 0.757\*\* |
|  | (0.0323) | (0.102) |
| Export Market Orientation | 0.801\*\*\* | 0.870 |
|  | (0.0665) | (0.248) |
| Productivity | 1.003 | 1.009 |
|  | (0.0157) | (0.146) |
| Related | 0.908 | 0.351 |
|  | (0.125) | (0.260) |
| GDP Growth | 1.076\*\*\* | 0.889\*\* |
|  | (0.0152) | (0.0422) |
| Size | 0.950\*\* | 0.676\*\*\* |
|  | (0.0217) | (0.0443) |
| Concentration | 1.001 | 1.028\*\* |
|  | (0.00386) | (0.0112) |
| Sectoral growth | 1.001\*\*\* | 1.001\*\* |
|  | (0.000209) | (0.000351) |
| Financial crisis | 2.889\*\*\* | 1.694\*\* |
|  | (0.196) | (0.389) |
| Constant | 0.255\*\*\* | 0.140 |
|  | (0.122) | (0.179) |
| Observations | 9,654 | |
| R2 | 0.0525 | |
| chi2 | 15197\*\*\* | |

Note: Reported coefficients are the odd ratios. Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1: One-tailed tests are used for hypothesized variables; two-tailed tests are used for controls. Estimated results for industry specific fixed effects are not reported for brevity.

**Table 5**: Robustness test with including liquidations in the estimation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Foreign divestments via sell offs | |  | Foreign divestments via liquidations |
|  | Foreign to local divestments | Foreign to foreign divestments |  |  |
| Human Capital | 0.996\*\* | 0.994\*\*\* |  | 0.985\*\*\* |
|  | (0.00204) | (0.00178) |  | (0.00557) |
| Product Innovation | 0.998\* | 0.998\* |  | 0.997 |
|  | (0.00165) | (0.00141) |  | (0.00360) |
| Process Innovation | 0.937 | 0.989 |  | 0.962 |
|  | (0.0974) | (0.0908) |  | (0.232) |
| Marketing Innovation | 1.001 | 1.000 |  | 0.980 |
|  | (0.0527) | (0.0491) |  | (0.150) |
| Organisational innovation | 0.950 | 0.918\*\* |  | 0.757\*\* |
|  | (0.0482) | (0.0410) |  | (0.102) |
| Export Market Orientation | 0.518\*\*\* | 1.279\*\* |  | 0.871 |
|  | (0.0568) | (0.157) |  | (0.247) |
| Productivity | 1.010 | 0.989 |  | 1.009 |
|  | (0.0178) | (0.0282) |  | (0.146) |
| Related | 0.790 | 0.985 |  | 0.351 |
|  | (0.176) | (0.165) |  | (0.260) |
| GDP Growth | 1.017 | 1.125\*\*\* |  | 0.889\*\* |
|  | (0.0210) | (0.0204) |  | (0.0422) |
| Size | 0.989 | 0.917\*\*\* |  | 0.676\*\*\* |
|  | (0.0328) | (0.0266) |  | (0.0444) |
| Concentration | 1.000 | 1.001 |  | 1.028\*\* |
|  | (0.00629) | (0.00458) |  | (0.0112) |
| Sectoral growth | 1.001 | 1.001\*\*\* |  | 1.001\*\* |
|  | (0.000393) | (0.000221) |  | (0.000352) |
| Financial crisis | 2.967\*\*\* | 2.828\*\*\* |  | 1.694\*\* |
|  | (0.287) | (0.252) |  | (0.389) |
| Constant | 0.148\*\*\* | 0.0967\*\*\* |  | 0.140 |
|  | (0.0961) | (0.0616) |  | (0.179) |
| Observations | 9,654 | |  |  |
| R2 | 0.0542 | |  |  |
| chi2 | 14838\*\*\* | |  |  |

Note: Reported coefficients are the odd ratios. Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1: One-tailed tests are used for hypothesized variables; two-tailed tests are used for controls. Estimated results for industry specific fixed effects are not reported for brevity.

1. Excluding product functionality/features that are included in the definition of product innovation [↑](#footnote-ref-1)
2. [Li and Guisinger (1991)](#_ENREF_47), [Mata and Portugal (2000)](#_ENREF_55), [Meschi and Métais (2015)](#_ENREF_59) and [Mudambi and Zahra (2007)](#_ENREF_62) being some of the few exceptions that differentiate liquidations from sell-offs [↑](#footnote-ref-2)
3. Indeed there is plenty of anecdotal evidence that MNEs have reconfigured and restructured their investments through exiting/relocating their operations during the recent financial crisis (Hryckiewicz and Kowalewski 2011; Powell and Lim 2018). [↑](#footnote-ref-3)
4. Although the PITEC data was available from 2003, some of our key variables such as organizational and marketing innovations were not available for some periods before 2008. [↑](#footnote-ref-4)
5. Source: World Development Indicators [↑](#footnote-ref-5)
6. odds ratio is the probability of choosing one outcome category over the probability of choosing the baseline category [↑](#footnote-ref-6)
7. We also carried out a robustness test based on percentage of sales from exports and the results were consistent. [↑](#footnote-ref-7)
8. We also re-estimated our models while including dummies for all the years (2008 to 2014) and all results remain intact. [↑](#footnote-ref-8)
9. Size of this sample was slightly larger as we did not include age in this sample as explained below. [↑](#footnote-ref-9)
10. In the PITEC survey, the question that asks the year of company’s foundation has only been introduced from the 2009 survey onwards. Therefore, we could not compute the firm age for the firms that were liquidated before 2009. For other firms, we could compute this information for the years before 2009 based on the information reported in 2009. [↑](#footnote-ref-10)
11. To check the robustness of the results, we re-estimated the results after including the firm age for the period 2009-2015, and all the results remain intact except for the financial crises as we could not include the 2008 data. [↑](#footnote-ref-11)