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# **Equity Ownership in Cross-Border Mergers and Acquisitions by British Firms: An Analysis of Real Options and Transaction Cost Factors**

## **Abstract**

We investigate the factors influencing the share of equity ownership sought in cross border mergers and acquisitions (CB M&As). Drawing on real options theory and transaction cost economics (TCE), we address and hypothesize key factors linked to commitment under exogenous uncertainty and the separation of desired and non-desired assets' influence on share of equity sought by acquiring firms in CB M&As. Empirical analysis based on 1872 CB M&As undertaken by British firms in both developed and emerging economies show that British MNEs are more likely to pursue a partial acquisition in a target foreign firm when those foreign firms are from culturally distant countries. Further, findings support the view that the high cost of separating desired assets from non-desired assets motivates firms to make a partial acquisition rather than acquire the target completely. This is one of the first studies to use real options theory to address the cost of commitment under exogenous uncertainty, as well as TCE logic to address the separation of desired and non-desired assets in the target firm, while analysing equity ownership sought in CBM&As. Empirically, our paper contributes by examining CBM&As by British firms in both developed and emerging markets.

**Keywords:** Cross-border M&As, equity ownership, uncertainty, cultural distance, British firms

## INTRODUCTION

Cross-border mergers and acquisitions (CB M&As) are increasingly being used as a foreign market entry strategy by multinational enterprises (MNEs) to create and penetrate new markets, gain synergy benefits, facilitate portfolio diversification, access technological assets and reduce taxation (Arslan et al. 2015; Junni et al., 2015; Pablo and Javidan, 2009). In 2014, the total value of CB M&As reached approximately US\$384 billion (UNCTAD, 2015). During the first three quarters of 2014, the value of M&As involving British firms reached approximately £11 billion (ONS, 2014). Due to their increased global prevalence, CB M&As are clearly important for international business (IB) scholars to better understand.

It has been established in prior literature that CBM&As are risky (Shimizu et al., 2004; Hitt and Pisano, 2009) and their failure rates are relatively high (e.g. Erez-Rein et al., 2009). Moreover, when MNEs acquire foreign target firms, they tend to face significant challenges due to differences in institutional environments (Dikova et al., 2010) and cultures (Dikova and Sahib, 2013) between home and host countries. Some prior IB studies have suggested that alignment in goals of acquiring MNE and target firm can reduce problems associated with the management of CB M&As (Nadolska and Barkema, 2007; Chen, 2008; Das and Kapil, 2012). In this context, we contend that the equity ownership in CBM&As is an aspect that can help to align the goals of acquiring MNE and target firm, as well as reduce the difficulties associated with post CB M&A management. This is especially the case when both acquired and acquirer firms see ownership structure as a mechanism to reduce uncertainties associated with the external environment.

An MNE may acquire 100 percent share capital or equity of the target firm. A full acquisition transfers the ownership and control of the target firm to the acquiring firm. However, an MNE may partially acquire the target firm. Partial acquisition is a form of acquisition where an acquiring firm purchases an equity stake or *part of the share capital* in the foreign

organization (Jakobsen and Meyer, 2008). For instance, Ogilvy and Mather Worldwide, a unit of WPP Group PLC in the UK, acquired a 40% equity in Empresa Tecnica de Comunicacao, a provider of marketing and advertising services in Brazil, for US\$18.83 million in 2004. Thus, we observe several partial CB M&As, rather than all CB M&As being fully owned.

A limited literature (e.g. Chari and Chang, 2009; Arslan and Larimo, 2012) has examined ownership choice in CBM&As, specifically by distinguishing between full acquisitions and partial acquisitions. The ownership choice in CB M&As specifically has been ignored in most previous market entry studies due to the tendency to analyze both full and partial CB M&As together in the case of general establishment mode (greenfield investment vs. acquisition) and ownership mode (wholly owned vs. partially owned subsidiaries) focused analysis (Chen and Hennart, 2004; Arslan and Larimo, 2012). Therefore, our paper aims to develop new insights by analyzing factors influencing MNEs' choice between full and partial CBM&As.

Our paper extends the work of Chari and Chang (2009). First, unlike Chari and Chang (2009), our paper examines CBM&As by British firms in both developed and emerging markets. Therefore, our study sample is more heterogeneous, and findings are more generalizable. Second, Chari and Chang (2009) examined two dimensions of Hofstede's national cultural index i.e. uncertainty avoidance and individualism. In contrast, we examine four dimensions of the GLOBE Project's national cultural index i.e. uncertainty avoidance, power distance, institutional collectivism and in-group collectivism. Third, Chari and Chang (2009) argue that uncertainty avoidance is a more powerful determinant than other dimensions of culture in explaining the ownership choice in CB M&A. However, we found that uncertainty avoidance has no significant impact on the choice between partial and full acquisitions. Our finding tends to suggest that British MNEs are more likely to choose a

partial acquisition in the foreign target firm in the face of high institutional collectivism distance.

The empirical context of our paper further enriches the literature in several ways. Firstly, prior studies analyzing ownership structure have concentrated on CBM&As undertaken in Central and Eastern Europe (Jakobsen and Meyer, 2008), Japanese CB M&As (Chen and Hennart, 2004), and American CB M&As in developed countries (Chari and Chang, 2009). Prior work has found that ownership preferences vary between US firms and those from other countries (Erramilli, 1996), consequently, new research is required examining the factors influencing ownership choice in a non-US context. We argue that despite some similarities between US MNEs and British MNEs, British MNEs differ from US MNEs in terms of pre- and post-M&A management practices. For instance, British and American buyers differ in some of the control mechanisms they exercise over acquired firms, with these practices being in line with their respective administrative and national heritage (Calori, Lubatkin and Very, 1994, p.373). Further, Calori et al. (1994) found British management to be very 'hands-off', with tremendous faith placed in the quality of the acquired local management. In contrast, US management style is more "hands-on". Unlike Chari and Chang (2009), our paper focuses on British MNEs' choice between full and partial acquisitions. Thus, our paper contributes in the British context.

## **LITERATURE REVIEW**

### ***Background***

A review of extant IB literature reveals that very few studies (see e.g. Chen and Hennart, 2004; Jakobsen and Meyer, 2008; Chari and Chang, 2009; Arslan and Larimo, 2012) have analyzed ownership choice in CBM&As specifically by distinguishing between full acquisitions and partial acquisitions. Hence, this phenomenon is under-researched, compared

to general establishment and ownership decisions which have been widely researched (e.g. Brouthers and Hennart, 2007). CB M&As as an entry strategy can offer investing MNEs instant access to valuable and complementary resources and capabilities residing in the target foreign firms (Hennart, 2009). Thus, these MNEs own, control and leverage the combined asset-base to realize economies of scale and scope, and can enhance their competitive positioning regarding local and international rivals (Chen and Hennart, 2004; Chen, 2008; Hennart, 2009). Hence, CBM&As emerge as a preferred entry strategy by investing MNEs to gain a foothold in the foreign market relatively quickly (Arslan and Larimo, 2012).

These unique features concerning CB M&As specifically have been ignored in most previous market entry studies due to the tendency to analyze together both full and partial CB M&As in the case of general establishment mode (greenfield investment vs. acquisition) and ownership mode (wholly owned vs. partially owned subsidiaries) focused analysis (Chen and Hennart, 2004; Arslan and Larimo, 2012). Therefore, our paper aims to develop new insights by analyzing factors influencing MNEs' choice between full and partial CBM&As.

We address different aspects of uncertainty (Slangen and van Tulder, 2009; Dikova et al., 2010; Slangen, 2011) associated with foreign market entry, especially in the context of CBM&As. Our key theoretical arguments are based on real options theory (Miller and Folta, 2002; Driouchi and Bannett, 2012) and TCE (Anderson and Gatignon, 1986; Hennart, 1991, 2009; Hennart and Park, 1993) in the context of CB M&As. The real options approach to equity commitment in the form of acquisitions complements the leading theories of MNE strategies and provides a framework to explore the effect of uncertainty on expansion choices (Hoskisson et al., 2000; Li and Rugman, 2007; Brouthers et al., 2008; Wooster et al., 2016). The real options approach argues that toehold operations, such as partial acquisitions, permit MNEs to defer large strategic investments (Majd and Pindyck, 1987). In a real options context, higher investment risk increases the value of adopting lower equity investments

while waiting for the resolution of uncertainty (McDonald and Siegel, 1986; Rivoli and Salorio, 1996). This flexibility is echoed in the choice of entry mode which gives managers the capability to respond to uncertainty as it is revealed and is enhanced through experiential learning (Wooster et al., 2016).

Our theoretical contribution comes from being one of the first studies to use real options theory to address the cost of commitment under exogenous uncertainty, as well as TCE logic to address the separation of desired and non-desired assets in the target firm, while analysing equity ownership sought in CB M&As. We extend the work on uncertainty by treating uncertainty as a multifaceted variable (Milikien, 1987; Liu and Almor, 2016) rather than a single factor as assumed in many prior IB studies. We address exogenous uncertainty using the concepts of country risk, level of CB M&A activity and cultural distance. Further, in the empirical analysis, we operationalize uncertainty caused by cultural distance by using the GLOBE dimensions, and test the influence of those dimensions individually rather than using a single aggregate construct, thereby empirically extending Milliken's (1987) work in that context. Consequently, we contribute to the emerging discussion in CB M&A literature, where the target firm's level of maturity manifested by size has been referred to as a key factor for success (e.g. Brueller, Ellis, Segev, and Carmeli, 2015).

M&As by British firms provide an excellent context to examine the factors influencing the ownership choice in CBM&A. British firms continue to play an important role in global M&A deal making. According to the Office for National Statistics (ONS), in 2015 there were a total of 136 acquisitions of foreign companies made by British companies, compared with 113 acquisitions recorded in 2014. The 136 outward acquisitions completed in 2015, were made mainly in Europe (44%) and the Americas (43%) followed by Asia and rest of the world (13%). Thus, British companies typically look to Western Europe and the United States when seeking targets, typifying cultural and language synergies that some firms feel



comfortable with. However, a growing number of cross border M&A deals by British firms is also carried out in emerging markets.

## **RESEARCH HYPOTHESES**

### ***Cost of Commitment under Exogenous Uncertainty and Real Options***

Entry into foreign markets often involves dealing with exogenous uncertainty, the resolution of which is not affected by firms' actions (Cuypers and Martin, 2010). Exogenous uncertainty has been addressed in previous literature as a state in which one cannot determine the probability of an outcome, owing to a lack of information about external factors (Miller and Shamsie 1999). In the context of organizations and their strategies, uncertainty can be referred to as the 'inability to differentiate between relevant and irrelevant data' or 'perceived inability to predict' (Milliken, 1987) due to unpredictability associated with different dimensions of external economic activity which cannot be manipulated by a single firm (Miller and Reuer, 1998; Brouthers and Dikova, 2010).

Exogenous uncertainty has been used as a key explanatory variable in foreign market entry studies using real options theory (see e.g. Delios and Henisz, 2003; Brouthers and Dikova, 2010; Cuypers and Martin, 2010). The real options approach to equity commitment in the form of wholly owned subsidiaries, acquisitions and greenfield operations, complements the leading theories of MNE strategies and provides a natural framework to explore the effect of uncertainty on expansion choices (Hoskisson et al., 2000; Li and Rugman, 2007; Brouthers et al., 2008). Incremental investments allow firms to defer part of the investment but gain experience in the market, gather market-specific knowledge, and possibly establish a brand image which can provide a growth option (Kogut, 1991). Therefore, we observe that in prior literature, joint ventures (JVs) have been referred to as a real option that provides a platform to expand and acquire (or exit) upon the resolution of exogenous uncertainty (e.g. Cuypers and Martin, 2010; Tong, Reuer, and Peng, 2008). In a recent study, Li and Li (2010) noted

that under a high level of exogenous uncertainty, MNEs choose a lower-equity entry mode rather than higher-equity entry mode. Similarly, Cuypers and Martin (2010) found that there is a negative relationship between the equity share of investing foreign firms in JVs and exogenous uncertainty. Hence, foreign firms reduce their equity commitments when they face high exogenous uncertainty.

We argue that partial acquisitions can also serve the same purpose of economizing on the cost of resource commitment while the foreign firm waits to see how the exogenous uncertainty resolves. Moreover, a decision to exit a partial acquisition position, if the uncertainty resolves unfavourably, can be made without the inter-partner negotiations that complicate exit in JVs (Inkpen and Beamish, 1997; Yan and Gray, 1994). Country risk – specifically economic, financial, and political risk – has been referred to as a primary source of exogenous uncertainty in previous studies (e.g. Cuypers and Martin, 2010; Brouthers et al., 2008; Li and Li, 2010). Following Milliken (1987), country risk can be categorized as state uncertainty and leads to managers finding this unpredictability influencing their business strategies significantly. We argue based on real options theory that British firms when facing high country risk will tend to pursue opportunities that have significant upside potential in a manner that would allow them to contain the associated risk (McGrath, Ferrier and Mendelow, 2004). A lower share of equity in foreign target firms would enable British MNEs to align their interests with powerful foreign stakeholders (Meyer, 2002; Jakobsen and Meyer, 2008), as well as offer potential for future growth (in the form of full acquisition), when conditions of risk and uncertainty are contained (Chen and Hennart, 2004; Chen, 2008). Therefore, we hypothesize:

*Hypothesis 1: British MNEs will seek a lower share of equity in foreign target firms when those firms are from countries with higher country risk than when they are from countries with lower country risk.*

The real options literature suggests that the value of making a smaller commitment to secure an option to expand or exit in future is also related to the duration in time for which the firm could wait before deciding to expand or exit (Miller and Folta, 2002). However, there is a threat for such firms that while they are waiting, their competitors can pre-empt and attain strategic advantage in that specific context. MacMillan (1983) was one of the first authors to identify pre-emptive strategies in a business-related context and refers to it as “A major move by a focal business ahead of moves by its adversaries, which allows it to secure an advantageous position from which it is difficult to dislodge because of the advantages it has captured by being the first mover” (p.16). Pre-emption can play a crucial role in choice of equity share of the foreign firm. If the rivals pre-empt market entry of the focal firms, it will lead to reduction in the time window and thereby also reduces the relative value of flexibility offered by lower ownership compared with commitment represented by higher ownership (Miller and Folta, 2002). Conversely, lower risk of pre-emption caused by fewer rivals can allow the investing firm to use the low-commitment alternative of acquiring partial equity stakes in incumbent firms rather than outright acquisitions (Folta, 1998). Matching the country market presence of rivals, particularly in markets considered attractive, is critical to secure relative global competitiveness for MNEs (Hamel and Prahalad, 1985). In a similar vein, Brouters et al. (2008) refer to strategic flexibility of investing firms as a key determinant of equity share in foreign market entry decisions. This strategic flexibility can be strengthened by investing firms’ previous experience in evaluating risks and undertaking similar ventures (Fisch, 2006).

The level of CB M&A activity varies across countries, suggesting relative attractiveness of the market for acquisitions by both local and foreign firms (Jackson and Miyajima, 2007). CB M&A activity has elements of effect and response uncertainty (Mlliken, 1987; Liu and Almor, 2016), as managers are knowledgeable about it, but cannot predict exact influences on their business. Therefore, it tends to lead to pre-emptive behaviour by those managers due to different dynamics associated with either high or low CB M&A activity. Prior literature also suggests that MNEs engaging in CB M&As typically have to collect, analyse, distribute and utilize information about the foreign target firms, as well as the overall CBM&A market (Very and Schweiger 2001). The markets with high CBM&A activity are expected to have more firms that potentially can be acquired by MNEs (Hennart and Park, 1993). This also means that competitors can spot suitable acquisition targets, and identify skilled foreign advisors to assist them in due diligence (Aybar and Ficici 2009). Hence, the risk of pre-emption by competitors can force investing British MNEs to seek more equity in attractive foreign target firms in such economies, so that their competitors can not hinder their strategic plans by bidding for the same firms. Hence, we hypothesize:

*Hypothesis 2: British MNEs will seek a greater share of equity in foreign target firms when those firms are from countries experiencing greater levels of CB M&A activity than when they are from countries experiencing lower levels of CB M&A activity.*

### ***Integrating Target Firm Managers in Culturally Distant Countries***

Cultural distance has a vital and multi-faceted role in cross border mergers and acquisitions (Kogut and Singh, 1988; Reus and Lamont, 2009; Stahl and Voigt, 2008; Dikova et al., 2010; Weber et al., 2011; Ahammad, et al. 2016). By entering a culturally different foreign market,

firms are exposed to diverse social routines and implicit assumptions that may appear unfamiliar and challenging (Chakrabarti et al., 2009; Hofstede, 1980). Cultural distance has elements of effect uncertainty (Mlliken, 1987; Liu and Almor, 2016), as managers are knowledge about some potential influences but not all of them. Earlier literature shows that the presence of high cultural distance may escalate the firm's challenges to effectively manage relationships with stakeholders of the target firm, owing to differences in value systems, beliefs, and attitudes of organizational actors (Contractor et al., 2014). Conversely, low cultural distance may reduce the above challenges considerably. Kogut and Singh (1988) argued that managers in local target firms are expected to be able to better manage relationships with the local stakeholders, and hence MNEs may prefer to entrust local management responsibilities to local managers. Accordingly, an acquirer is expected to require the ongoing presence of managers of the local target firm for an extended period following its acquisition (Chi, 1994). Therefore, the acquiring firm may opt for a partial acquisition in a culturally distant country and may retain the managers of the foreign target firm.

Partial acquisition may bring several benefits to British acquiring firms. First, by choosing a partial acquisition, acquirers may obtain a "hostage effect" that should assist them in both ex-ante due diligence of foreign target firms and ex-post enforcement of contracts (Chen and Hennart, 2004). Target firms that consent to entertain a partial M&A deal signal their self-belief in the prospects of their organisation (Chen and Hennart, 2004), which in turn helps reduce the British acquirer's ex ante costs of screening the foreign target firms. Since managers of the foreign target firm have some form of stake (e.g. profit sharing in the target firm), foreign target firm managers are expected to be more prepared to pass on their tacit knowledge of the firm (Chen and Hennart, 2004) and knowledge of the host country's market to the managers of the acquiring firm (Chari and Chang, 2009; Slangen and van Tulder,

2009). Consequently, the acquiring firm is likely to realize the full potential of the acquisition (Chari and Chang, 2009). Chari and Chang (2009) argued that greater cultural distance related to an inclination for partial acquisitions relative to full acquisitions. This line of argument indicates that, as cultural distance increases, British MNEs will seek a lower share of equity in foreign target firms, and cede a correspondingly greater share of ownership to the foreign target firm to preserve incentives for target firm managers and to obtain their support in transferring tacit assets. Based on the above discussion, we propose the following hypothesis:

*Hypothesis 3: British MNEs will seek a lower share of equity in foreign target firms when those firms are from culturally distant countries than when they are from culturally closer countries.*

### ***Separating Desired Assets and Non-Desired Assets***

One of the main reasons for MNEs to engage in CBM&A activity is to gain access to certain assets that are valuable for MNEs in the market (Jackson and Miyajima, 2007; Hitt and Pisano, 2009). However, the desired assets come with a set of undesired assets, which the acquiring firm will be keen to remove. Separating desired assets from non-desired assets involves restructuring employee contracts and workforce layoffs (Hitt et al., 2001; Estrin et al., 2009). It is important to note that effective recombination of resources and assets can lead to new ownership advantages for MNEs (Collinson and Narula, 2014). However, a key aspect that needs to be considered by acquiring MNEs in this context relates to employees and their integration after restructuring (e.g. Galpin and Herndon, 2014). This aspect can significantly influence the MNE's need to separate desired and non-desired assets. The cost of employment restructuring is closely related to labour and employment laws, which vary

across countries (Jackson and Miyajima, 2007). In an extensive study, Botero et al. (2004) found that employment laws varied across the 85 countries they surveyed in terms of the various attributes that make employment contracts rigid and costly to terminate or restructure, including the existence of alternative employment contracts, the cost of increasing hours worked, the cost of firing workers, and dismissal procedures.

Prior research has also revealed that gains associated with acquisitions are relatively higher in the liberal market economies of the USA and the UK, compared to France and Germany, because of the possibilities of corporate restructuring and the rationalization of costs via reducing employment (Conyon et al., 2001; Jackson, 2005). The above arguments suggest that when the cost of restructuring employment contracts is high, the cost of separating desired assets from the rest of the foreign target firm is likely to be high, lowering potential gains from a full acquisition and rendering partial ownership to support exchange with the target firm correspondingly more attractive. Greater employment contract rigidity is also likely to affect the share of equity acquired by British MNEs. Employment contract rigidity has been shown to lower productivity and negatively influence performance of firms, especially in the long run (Batra et al., 2003; Kruppe et al., 2013). In such a case, British MNEs which are driven by profit seeking motives primarily, are likely to limit their commitment to such foreign target firms by acquiring a smaller share of equity for market entry. Therefore, we hypothesize:

*Hypothesis 4: British MNEs will seek a lower share of equity in foreign target firms when those firms are from countries with greater employment contract rigidity than when they are from countries with less employment contract rigidity.*

### ***Target Firm Size***

The size of the target firm has been an important variable used in many past IB and management studies because it represents availability of resources and assets (e.g. Uhlenbruck et al., 2006; Oh et al., 2014; Erel et al., 2015). According to transaction cost logic, the size of the target firm presents an important dilemma for the investing MNE, as its interests lie in the separation of desired assets from undesired ones, and achieving synergy relatively quickly (Verbeke and Hillemann, 2013; Erel et al., 2015). However, a large size target firm may lead to higher costs of post M&A integration (e.g. Brar et al., 2009; Das and Teng, 2000; Oh et al., 2014). The main sources of these extra costs in the case of large size target firm are: a) the cost of acquiring the target firm in its entirety so that the foreign firm can exercise its hierarchical authority to separate the desired assets from undesired ones (Oh et al., 2014; Feliciano and Lipsey, 2015); b) the cost of restructuring the target firm to separate desired assets from non-desired assets (e.g. Hennart and Reddy, 1997; Maksimovic et al., 2011; Erel et al., 2015); c) the cost of selling the non-desired assets of the target firm – including search and negotiation costs (e.g. Krishnan, et al., 2007; Feliciano and Lipsey, 2015).

Therefore, the cost of separating desired assets from non-desired assets is likely to be greater in larger target firms than in smaller target firms (e.g. Maksimovic et al., 2011; Feliciano and Lipsey, 2015). This is because the costs of acquisition, restructuring, and post-separation sale of non-desired assets are all likely to be greater for larger targets (Verbeke and Hillemann, 2013; Feliciano and Lipsey, 2015). Thus, we argue that British MNEs are more likely to opt out of complete acquisitions in favour of partial stakes to support exchange in larger foreign target firms. Hence, we hypothesize:

*Hypothesis 5: British MNEs will seek a lower share of equity in foreign target firms when those firms are larger in size than when they are smaller in size.*



## **METHODS**

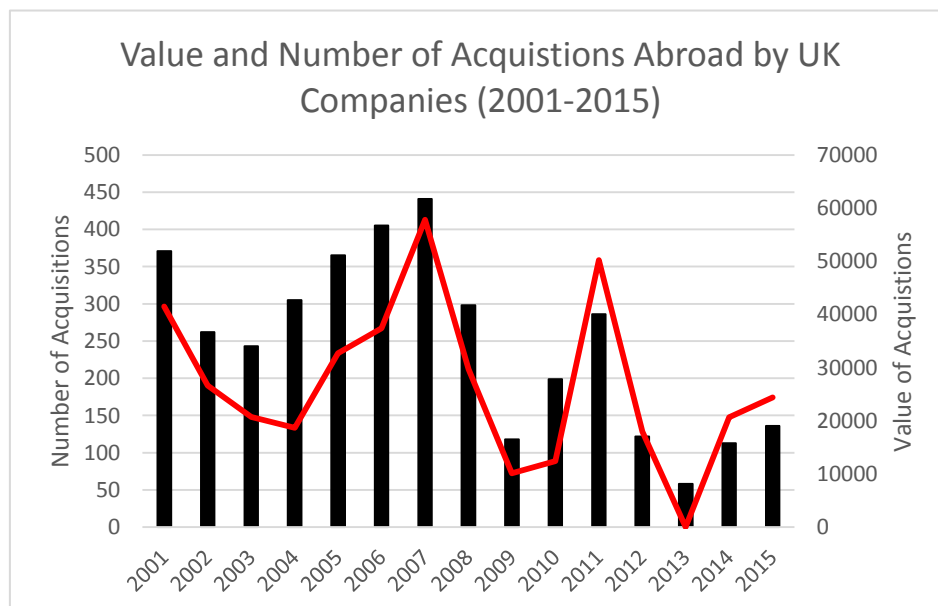
We obtained a sample of cross border acquisitions announced by British firms during the years 2002-2007 from the Thomson One Banker Database. We narrowed the sample for the study by dropping observations where the acquirer had a prior equity interest in the target firm, since these acquisitions are not comparable to fresh acquisitions in terms of the acquirer's familiarity with the target firm. In addition, to control for the possibility that the shares of equity sought were dictated by government policy, we dropped observations where country regulations restricted foreign ownership. Finally, we examined all cross-border acquisition by firms from the financial services sector (Standard Industry Classification - SIC 6 series) and eliminated deals that were made for portfolio investment purposes. The selection process yielded a net sample of 1872 cross border acquisition deals by 1251 British firms.

The use of 2002-2007 sample was chosen to mitigate the impact of economic, financial and political events on the analysis, such as, the global financial crises (GFC), Greek sovereign debt and war in Syria. Cerrato et al. (2015) argue that economic and financial adversity such as the GFC can result in substantial changes in the external environment of companies. The adversities in the financial market may cause a reduction in capital available to firms, creating barriers to obtain sufficient resources for working capital and debt service obligations. We follow the argument of Cerrato et al. (2015) who state that companies when confronted with economic crisis, even when taking risky actions, tend to focus on local markets and reduce or rule out cross border activities to avoid excessive risk taking that may impair the business survival. Thus, firms are unlikely to engage in acquisitions at all.

We present some evidence of this strategic risk avoidance behaviour adopted by firms in Figure 1. On average from 2001 to 2007, 342 cross-border acquisitions were completed by

UK companies, in contrast from 2008 to 2015 the mean number was substantially reduced to 166 or almost 52% less CB M&A activity.

Figure 1: Trends in CB M&A by UK (2001-2015)



Source: Office of National Statistics (ONS)

Table 1 provides a summary of the sample by industry sector. Consumer products and services, financials, high technology, industrials, materials and, media and entertainment were among the most active target industries.

Table 1: Number of CB M&As in the sample by industry

Industry classifications	Number of deals	Percentage
Financials	384	20.50%
High Technology	239	12.76%
Consumer Products and Services	221	11.80%
Materials	201	10.73%
Media and Entertainment	170	9.08%
Industrials	153	8.17%
Energy and Power	125	6.67%
Consumer Staples	106	5.66%
Healthcare	106	5.66%
Real Estate	90	4.81%
Telecommunications	43	2.30%
Retail	35	1.87%
Total	1873	100%

Table 2 provides a summary of the sample by target country. As shown in Table 2, CB M&As in the sample involved several target countries, with the USA accounting for the most (557) acquisitions followed by Australia (165), Germany (154) and France (150).

**Table 2: Number of CB M&As in the sample by target country**

Country	Number of deals	Percentage
USA	557	29.74%
Australia	165	8.81%
Germany	154	8.22%
France	150	8.01%
Canada	87	4.64%
Spain	82	4.38%
Netherlands	67	3.58%
Italy	62	3.31%
Sweden	56	2.99%
BRICS	149	7.96%
Rest of Europe	170	9.08%
Rest of Asia	105	5.61%
Others	69	3.68%

The share of equity sought by the acquirer ranged from 2.2% to 100%, with a mean of 86.2% and a fairly large standard deviation of 28%. In 1439 of the 1873 cases the share of equity sought was 100%, and in 434 cases (about 13.8% of the sample) acquirers sought less than 100% equity. Compared to Chari and Chang (2009) who investigated similar issues for the USA, our study presents a much higher number of cross-border acquisitions and the reverse effect in relation to the preferred market for the British acquirers (USA acquirers in Chari and Chang (2009) predominantly chose the UK) that is the high incidence of complete ownership sought is very much consistent with prior research that has noted US firms' predominant preference for full ownership and maximum control over foreign operations (Erramilli & Rao, 1993).

### **The Model**

To test which factors are relevant in determining the choice of equity share in cross-border acquisitions, the following general model is estimated.

$$\begin{aligned}
 \text{Share of equity sought} = & \alpha + \beta_1 \text{Level of CBA Activity in the Target Country} + \\
 & \beta_2 \text{Cultural Distance Institutional Collectivism} + \\
 & \beta_3 \text{Cultural Distance In - Group Collectivism} + \\
 & \beta_4 \text{Cultural Distance Power Distance} + \\
 & \beta_5 \text{Cultural Distance Uncertainty Avoidance} + \\
 & \beta_6 \text{Country Risk Employment Contract} + \\
 & \beta_7 \text{Market Value of Target Local Firm} + \\
 & \beta_{8-n} (\text{Controls}) + \varepsilon
 \end{aligned} \tag{1}$$

Since our dependent variable, percentage of equity sought, is delimited between values equal to and less than 100%, we coded these values using a binary choice with 0 representing acquisitions of less than 100%, and 1 representing full acquisition or 100%. The implication is that if the dependent variable is set-up as a 0-1 dummy variable and regressed on a set of explanatory variables, we would expect the predicted values of the dependent variable, in our case percentage of equity sought, to fall mainly within the interval between 0 and 1. This suggests that the predicted value of the dependent variable could be interpreted as the probability that an acquirer will proceed with the cross-border acquisition given the values of the explanatory variables for that acquirer. This sort of approach gives its name to a class of limited dependent variable econometric methods defined as Linear Probability Models, often referred as Probit/Logit models and its variations (Kennedy, 2013).

In addition, samples with limited dependent variables can be classified into two general categories, censored and truncated. Censored or truncated variables occur when the range of values observable for the dependent variables is limited for some reason (100% acquisition). For both censored and truncated data (Brooks, 2014), OLS will not be appropriate, and an approach based on maximum likelihood must be used. Therefore, we apply a class of limited

dependent variable models developed by Tobin (1958) that allows the dependent variable to be censored at a certain point or value (100% acquisition).

The cross-section pooled data on acquisitions spans from 2002 to 2007. The 2002 year was omitted as the reference year. In the case of this research the cluster option corrects for the presence of multiple acquisitions from the same firms by computing standard errors that account for clustered data points. The cluster procedure was applied in previous studies by Rogers (1993), Williams (2000), and Chari and Chang (2009).

### **Description of variables**

The share of equity sought by the UK firm in the deal is our dependent variable, and we obtained this information from the Thomson One Banker database. Where other sources of data were used for the measures, these are identified along with the description of the variables below.

#### ***Level of CB M&A activity in the target country***

We measured the level of CB M&A activity in the target country as the percentage of worldwide CB M&As accounted for by CB M&As in the foreign target firm's country in the three years prior to the focal acquisition. We use the three-year average since firms are likely to infer pre-emption risks by observing a trend in acquisitions rather than from observations in a single year. Larger values of the measure indicate greater pre-emption risk in the target firm's country. We obtained data for the measure from the UNCTAD Cross-Border M&A database.

#### ***National cultural distance***

National cultural distance was measured by using the GLOBE practices scores (House et al. 2004). We measured cultural distance as the extent of the difference or distance between the UK and the local firm's country in terms of GLOBE's institutional collectivism, in-group

collectivism, uncertainty avoidance and power distance. Like Kogut and Singh's (1988) approach, the measure of cultural distance using the uncertainty avoidance dimension was calculated as follows.

$$CD(UA) = \frac{(UA_{UK} - UA_j)^2}{V_{ua}} \quad (2)$$

where  $UA_{UK}$  is the uncertainty avoidance index for the UK,  $UA_j$  is the uncertainty avoidance index for local firm country  $j$ , and  $V_{ua}$  is the variance of the uncertainty avoidance index. The measure of cultural distance using the institutional collectivism, in-group collectivism and power distance dimension was also calculated in a similar fashion.

We use these cultural distance measures rather than Kogut and Singh's (1988) index because the "assumption of equivalence" across the four cultural dimensions in the aggregated index has been characterized as highly problematic, and because the uncertainty avoidance dimension has been suggested as potentially the most salient, while the individualism dimension has also been noted as important by some (Barkema et al., 1997; Shenkar, 2001: 525).

### ***Country risk***

We measured country risk using the Kauffman et al. (2009) index of governance. We added the scores of six governance indicators (government effectiveness, political instability, rule of law, graft and corruption, voice and accountability, regulatory burden) with greater numbers indicating less risk. To be consistent with our hypothesis, we reverse-coded the scores where greater scores indicate greater country risk.

### ***Employment contract rigidity***

We used the employment laws index compiled by Botero et al. (2004) as our measure of employment contract rigidity in the local firm's country. The index for the 85 countries surveyed by Botero et al. (2004) ranges in value from a low of 0.15 for Zambia to a high of

0.83 for the Russian Federation, with a mean of 0.49. Higher values on the index represent greater employment contract rigidity.

### ***Local firm size***

We measured local firm size as the logarithm (log) of the inflation-adjusted market value of the local firm. Since market values for the local firms were not available directly, we estimated the market values using the share of equity sought in the acquisition and the acquisition value (price offered for the share of equity). Specifically, we calculate the market value of the local firm as (acquisition value / share of equity sought) x 100.

### ***Control variables***

We controlled for the effects of country GDP growth, since prior work, for example by Barkema and Vermeulen (1998), has shown that foreign firms favour the shared ownership mode of traditional joint venture over outright acquisition in host countries with higher economic growth. We measured GDP growth as the average annual GDP growth in the local firm's country over the 5-year period prior to the acquisition.

We controlled for differences in the Generally Accepted Accounting Principles (GAAP) between the UK and the local firm's country because GAAP differences complicate target firm valuation and may consequently affect the share of ownership sought (Bae, Tan, & Welker, 2008). We used Bae et al.'s (2008) measure of GAAP differences, which is based on a survey of national accounting rules benchmarked against international accounting standards. Finally, since we pool data over a 6-year period, we controlled for the time period with a dummy variable for each year, omitting 2002 as the reference year.

## RESULTS

Table 3 and Table 4 report the descriptive statistics and correlations between variables respectively.

**Table 3: Descriptive statistics**

Variables	Mean	Std. Deviation
% of equity sought	0.862	0.282
Country risk	7.197	3.430
Institutional collectivism Difference	0.125	0.200
In-group collectivism Difference	0.539	0.924
Uncertainty avoidance difference	0.142	0.231
Power distance	0.128	0.258
Employment Contract rigidity of target firm	0.442	0.222
GAAP Differences between target and UK firm	6.545	4.418
Market value of (target) local firm	312.464	2644.441
Target country GDP growth	3.280	1.770
Level of CB M&A activity in the target country (%)	9.252	10.181

**Table 4: Correlations**

	1	2	3	4	5	6	7	8	9	10	11
1. % of equity sought	1										
2. Country risk	-0.01	1									
3. Institutional collectivism Difference	0.01	-0.002	1								
4. In-group collectivism Difference	0.03	-0.74**	0.11	1							
5. Uncertainty avoidance difference	0.00	-0.050	0.36**	0.09	1						
6. Power distance	-0.00	0.216**	-0.02	-0.06	0.33**	1					
7. Employment Contract rigidity of target firm	0.01	-0.083	0.37**	0.19	0.61**	0.18	1				
8. GAAP Differences between target and UK firm	0.01	-0.213**	0.39**	0.30**	0.47**	-0.011	0.77**	1			
9. Market value of (target) local firm	0.00	0.011	-0.00	-0.00	0.026	0.06	0.023	-0.00	1		
10. Target country GDP growth	0.02	-0.344**	-0.08	0.53**	-0.23**	-0.11	-0.22**	-0.26**	-0.02	1	
11. Level of CB M&A activity in the target country (%)	-0.03	0.184	-0.32**	-0.44**	-0.26**	-0.15	-0.48**	-0.40**	-0.01	-0.11	1

Note: N = 1873; \*\*p < 0.01, \*p < 0.05; Two-tailed test



Table 5 shows the results of the Tobit regression analyses. Model 1 includes only the control variables. The model has a significant F value and a log likelihood value of -1376.47. Model 2 includes only the predictor variables. The model has a significant F statistic, with a log likelihood value of -1371.02. Model 3 includes the control variables and predictor variables. The model has a significant F statistic, with a log likelihood of -1366.22.

**Table 5: Tobit Regression Analyses**

**Dependent variable: Percentage of Equity Sought**

	Model 1	Model 2	Model 3
<i><b>Explanatory Variables</b></i>	Coefficient	Coefficient	Coefficient
Constant	1.989***	2.007***	2.068***
Country Risk		0.009	0.0135
Level of CBA Activity		-0.005	-0.005
Cultural Distance – Institutional Collectivism		-0.619**	-0.0613**
Cultural Distance - In-Group Collectivism		0.0009	0.033
Cultural Distance - Power Distance		-0.028++	-0.032*
Cultural Distance - Uncertainty Avoidance		-0.038	-0.0437
Employment Contract Rigidity of Target Firm		0.144	0.242
Market Value of Target Local Firm		-0.00014***	-0.000014***
<i><b>Control variables</b></i>			
GAAP differences between Target and UK Firm	-0.0081		-0.0132
Target country GDP growth	-0.0152		-0.0518*
2003	-0.0695		-0.055
2004	0.0576		0.089
2005	-0.0626		-0.047
2006	0.2106		0.229
2007	0.1335		0.154
Log Likelihood	-1376.47	-1371.02	-1366.22
F-Statistic Prob	0.4124***	0.006***	0.008***
Pseudo R-Square	0.0026	0.0046	0.0055

Note: N=1872, being 1438 right censored or full acquisition;

F-statistic prob greater than 0.10 implies not a good specified model.

Standard errors are robust standard errors after adjusting for clustering by acquirer;

\*\*\*=1% significance level; \*\*=5% significance level; \*=10% significance level; ++ marginal rejection at 10% significance level.

We calculated the variance inflation factors (VIFs) for each predictor (in model 3), with the largest VIF of 4.23, which is much lower than the threshold value of 10 that indicates multicollinearity problems (Hair, Anderson, Tatham, & Black, 1998). Overall, the data fit the model well, and the theoretical variables contribute significantly in explaining variation in the share of equity sought.

As shown in Table 5, the coefficient for country risk is not significant, failing to support Hypothesis 1. Also, the coefficient for the variable level of CB M&A activity in the target firm's country is not significant, failing to support Hypothesis 2.

The coefficients for cultural distance measured using in-group-collectivism and uncertainty avoidance, are not significant. The coefficients for cultural distance, measured using institutional collectivism and power distance, are significant and negative ( $p < 0.05$  and  $p < 0.10$ , respectively). Therefore, there is a reasonable support for hypothesis 3.

The coefficient for employment contract rigidity is not significant, therefore, Hypothesis 4 is not supported. Local firm size is significant and negative ( $p < 0.01$ ), supporting Hypothesis 5. The finding tends to suggest that UK firms will seek a lower share of equity in local firms when these firms are larger in size than when they are smaller in size.

With respect to control variables, the coefficient for GAAP differences is not significant. However, the coefficient for GDP differences is significant ( $p < 0.10$ ) and negative, indicating that firms seek a higher share of equity in host countries with lower economic growth. This finding is in line with previous IB studies using TCE logic, where high economic growth in host economies increased their market attractiveness (Meyer and Peng, 2005; Larimo and Arslan, 2013). None of the year dummy variables are significant.

## **DISCUSSION**

Although prior research has examined the factors influencing the equity sought in CBM&A by US firms (e.g. Chari and Chang, 2009), further research is required examining the factors influencing ownership choice in a non-US context, because prior work has found that ownership preferences vary between US firms and those from other countries (Erramilli, 1996). Our paper contributes by examining the factors influencing the ownership choice between full and partial acquisition in the context of CBM&As by British firms.

There are differences between British MNEs and US MNEs in terms of pre-and post-M&A management practices. Firstly, according to Calori et al. (1994, p. 373), North American cultures differ from British culture in terms of the level of personal efforts of the managers at the acquiring firm to ensure that the merger is successful. American managers become more personally involved than the British. It seems that this 'hands off' attitude from the managers of the acquiring firm is typically British. Taken together, these results show that British and American buyers do differ in some of the control mechanisms they exercise over acquired firms, some of these practices being in line with their respective administrative and national heritage. Moreover, Angwin and Savill (1997, p.430) reported that the UK was statistically significant in rating the importance of strong management as the single most important factor. This finding accords with the study by Calori et al. (1994), who compared the cross-border acquisition management styles of French, American and UK executives, and found UK management to be very 'hands-off'. In contrast, US management style is more "hands-on".

Secondly, the study by Duncan and Mtar (2006) explicitly highlighted the cultural differences between the UK and US in the context of a cross border acquisition by a British firm. Duncan and Mtar (2006, p.404) interviewed several directors who commented that there was a general misconception that the UK and US have similar cultures and values. One of the biggest disparities expressed between the UK and US, was the presence of the 'good news'

phenomenon, particularly in the US. A Chief Operating Officer explained that US employees were more than eager to broadcast good news, but tended to hold back bad news. Another difference highlighted by a former Business Change Director, was that the US employees had a very 'sales and customer orientated approach', whereas the British employees were much more 'bottom line' driven.

We find that British MNEs are more likely to pursue a partial acquisition in a target foreign firm when those foreign firms are from culturally distant countries. The findings of our study support the argument that challenges with integrating local firm managers in culturally distant countries motivate firms to acquire partial equity interest in the target firm instead of acquiring the target firm completely (Chi, 1994). Specifically, we find that the institutional collectivism and power distance dimensions of national culture have significant impact on the ownership choice between full and partial acquisition in the context of British CBM&As. Prior literature argues that uncertainty avoidance is a more powerful determinant than other dimensions of culture in explaining the ownership choice between partial and full acquisition (Chari and Chang, 2009; Contractor et al., 2014). However, we find that uncertainty avoidance has no significant impact on the share of equity sought which is inconsistent with the findings of Chari and Chang (2009) and Contractor et al. (2014). Our finding tends to suggest that a British MNE is more likely to choose a partial acquisition in the foreign target firm in the face of high institutional collectivism distance since a firm in a high institutional collectivism culture may be reluctant to share resources with the British MNE. This boundary could then become a barrier to the knowledge transfer process. By offering a greater ownership to the foreign target firm, the British MNE could obtain the target firm's managers' support in transferring tacit knowledge. Moreover, the British MNE will seek a lower share of equity in the foreign target firm in the face of high power distance since higher power distance results in a lack of communication and dissimilar decision making practices

between acquiring and target firm. A partial acquisition allows the British MNE to share power and authority with the target foreign firm, and creates opportunities to engage in early and high level communication with the target firm which, in turn, can assist in establishing relationships with employees of the target firm. Thus, partial acquisition facilitates the transfer of tacit knowledge from the target foreign firm.

Results for the relationship between local firm size and the share of ownership support the view that the high cost of separating desired assets from non-desired assets motivates firms to use a share of equity to support exchange rather than acquire the target completely (Das and Teng, 2000; Inkpen, 2001). This is due to the greater costs of separating non-desired assets for larger target firms. Likewise, the greater cost of restructuring for large target firms arises from the greater numbers of employees and activities to be restructured (Oh et al., 2014; Kavadis and Castañer, 2015). Therefore, British firms are more likely to opt out of complete acquisitions in favour of partial stakes to support exchange in larger target firms.

Contrary to our expectation, we find that employment contract rigidity does not affect the share of ownership sought. One explanation for this finding is that British firms may not perform sufficient due diligence to take post-acquisition restructuring costs into account. If so, British firms may complete the acquisition but encounter difficulties in the post-acquisition phase, resulting in below-expected performance or failures. This explanation is consistent with reports of post-acquisition performance difficulties observed in CB M&As (Aw and Chatterjee, 2004; Datta and Puia, 1995).

## **CONTRIBUTIONS, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

Our study makes various contributions at both theoretical and empirical levels. First, we contribute to the small but growing literature on the level of equity sought or ownership decisions in CB M&As. There is limited understanding of why and how acquiring firms

decide between levels of ownership in CBM&As (Contractor et al., 2014). So, we make a significant addition to the entry mode literature, since the determinants of ownership choice between partial and full acquisition in CB M&As have received limited attention in prior research.

Second, we extend the studies by Jakobsen and Meyer (2008) and Arslan and Larimo (2012) by approaching aspects of equity share in CBM&As from the novel perspective of real options theory (Brouthers and Dikova, 2010) and TCE (Anderson and Gatignon, 1986). We use both theoretical perspectives to address different aspects of uncertainties associated with foreign market entry in relation to ownership choice between partial and full acquisitions in CBM&As.

Third, the findings of our paper reinforce previous management scholarship that has used specific cultural dimensions (Morosini et al., 1998) as opposed to an aggregate, multi-factor measure of cultural distance (Aybar & Ficici, 2009; Chakrabarti et al., 2009). Our paper contributes by examining the impact of specific cultural dimensions, such as, uncertainty avoidance, power distance, institutional collectivism and in-group collectivism on ownership choice in CBM&A.

Fourth, prior work has found that ownership preferences vary between US firms and those from other countries (Erramilli, 1996). Therefore, further research is required examining the factors influencing ownership choice from a non-US context. Unlike Chari and Chang (2009) which focused on CBM&As by US MNEs, our paper focuses on British MNEs' choice between full and partial acquisitions.

Fifth, prior literature argues that uncertainty avoidance is a more powerful determinant than other dimensions of culture in explaining the ownership choice between partial and full acquisition (Chari and Chang, 2009; Contractor et al., 2014). In contrast, we found that

institutional collectivism and power distance have a significant impact on the ownership choice between full and partial acquisition in the context of UK CBM&As.

Sixth, our study is based on CB M&As undertaken by British MNEs globally, including both developed and emerging economies. Hence, our study sample is more heterogeneous, and our findings are more generalizable.

The findings of our study have implications for managers of British MNEs aspiring to internationalize via CB M&As. The prior literature established theoretically that it is important to consider country risk, the level of CBM&A activity in the host economy, cultural distance, employment rigidity and the market value of the local firm when analyzing the level of equity sought in the foreign acquisition. We suggest that managers give more importance to institutional collectivism and power distance dimensions of cultural distance as well as the market value of the local firm when deciding on the equity share in the acquisition. However, as our sample included both developed and emerging host economies, it is important for managers to recognise that different factors may have a different level of importance for CB M&As in particular contexts. It is also vital to note that our study reinforced the importance of considering uncertainty as a multifaceted variable, rather than a single construct. Even though the conceptualization of uncertainty may change, managers involved in CB M&As need to examine uncertainty from the perspectives of state, effect and response uncertainties, to devise an efficient strategy in a host country.

As with all studies, this paper has certain limitations which may be addressed in future research. We analyze CB M&As undertaken by British MNEs globally at a general level. Future studies could offer more fine-grained analysis by dividing the sample based on the level of economic development in host economies. This would offer more clearly insights to the uncertainty related determinants in both developed and emerging contexts.

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