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Agyei-Boapeah, Henry [orcid.org/0000-0003-4798-6324](https://orcid.org/0000-0003-4798-6324), Fosu, Samuel and Ntim, Collins (2020) Corporate multinationality and acquirer returns. *Abacus*. pp. 230-267. ISSN 1467-6281

<https://doi.org/10.1111/abac.12146>

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# Corporate Multinationality and Acquirer Returns

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# Corporate Multinationality and Acquirer Returns

**Abstract:** This paper provides evidence on how corporate multinationality from the perspective of acquiring firms relates to M&A returns. Using multivariate regressions and a large dataset of over 6,000 M&As (both cross-border and domestic) by UK firms during 1987 to 2014, the paper finds multinationality to be associated with significantly higher short-run announcement returns and long-run operating performance. While the multinationality premium (higher M&A returns for multinationals) persists over time, it seems to be restricted to firms with superior resource/managerial capabilities and minimal agency problems. Finally, the multinationality premium appears to be driven by foreign acquisitions into advanced economies. The results are robust to correcting for sample selection bias and controlling for several firm and deal characteristics, as well as accounting for firm-, industry-, and year-fixed effects. Collectively, the findings imply that multinationality could be a source of value creation for acquiring firms, particularly in foreign acquisitions, which tend to be complex, and thereby, require superior managerial capabilities to succeed.

**Keywords:** Corporate multinationality; Geographic diversification; Multinational corporations; Firm capabilities; M&As; UK

**JEL classification :** G14, G15, G34

## 1. INTRODUCTION

Many of the world's largest and most successful firms are multinationals, with corporate expansions into foreign markets continuing to experience significant increases over time. For instance, the United Nations Conference on Trade and Development (UNCTD) reports that the 100 largest corporations worldwide in 2013 had 65% of their sales and 59% of their assets in foreign markets. Moreover, global foreign direct investments (FDI) rose by 9% to \$1.45 trillion in 2013, and this surge in FDI was expected to continue to about \$1.8 trillion in 2016.<sup>1</sup> This growth in FDI, often via foreign mergers and acquisitions (UNCTD, 2014), has at least two important implications: (i) many existing multinational corporations (MNCs) are expanding their foreign operations; and/or (ii) some domestic corporations (DCs) are growing into becoming multinationals. These developments, perhaps, underscore the continuing relevance of questioning the value implications of a firm's multinationality. That is, does a firm's degree of foreign involvement create higher value for shareholders?

With corporate investments, particularly mergers and acquisitions (M&As), being a major source of value creation (or destruction) for shareholders (see Bick *et al.*, 2017; Humphery-Jenner and Powell, 2011; Goergen and Renneboog, 2004), the current study seeks to contribute to the body of research that links corporate multinationality and firm value by examining the impact of multinationality on M&A returns. Specifically, we relate both short-run and long-run M&A returns to the extent of foreign business activity of the acquiring firms. We refer to any observed association between M&A performance and the degree of foreign involvement as the multinationality effect (premium or discount). The UK offers an interesting setting for the study not just because it has a reasonable number of multinational corporations (MNCs) to permit a robust statistical analysis, but also because it has a vibrant market for corporate control, which allows most firms to expand via M&As. Conyon *et al.* (2018), for instance, report that the UK holds a top position in Europe for both outward and inward M&As, and is second only to the US worldwide.

Theoretically, corporate multinationality can have positive as well as negative effects on the performance of M&As. While the acquisitions by both MNCs and non-MNCs are subject to many of the same influences and motivations, theory suggests that acquisitions by MNCs may present opportunities (costs) for value creation (destruction) that are different from those faced by non-MNCs.

For example, international business theory (specifically, internalization of market imperfections) suggests that MNCs can create synergies and competitive advantage from their special (intangible/proprietary) assets and organisational competencies arising from their differentiated products, superior innovations and managerial and/or marketing abilities (Park *et al.*, 2013; Kogut and Chang, 1991). With such superior competencies and proprietary assets, MNCs can exploit differences in product and factor markets, international taxation, and financial markets to extract higher rent from their investments.

Within the context of M&As, MNCs which are characterised by boards of directors with valuable foreign network and experience (Conyon *et al.*, 2018) may be expected to use their expertise/competencies to select targets/deals that are more value-enhancing. This could be particularly so in cross-border M&A deals, where the directors' foreign network and knowledge in foreign business operations could enhance the choice of suitable targets in foreign nations. Similarly, since MNCs tend to be larger organisations, they are more likely to be frequent (multiple) acquirers, and thus, possess greater acquisition experience and ability to negotiate value-enhancing deals. Aktas, de Bodt and Roll (2011) note that managers learn during the process of making multiple acquisitions, which can help them to better negotiate new deals, as well as competently integrate and manage merged firms. To the extent that MNCs are multiple acquirers with superior acquisition experience, they can achieve a premium in their acquisition activities (both domestic and foreign acquisitions).

Alternatively, agency theory suggests a multinationality discount – the difficulty in monitoring managers internationally and the weak governance structures in many host countries (especially in less developed economies) may facilitate value-destroying investments by MNCs (Yang *et al.*, 2017; Doukas and Pantzalis, 2003). This suggests that MNCs face additional costs due to higher agency and information costs in locations that are culturally and geographically distant, as well as an increased difficulty in the management and coordination of operations across disparate national borders (Bick *et al.*, 2017; Hennart, 1991). Given the potential impact that M&As can have on the size and complexity of a firm, acquisitions by MNCs (which are often large entities) may be viewed by investors as non-value-enhancing transactions that only add to the existing complex organisational structures of MNCs,

and perhaps only benefit corporate executives. Thus, M&As by MNCs could lead to a multinationality discount.

Ultimately, the existence of a multinationality effect (premium or discount) in M&As remains an open empirical issue to be resolved by empirical research, and in this paper, we aim to provide important evidence in that regard. Moreover, our study contributes to the large literature on the value consequences of global diversification, the results for which are largely mixed. For example, Denis *et al.* (2002) find a negative impact of global diversification on firm value, whilst Dastidar (2009) and Ahmed and Elshandidy (2018) report a positive impact of global diversification on firm value. Focusing on the value implications through leverage, Park *et al.* (2013) find no significant impact of global diversification on firm value. The focus of analysis in most past studies has typically been on whether multinationality (or global diversification) increases or reduces overall firm value. While information on the impact of corporate multinationality on overall firm value is important, it is equally useful to obtain insights into the specific strategic decisions and actions that may contribute to the multinationality premium (or discount). In this regard, we rely on the unique environment provided by M&As to examine how MNCs' expansions via M&As (both domestic and cross-border) may contribute to the overall multinationality premium (or discount) documented in prior studies.

While we may not be the first to investigate the value of global diversification in the M&A context, our study makes important extensions by focusing on the level of multinationality of the acquiring firm prior to initiating the M&A transaction. Thus, we do not merely consider whether the focal acquisition increases the firm's global scope, (i.e., the value implications of cross-border vs. domestic M&As), as in studies such as Gregory and O'Donohoe (2014) and Conn *et al.* (2005). Such analysis implicitly presume that investors may, for example, value cross-border M&As by an established MNC similarly as they would value cross-border acquisitions by a non-MNC. It is plausible to expect valuation differentials in those acquisitions, given the inherent differences in the nature (or perhaps ability) of the acquirers. Accordingly, our approach emphasises the nature (multinationality) of the firm prior to the merger, which then allows us to further examine which acquisition strategy (i.e., cross-border vs. domestic) delivers greater value for MNCs.

It is also suggested that corporate multinationality is valuable so long as there are segmented markets with entry barriers, and/or a difficulty in accessing and interpreting information across national borders (Aybar and Ficici, 2009; Doukas and Travlos, 1988). Therefore, given the reductions in trade and financial market imperfections (Banerji *et al.*, 2018), and the increased amount of common knowledge available to all firms (through improved ICT environment) over time, we additionally examine the relations between multinationality and acquisition returns over time. The increased liberalisation and integration of markets across the globe has potentially reduced the competitive advantages enjoyed by MNCs from their proprietary assets. Similarly, the digital information age, witnessed in the late 1990s, has increased information retrieval and sharing over the internet, benefiting investors in the form of reduced information asymmetry and its associated agency (monitoring) costs (Bick *et al.*, 2017). We, therefore, expect the multinationality premium (or discount) to change over time.

Our results, based on a dataset of over 6,000 M&As by UK (domestic and multinational) firms and multivariate regressions suggest the existence of an average multinationality premium of between 1.3% to 2.7% in announcement period cumulative abnormal returns (*CARs*), depending on the event window and the multinationality measure utilised in the analysis. That is, the M&As announced by firms with greater involvement in foreign business earn significantly higher *CARs*, after controlling for firm-, industry, and year-fixed effects, as well as the known firm- and deal-factors that influence acquisition returns. Additionally, results based on long-run operating performance point to a multinationality premium. These results largely support the view that global diversification is, on average, value-enhancing. Moreover, we find that despite there being less trade barriers and increased global financial markets integration in recent years, the value of corporate multinationality persists over time, with later years (2000-2014) earning as much premium as the earlier sample period (1987-1999). Finally, we provide evidence to suggest that the multinationality premium in M&A returns is restricted to foreign acquisitions into advanced countries by firms with superior resource/managerial capabilities and lower agency costs.

The rest of the paper is organised as follows: the next section explores the potential reasons why M&A returns may systematically vary with the degree of corporate multinationality. It also briefly

reviews the M&A literature, focussing on the key determinants of acquirer returns. Section 3 describes the data, sample characteristics and methodology. Section 4 presents and discusses the empirical results, Section 5 conducts robustness analysis, and the final section concludes the paper.

## 2. RELATED LITERATURE

### (i) *Why would a multinationality effect (premium or discount) exist in M&As?*

Both the resource-based theory of strategic management and the internalisation theory of international business imply that there could be a multinationality premium in M&A returns. From a resource-based perspective, Teece *et al.* (1997) and Barney (1991) contend that when firms are heterogeneous with respect to their resources/capabilities/endowments, a firm's internal competencies and capabilities relating to technological assets, organisational processes/systems, and managerial skills/abilities, become fundamental drivers of wealth creation for the firm. Similarly, Park *et al.* (2013) and Prahalad and Hamel (1990) highlight firm resource heterogeneity and immobility as a possible source of competitive advantage for firms. They argue that if differences exist in the strategic resources that firms control, and these resources are not perfectly mobile across firms, those firms endowed with valuable resources/capabilities/competencies are able to implement value-creating strategies that cannot be easily implemented by any of their current or potential competitors who do not possess such capabilities.

In fact, existing research in international business and organisational learning directly suggest a differential in the organisational resources and capabilities of MNCs and DCs. The internalization theory, for example, posits that MNCs possess certain valuable intangible assets (e.g., technological know-how effective, experienced and dedicated management) which can be exploited to increase their value (Buckley *et al.*, 2014; Morck and Yeung, 1992). For most MNCs, a potential source of their capabilities is the better business knowledge and experience fostered by learning from the diversity in foreign market environments in which they operate (Iliev and Roth, 2018; Aktas *et al.*, 2011). Overall, combining the resource-based theory with the internalization theory suggests that MNCs should, on average, enjoy competitive advantage from their special (intangible) resources and competencies, and can leverage this advantage to earn a premium in their M&A activities.



While the opportunities and challenges associated with M&As may be similar for MNCs and non-MNCs, it is likely that the differences in their resource endowments and organisational capabilities can lead to performance variations. A more specific and plausible reason as to why firms with higher foreign exposure may be associated with a higher acquisition return is their ability to employ and retain quality management teams. Due to the size/resource advantage of MNCs, they can attract top managers from across the globe, who are experienced in negotiating and successfully completing acquisitions (Miletkov *et al.*, 2017; Masulis and Mobbs, 2014). Conyon *et al.* (2018) and Iliev and Roth (2018) suggest that managerial foreign experience, emanating from specialised foreign expertise and foreign networks, are more valuable to firms than general managerial skills which may be common to all firms. Similarly, Miletkov *et al.* (2017) show that non-US firms that add foreign directors to their boards benefit if the directors come from countries with higher governance standards (i.e., the firm “imports” better governance). The authors further report that firms with foreign directors can obtain more positive wealth effects at acquisition announcements. Furthermore, Estélyi and Nisar (2016) report a significantly positive association between boards containing foreign nationals and firms’ international market operations and their operating performance. Therefore, to the extent that managerial acquisition experience and foreign expertise are higher in MNCs, a multinationality premium in M&A returns may arise, at least in cross-border acquisitions where such expertise are paramount. For instance, the foreign directors in MNCs can rely on their foreign network to identify suitable overseas’ targets and negotiate value-enhancing cross-border deals.

Beyond superior managerial foreign experience and network, MNCs may, in general, possess more acquisition experience than their non-MNC counterparts since larger firms tend to be multiple acquirers (Aktas *et al.*, 2011). Given that managers experientially learn from their previous acquisition deals, and thus make better subsequent acquisitions (Aktas *et al.*, 2011), we expect MNCs, particularly when they are frequent acquirers, to experience higher acquisition returns.

Collectively, the positive direct effect on M&A performance of MNCs occurs when the associated valuable resources/competencies (e.g., managerial know-how and network, as well as acquisition experience) make it possible to select suitable targets, manage new deals, and avoid pre- and post-

acquisition mistakes and challenges. These factors are expected to lead to increased probability of M&A success for MNCs, and thereby result in a multinationality premium in M&A returns.<sup>1</sup>

So far, our discussions predict the existence of a multinationality premium in the performance of M&As. However, diversification (in general) is not a guaranteed route to success. Both industrial and geographic diversifications come at a cost. If the cost of geographic diversification is too large to offset the benefits discussed above, then we will expect a multinationality discount or at best an insignificant multinationality effect. A major diversification cost is suggested by the agency theory which posits that managers may expand across borders for personal gains. That is, managers may follow a strategy of “empire-building” to increase their compensation, entrenchment, power and prestige associated with managing a larger firm (Jensen, 1986; Harford *et al.*, 2012). Such self-interested management actions thrive when it is difficult to monitor the managers. And since higher opacity associated with globally diversified firm makes it is more difficult to monitor them (Aabo *et al.*, 2015), managers of MNCs are more likely to be self-interested and engage in M&A transactions that benefit them at the expense of shareholders.

To prevent self-interested managers from making expropriations, investors of MNCs need to incur bonding and monitoring costs (agency/governance costs), such as auditing fees (Jensen and Meckling, 1979) if they are to avoid value-decreasing acquisitions. Overall, the higher agency costs associated with MNCs could offset at least part of the multinationality advantages, and where these costs are substantial, they can even lead to a multinationality discount in M&A returns.

Taken together, in theory, there are important reasons to expect a multinationality premium or discount in M&A returns depending on the strength of the benefits and costs associated with a firm’s multinationality. Of course, a third possibility exists where the multinationality costs completely neutralise the benefits, resulting in a statistically insignificant relation between multinationality and acquisition performance. In the end, whether a multinationality effect exists in practice remains an unanswered empirical issue, to which this paper attempts to address.

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<sup>1</sup>Pre-acquisition challenges and mistakes include the over-valuation of the target company and the difficulty to assess the value of the resources possessed by the target company. Post-acquisition challenges include the strategic integration of the two companies – a process that may lead to conflicts and slow down the performance of acquiring firms.

**(ii) M&A returns to acquirers**

The empirical evidence on the performance effect of M&As is extensive and mixed. In general, the literature concludes that M&As increase the value of target firms, while the outcome is less clear for acquiring firms (see Andrade *et al.*, 2001). Most studies find that acquisitions reduce firm value for acquirers or do not exert any significant impact at all (Bick *et al.*, 2017; Moeller *et al.*, 2004; Andrade *et al.*, 2001). However, some other studies find that acquisitions can create value for acquirers (Yang *et al.*, 2017; Humphery-Jenner and Powell, 2011; Martynova and Renneboog, 2008). Value creation in M&As for acquirers is generally attributed to the features of the deal, as well as the characteristics of the involved firms. This literature on the determinants of acquirer M&A returns is generally well-known and we do not repeat it here, except to note the commonly cited factors prior to focusing on the limited literature on the acquisition returns for MNCs that has particular implications for the current article.

On the deal characteristics, there is evidence for positive impact on acquirer performance for industry relatedness, hostility, cash payment, private targets, and deal size (see e.g., Yang *et al.*, 2017; Harford *et al.*, 2012; Conn *et al.*, 2005; Moeller *et al.*, 2004) while negative effect of some of these deal characteristics are also reported in other studies such as Aybar and Ficici (2009) and Humphery-Jenner and Powell (2011). Another strand of the M&A literature has highlighted the impact of the target nation on acquirer returns. Conn *et al.* (2005) directly compare cross-border with domestic acquisitions, and find that in cross-border acquisitions returns are significantly lower. Contrary evidence is, however, reported by Feito-Ruiz and Menendez-Requejo (2011) based on 469 European mergers completed during 2002-2006. They find shareholders of acquiring firms to gain more in cross-border acquisitions (which often increase the firms' level of multinationality) than on domestic ones. They further show that the stronger the legal and institutional environment of the acquirer's country in comparison with that of the target firm's country, the more positive the effect on acquirers' gains. Martynova and Renneboog (2008) analyse European mergers during 1993-2001 and find that acquiring firms obtain more positive abnormal returns in cross-border deals. So far, findings from studies on the cross-border M&A effect on acquirers' wealth seem mixed, necessitating further research into the relations between geographic diversification and M&A returns from different perspectives.

When it comes to the impact of the acquirers' characteristics on their M&A returns, varying features ranging from acquirer's size, cash flows, Tobin's q, leverage, management quality, and experience have been considered in several prior research (see e.g., Yang *et al.*, 2017; Golubov *et al.*, 2015; Moeller *et al.*, 2004). Yang *et al.* (2017) find acquirer returns to increase with cash flow, leverage, and Tobin's q. In line with managerial opportunism, hubris, and agency arguments, there is ample evidence that acquirers' returns are negatively impacted by firm size, free cash flow, and Tobin's q (Golubov *et al.*, 2015; Moeller *et al.*, 2004). Further, it has been shown that business and M&A experience can improve M&A performance via learning from a firm's own past experiences and/or learning from peers (Aktas *et al.*, 2011; Barkema and Vermeulen, 1998).

Golubov, Yawson, and Zhang (2015) contribute to the literature on the sources of acquirer returns by noting that most of the suggested explanations based on deal and firm features are relatively unsuccessful at explaining significant amounts of total acquirer returns, with regressions having R<sup>2</sup>s in the range of 5% to 6%. Rather, they find firm-fixed effects to explain significant proportions of the variations in acquirer returns. Golubov *et al.* (2015) conclude that firms have attributes that either allow them to benefit from synergies with their targets or they have special skills at valuing potential targets. The current paper relates to, as well as extends the work of Golubov *et al.* (2015) by examining whether the specific attributes of MNCs (e.g., managerial quality) make them better acquirers who consistently earn higher acquisition returns.

Few M&A empirical studies have investigated the announcement period returns for multinational acquirers. Aybar and Ficici (2009) examine the value implications of 433 cross-border M&As of emerging-market MNCs during 1991-2004. They report that, on average, cross-border expansions of emerging-market MNCs through acquisitions do not create value but point to value destructions for more than half of the transactions analysed. Using 301 cross-border M&As by US firms over the period 1975-1983, Doukas and Travlos (1988) find MNCs not initially operating in the target's country to experience significant positive share price movements upon the announcement of the acquisition. They, however, show that the announcement return is insignificantly positive if the acquirer is expanding internationally for the first time. Their results, though dated, suggest that multinationality

may be valuable when firms possess general international business experience, but are new to a particular foreign market.

A common feature of these related studies is their exclusion of domestic acquisitions from their analysis, and thus, presuming that the special resources and capabilities of MNCs have no implications on their domestic expansions. Moreover, these studies made little or no attempt to isolate the effect of the geographic scope (MNC vs. DC) of the acquiring firm on the outcome of the M&A. We fill these gaps by directly relating both short-run and long-run acquisition returns to acquirers' pre-acquisition level of multinationality. Our relatively large sample of over 6,000 acquisition deals (domestic and cross-border) over the 1987-2014 period permits us not just to establish the presence or otherwise of a multinationality effect in M&A returns, but to ascertain how the multinationality effect (if any) has changed over time and under what conditions the multinationality effect thrives. Finally, we adopt econometric procedures (Heckman selection model) that are robust to sample selection bias since firms select themselves into the MNCs and DC sub-samples.

### **3. METHODOLOGY AND DATA**

#### **(i) Methodology**

A primary objective of this paper is to investigate the relationship between a firm's multinationality and its acquisition returns. Thus, our empirical approach is to regress various measures of acquisition returns on proxies of corporate multinationality and a set of control variables. In an alternative approach, we directly compare the returns from MNCs' expansion via M&As with those of non-MNCs. However, the underlying characteristics that drive the firm's decision to diversify internationally may also impact its investment returns and firm value (Dastidar, 2009). So, if firms choose to diversify internationally, a proper evaluation of the multinationality premium (discount) would be incomplete without considering the underlying characteristics that influence the decision to either become multinational or remain domestic. Failure to control for the underlying characteristics driving this decision will wrongly attribute the impact on the M&A performance to multinationality rather than the underlying characteristics. Therefore, we explicitly control for self-selection using the Heckman selection model (see Choi *et al.*, 2014; Lennox *et al.*, 2012; Dastidar, 2009).

The Heckman (1979) two-step estimation procedure is appropriate in this context because it allows us to estimate firm's M&A return, while controlling for the decision to diversify. In the first-stage probit regression (see Appendix A1), the dependent variable is a dummy that takes the value of one if the firm is a MNC and zero otherwise. Following the extant literature (e.g., Yang *et al.*, 2017; Choi *et al.*, 2014), we control for several firm-, industry-, and country-level variables that could affect firms' decision to diversify globally. These variables (defined in Appendix A2) include firm size, leverage, intangibles, Tobin's q, cash ratio, age, product diversification, current ratio, R&D intensity, inflation, and industry MNC ratio.<sup>2</sup>

Although the nonlinearity of the Mills ratio makes the Mills coefficient technically identifiable even without the imposition of exclusion restrictions (Lennox *et al.*, 2012), it is recommended that at least one variable should be included in the first-stage (probit) model that can be excluded from the second-stage (M&A returns) regression. Accordingly, we rely on several variables including product diversification, current ratio, R&D intensity, inflation, and industry MNC ratio for the exclusion restriction. We expect these exclusion variables to be positively correlated with firms' decision to become multinational (Choi *et al.*, 2014), but not necessarily (directly) related to the acquisition returns of individual firms.<sup>3</sup> For instance, while the concentration of MNCs in an industry (proxied by industry MNC ratio) is unlikely to influence the profitability of an individual firm's acquisition return, it is plausible for a firm operating in an industry dominated by MNCs to decide to become multinational (Choi *et al.*, 2014).

We also control for year- and industry-dummies in the first-stage probit regression. The first-stage probit regression yields a propensity score of the decision to diversify globally, which is then used to estimate a self-correction variable, lambda ( $\lambda$ ), corresponding to the inverse Mills ratio. This  $\lambda$  is then

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<sup>2</sup>In estimating the first-stage probit model, it is more appropriate to utilise firm-level variables *prevailing at the time a DC transitioned to become a MNC*. However, we are unable to identify the transition years for most of the MNCs in our sample, causing us to lose almost 20% of data when we apply this (desirable) approach. Therefore, we only apply this approach in our robustness analysis in Section 5 and use the firm-level variables in the *pre-acquisition years* for the main analysis. As shown in Appendix A1 and Table 8, the results based on both approaches [i.e., pre-acquisition variables (full sample) and pre-MNC transition (reduced sample)] are qualitatively similar.

<sup>3</sup>Appendix A1 and results in Models 5-6 of Table 9 provide empirical evidence in support of this claim with respect to the use of product diversification as an exclusion variable.

included in the second-stage regression in Eq. (1) to correct for endogeneity. Without this correction, the standard OLS regression model would compare MNCs and non-MNCs under the assumption that MNCs constitute a random sample of all firms in the database (Lennox *et al.*, 2012).

The baseline (second-stage) regression model utilised in this paper has the following structure:

$$Return_{it} = \alpha_{it} + \beta_1 Multinationality_{it} + \beta_2 X_{it} + f_{firm} + f_{industry} + f_{year} + \lambda + \varepsilon_{it} \quad \text{Eq. (1)}$$

where  $Return_{it}$  is the M&A returns for firm  $i$  in year  $t$ , measured as: (i) short-run announcement period returns; (ii) long-run operating performance; or (iii) long-run buy-and-hold abnormal returns. The announcement returns cover cumulative abnormal returns (CARs) for the (-1, +1), (-2, +2), and (-5, +5) event windows. We follow the standard event study methodology (see, Barbopoulos *et al.*, 2012) to compute the abnormal returns (ARs) and CARs by subtracting the daily return for the FTSE All-Share stock market index from the acquiring firm's daily stock return over the relevant event window. Thus, the CARs reflect the view of the market participants of the quality of the M&A deal.

For the long-run operating performance, we adopt a procedure similar to Arena and Dewally (2017) and measure it as the difference between the return on assets (ROA) for the three years following the acquisition and the ROA for the three years before the acquisition (i.e.,  $\Delta ROA$ ). The ROA is the earnings before interest, tax, depreciation and amortization (EBITDA) divided by total assets. We further follow procedures in Minnick, Unal and Yang (2011) to compute a long-run stock-based performance measure, buy-and-hold abnormal return (BHAR), as the difference between the three-year post-acquisition buy-and-hold returns of the acquirer and that of the benchmark portfolio.<sup>4</sup> The use of the three-year windows increases the likelihood of capturing post-acquisition returns since it may take several years for an acquirer to fully integrate a target (Minnick *et al.*, 2011).<sup>5</sup> In line with standard

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<sup>4</sup>Note that the long-run performance measure based on BHAR is, by definition, relative to the benchmark portfolio, and impliedly a different measure from that of the long-run operating performance. Hence, although we industry-adjust both performance measures, the two could capture different salient features of acquisition performance.

<sup>5</sup>The three-year window, however, poses a challenge to properly isolating the merger effect where there are multiple acquirers. We mitigate this problem by controlling for multiple acquirers in the regressions. Moreover, in untabulated results, we adopt two additional approaches to deal with this challenge. First, we eliminate multiple acquirers and conduct the analysis only for single acquirers. Next, we only consider the first acquisition of the multiple acquirer completed within a year, as in Minnick *et al.* (2011). Employing these additional approaches did not change our main findings and conclusions.

practice (see Yang *et al.*, 2017; Minnick *et al.*, 2011), the long-run performance measures are adjusted by the performance of the industry median firm to mitigate the effect of secular changes in performance.

The independent variable of interest is *Multinationality*<sub>it</sub> and it is measured one year before the focal acquisition was announced. Depending on the specified model, multinationality is defined as either a continuous variable or a dummy. Following Aabo *et al.* (2015), the continuous variable for multinationality is measured as the ratio of foreign sales to total sales. Park *et al.* (2013) contend that since the continuous variable utilises more fine-grained information, it can be a better measure of multinationality than a dummy. Thus, the foreign sales ratio becomes our main measure of multinationality. For robustness, we also create a multinationality dummy that takes the value of one if a firm's foreign sales ratio is at least 50% and takes zero otherwise. The 50% foreign sales threshold for the definition of multinationality is consistent with Aabo *et al.* (2015) and Park *et al.* (2013), and is chosen to ensure that firms classified as multinationals are truly firms with significant foreign operations. Beside serving as an alternative measure of multinationality, the multinationality dummy helps us to observe the impact of extreme multinationality (i.e., highly MNCs) on acquisition returns.

The coefficient on the multinationality variable ( $\beta_1$ ) in Eq. (1) shows the impact of multinationality on the performance of M&As after controlling for other known factors and endogeneity. A positive (negative) and significant value of  $\beta_1$  will denote the existence of a multinationality premium (discount) in M&A returns that go beyond the underlying characteristics of the acquiring firms and the deal. The vector  $X_{it}$  controls for other firm-specific factors and deal characteristics that are likely to influence M&A returns. These controls, defined in Appendix A2, include acquiring firm's size, Tobin's q, liquidity, leverage, intangibles, age, and acquisition experience. Deal characteristics such as the target firm being foreign, bankrupt, or public are also controlled for. We also control for whether the target is in a high-tech industry or operates in the same 4-digit-SIC industry as the acquirer. Other controls include means of payment for the deal (cash and equity), the duration for completing the deal, the relative size of the deal to the bidder's size, and whether the bid was hostile. We also include dummies to control for firm-, industry- and year-fixed effects, which are  $f_{firm}$ ,  $f_{industry}$  and  $f_{year}$ , respectively. The industry dummies are expected to control



for industry demands and factors, while the year dummies capture economy-wide shocks such as merger waves, recessions, market bubbles, etc. The firm-fixed effect account for the possibility that some firms are persistently better acquirers than others (Golubov *et al.*, 2015). Finally, the model includes an intercept ( $\beta_0$ ) and an error term ( $\varepsilon_{it}$ ). To mitigate the impact of outliers on the regression estimates, all continuous variables are winzorised at 1%.

**(ii) Data collection and sample description**

We examine all M&As (domestic and cross-border) by UK firms over the period 1987-2014. The cut-off point for the sample period was influenced by the requirement for the long-run M&A performance measures ( $\Delta ROA$  and  $BHAR$ ) to be observed for the three years before and after the completion of the deal. We exclude deals by governments and their agencies, healthcare, financial, and utility firms since they are not profit-oriented or are subject to stricter regulations. The data for M&As and deal characteristics are drawn from the *Thomson Financial Securities Data Corporation's (SDC) database*. We then require that the acquirer has available stock prices and relevant accounting information as well as segment-level data on foreign sales from *Datastream*. To capture deals that are likely to create excitement in the market, we further require the acquirer to have less than 10% of initial stake in the target and seek to own more than 50% of the target after the transaction.<sup>6</sup> Applying these filters leave us with a final sample of 6,022 M&As over the 1987-2014 period by UK firms, comprising 1,523 acquisitions by multinational firms and 4,499 acquisitions by non-MNCs.

Table 1 presents the distribution of the sample by year, degree of multinationality, and industry. Our sample period can be spilt into almost two equal parts – early years (1984-1999), constituting 49% of the sample; and recent years (2000-2014) making up the remaining 51%. The early periods are characterised by little global integration relative to the recent years, which permits us to examine whether the value of multinationality changed over time in response to the extent of global economic/financial market integration. Table 1 also clearly displays the increasing trend of corporate multinationality, with the proportion of MNCs rising from 20% in 1990 to 45% in 2011. In terms of

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<sup>6</sup>We are grateful to an anonymous reviewer for this suggestion.

industry, the consumer goods and industrial firms have the topmost representations; 30% and 26%, respectively. The industry with the least representation is telecommunications (2%), followed by retail (8%).

**[INSERT TABLE 1]**

Table 2 reports descriptive statistics for the sample. The average firm in our sample generates over a quarter of its sales from overseas (26%). The standard deviations for the foreign sales ratio and multinationality dummy are 30% and 43% respectively, indicating a significant variability in our multinationality measures. Except for  $\Delta ROA$ , it seems acquisitions by our sample firms are, on average, seen by investors to be value-enhancing since their announcements correspond with positive market reactions of between 1.17% and 9.5%. A comparison of the acquisition returns for our subsamples of MNCs and non-MNCs in Table 2 reveals no statistically significant difference between them, except for the BHAR which shows returns to be significantly higher for MNCs. Thus, our initial univariate analysis of acquisition returns (except for BHAR) largely suggests the absence of a multinationality effect (i.e., M&As by MNCs perform as well as those undertaken by their domestic counterparts).

**[INSERT TABLE 2]**

It is important to highlight that these preliminary results do not control for endogeneity and other known firm- and deal-specific features that can influence M&A returns. This is particularly important when the firm- and deal-level variables shown in Table 2 clearly suggest significant differences between MNCs and non-MNCs. Relative to the other firms, MNCs tend to be older, larger, and more experienced acquirers. They also have larger cash balances and intangible assets, as well as better growth prospects. These statistics suggest that MNCs may possess superior resources and capabilities that can be tapped in generating higher acquisition returns.

In terms of the features of the deal, MNCs seem to have a higher propensity to choose targets from foreign countries, from outside their own industries, and from high-tech (i.e., fast-growing) industries. Further, MNCs appear to have appetite for cash deals and listed (public) targets, which tend to be associated with lower information asymmetry problems and a lesser mispricing risk. MNCs also tend to avoid bankrupt targets as well as relatively larger targets that are likely to pose post-merger integration problems. Finally, the governance variables (board network and independence) indicate that

MNCs are likely to have better top management who can deliver successful acquisitions. Overall, the univariate analysis from Table 2 suggests that MNCs may be associated with superior internal capabilities, including quality board of directors who are able to select targets and negotiate deals that deliver acquisition premium. This largely support our argument in Section 2.

We present correlation matrix in Table 3, which supports the relations between multinationality and the firm and deal characteristics in Table 2. Table 3 also shows a strong association between our multinationality measures – foreign asset ratio and MNC dummy – with a coefficient of 0.87. There is, however, very little correlation between the short-run announcement returns and the long-run acquisition returns (up to 0.06), indicating that they may be capturing different aspects of the performance of the acquisition. There is also a mixed and largely insignificant correlation between the acquisition returns and the multinationality measures. Perhaps, this underscores the need for a robust test in a multivariate framework that takes care of endogeneity concerns. Finally, multicollinearity is unlikely to pose serious limitations on our multivariate regressions in the next section since the correlations among the explanatory variables are generally low, with the highest being the correlation between firm size and board independence (0.53).

**[INSERT TABLE 3]**

#### **4. RESULTS AND DISCUSSIONS**

This section applies the previously discussed methodology to the sample of acquisitions by MNCs and non-MNCs. First, we examine whether multinationality is associated with an acquisition premium or discount. We then delve deeper into establishing whether the multinationality effect, if any, has changed over time. We further explore potential explanations for the multinationality effect.

##### ***(i) Is there a multinationality premium (discount) in M&A returns?***

We begin our multivariate analysis with OLS regressions without considering the endogeneity of the decision to diversify internationally. Thus, Models 1 to 6 of Table 4 present results from estimation of Eq. (1), but without lambda ( $\lambda$ ). The dependent variables in Models 1 to 6 are announcement period returns for the 3-day (-1, +1), 5-day (-2, +2), and 11-day (-5, +5) windows around the announcement of

the bid. The results provide evidence for the presence of a statistically significant multinationality premium in M&A announcement returns. Specifically, in Models 1, 3, and 5, the coefficient on the foreign sales ratio is positive and significant, suggesting that greater foreign exposure/involvement is associated with an average of 2.2%-2.7% announcement period returns. The multinationality premium is observed after controlling for several known firm and deal characteristics. These results imply that investors value M&A deals by firms with greater foreign involvement more than those by other firms (i.e., MNCs' expansions via acquisitions create greater value for acquiring firms' shareholders). The results continue to hold, with premiums of 1.3% to 2.3% and significant at the 1% level, when multinationality is measured by an indicator variable – MNC dummy (see Models 2, 4, and 6).

**[INSERT TABLE 4]**

Prior to discussing our results further, we control for the endogeneity of the diversification decision using the Heckman procedures discussed in the methodology section. These results are reported in Models 7 to 12 of Table 4. According to this set of results, the endogeneity of the diversification decision has no material impact on the relations between multinationality and announcement period returns. All, but one of the parameter estimates for the multinationality effect remain significantly positive and of a similar magnitude as in the OLS regressions. Moreover, the coefficients for the inverse Mills ratio ( $\lambda$ ), the correction for self-selection, are all statistically insignificant, indicating that the decision to become a multinational or remain domestic does not influence the announcement returns from an acquisition. That is, the endogeneity associated with becoming multinational is unlikely to pose serious econometric challenges to our results. Therefore, we rely more on our OLS findings in subsequent analysis involving announcement returns. This is particularly important since the difficulty in obtaining valid instruments for the Heckman model could undermine its results (Lennox *et al.*, 2012). Moreover, we lose some observations (almost 10%) under Heckman specifications due to additional variable requirements.

Collectively, after controlling for the several factors that influence M&A performance, as well as the factors that induce self-selection, there seem to be a multinationality premium in M&A announcement returns. This finding implies that the benefits of being a MNC outweigh the costs, at least in terms of M&A investments. It appears that MNCs can leverage their superior

resources/competencies/capabilities to create competitive advantage in selecting suitable acquisition targets and in integrating, as well as managing those acquired targets. Thus, the evidence in this paper contradicts the geographic diversification discount literature (e.g., Denis *et al.*, 2002), but is in line with the view of superior performance by MNCs relative to DCs (Criscuolo and Martin, 2009). Criscuolo and Martin (2009) examine differences in productivity between foreign-owned plants and domestic-owned plants for a UK sample. They find that foreign-owned plants have higher productivity than domestic plants.

Turning to the control variables, some variables (namely; cash ratio, intangibles, foreign target, hi-tech target, bankrupt target, multiple acquirer, cash deal, stock deal, hostile deal, and completion days) do not appear to exert any significant influence on announcement returns. Other variables such as firm size, Tobin's q, leverage, related target, and public target mostly impact acquisition returns significantly negatively, while a significantly positive impact is largely observed for acquirer's firm age and the relative size of the deal to the acquirer's size. Most of these variables have signs that are consistent with prior findings in Yang *et al.* (2017), Gregory and O'Donohoe (2014), Bae *et al.* (2013), Barbopoulos *et al.* (2012) and Masulis *et al.*, (2007).

**(ii) *Does the multinationality premium persist in the long-run and over time?***

Thus far, we have shown that acquirers with higher foreign operations have better abnormal returns around acquisition announcements, and that multinationality seems to promote (reduce) the likelihood of value-enhancing (value-reducing) acquisitions. In this section, we analyse changes in acquirers' performance following the acquisitions (i.e., long-run returns) to examine whether the positive reaction on the stock market can be justified by real economic gains from the acquisitions.

Studies on the long-run performance of acquirers provide mixed results. Based on buy-and-hold abnormal returns, Dutta and Jog (2009) do not show any significant long-term abnormal returns for acquiring firms, while Yang *et al.* (2017) find acquirers to generally experience a decrease in operating performance. In contrast, Barbopoulos *et al.* (2012) show that the average acquirer gains 0.38% excess returns per month over a year, and that this gain is sustained over a period of five years. Furthermore, Minnick *et al.* (2011) show that well-governed firms (i.e., those with a higher pay-for-performance

sensitivity) display greater improvements in their operating performance following an acquisition. If, indeed, MNCs are better-governed through the presence of more diverse and independent boards, then we will expect the multinationality premium in announcement returns to persist in the long-run.

We test this prediction in Models 1 to 8 of Table 5 (using both OLS and Heckman procedures) and find mixed results. While results based on operating performance (ROA) show that multinationality is associated with a significant acquisition premium of 1.8% to 3.9%, the stock-based performance measure (BHAR) suggest no significant difference in the long-run acquisition performance of MNCs and non-MNCs. Since long-run stock returns can be noisy due to the influence of numerous factors in addition to the acquisition itself (Minnick *et al.*, 2011), we rely on the operating performance measure for any further analysis and in making inferences about the acquisition effect on long-run performance.

**[INSERT TABLE 5]**

Next, we examine whether the impact of multinationality on M&A returns shifts over time. Our expectation is that the multinationality effect should change over time because of increases in information sharing technology, a common international financial reporting framework, and a more integrated global economic/financial market. Bick *et al.* (2017) find increased information sharing and retrieval technology, as well as more standardised global financial reporting in recent years to have significantly reduced information asymmetry over their sample period: 1985-2014, leading to an elimination of the advantage possessed by informed acquirers when making acquisitions. Further, focusing on the extent to which a country's financial market is integrated into the global financial markets, Francis *et al.* (2008) find both short-run abnormal returns and long-run operating performance for acquirers to be significantly higher when targets are from segmented financial markets than when targets are from integrated financial markets. Their results imply that global diversification may be less valuable when financial markets are more integrated, and shareholders can directly diversify their portfolios with little restrictions. Thus, we predict a reduced multinationality advantage in recent years, and hence, a diminished multinationality premium in M&As over our sample period.

We find results inconsistent with this expectation of a weakened multinationality premium over time. As reported in Models 9 to 12 of Table 5, although the average multinationality effect remains significantly positive, the interaction terms between the multinationality measures and the indicator

variables for recent years (i.e., period 2; 2000-2014) are all insignificant across both the short-run and long-run models. This suggests that the recent multinationality premium earned by acquiring firms with greater foreign operations in recent years (2000-2014) is not significantly different from the returns earned in earlier years (1987-1999). These findings hold when the alternative acquisition returns (e.g., CAR -2, +2) are utilised, but these results are untabulated to conserve space. In summary, despite the increased integration of global markets coupled with increased information disclosures in recent years, multinational bidders still seem to possess an advantage in mergers and acquisitions, causing them to sustain the acquisition premium in recent years.

### ***(iii) Multinationality premium: Potential sources***

In this section, we conduct further analysis to explore some potential explanations for the observed multinationality premium in acquisition returns. All the analysis in this section (reported in Table 6) has the 3-day abnormal returns as the dependent variable and the foreign sales ratio as the independent variable. The findings remain qualitatively similar when alternative performance and multinationality measures are employed but these are again unreported to save space. The analysis here is motivated by the notion that the multinationality premium may increase with firms' capabilities/resources. It can also be argued that the multinationality premium increases when management is able to check agency problems.

As discussed in Section 2, a potential source of multinationality premium is the presence of valuable organisational resources/capabilities such as managerial know-how (e.g., boards with foreign network and acquisition experience) associated with large MNCs. Large firms that typically engage in serial acquisitions tend to have in-house M&A committees that advice management on acquisition deals. Such internal capabilities of large multinationals can enhance (prevent) value-creating (value-destroying) acquisitions through the selection of quality targets and the avoidance of post-integration problems. To the extent that these organisational capabilities are higher in larger, better-governed, and experienced firms (Miletkov *et al.*, 2017; Conyon *et al.*, 2018; and Iliev and Roth, 2018), we expect these firms to achieve greater multinationality premiums in M&A returns. Results in Models 1 to 6 of Table 6 support this conjecture. Specifically, significant multinationality premiums are observed in

larger firms, firms with higher board network, and for multiple acquirers, but not for other firms (i.e., small firms, firms with low board network, and single acquirers).

**[INSERT TABLE 6]**

Relatedly, the multinationality premium is likely to thrive if better-governed firms can minimize their agency problems by reducing discretionary cash-flow (Jensen, 1986) and enhancing managerial monitoring through quality audits (Ghafran and O’Sullivan, 2017). As can be seen from Models 7 to 10 of Table 6, these arguments are supported by our findings. In particular, the multinationality premium only exists in firms with lower levels of agency costs, i.e., those with low free-cash flow ( $\beta_1=0.039$ ,  $p=0.011$  in Model 8) and high audit quality ( $\beta_1=0.022$ ,  $p=0.009$  in Model 9).

We further examine in Table 7 whether the multinationality premium varies with the location of the target firm. First, we test in Models 1 to 2 whether the premium differs in foreign and domestic acquisitions and find the multinationality premium to be restricted to foreign acquisitions ( $\beta_1=0.026$ ,  $p=0.031$  in Model 1). Though the multinationality premium is positive in domestic acquisitions, it lacks statistical significance at conventional levels ( $\beta_1=0.017$ ,  $p=0.120$  in Model 2). These findings imply that multinationality becomes advantageous only in foreign (cross-border) acquisitions, which tend to be more complex, and where superior management with extensive foreign network and experience may be crucial. In untabulated results, we find that except for highly MNCs, the multinationality premium earned in foreign acquisitions is generally not significantly different from that of domestic acquisitions.<sup>7</sup>

Finally, in Models 3 to 6 of Table 7, we investigate the role of geographic distance between the acquirer and target nations, as well as the role of the economic environment of the target firm in shaping the multinationality premium. Bick *et al.* (2017) and Agyei-Boapeah (2015) suggest that geographic distance and the economic environment of the target firm can influence acquisition returns. The results in Models 3 to 4 suggest that the premium prevails across both shorter and longer geographic distances (i.e., targets domiciled in the European Union and beyond), while Models 5 to 6 report premium only when the target is domiciled in an advanced economy (i.e. G-7 countries). The G-7 results may perhaps

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<sup>7</sup>We are grateful to an anonymous reviewer for suggesting this analysis.



be because UK directors are more likely to have most of their foreign network from other G-7 countries and/or obtain their foreign work experience from other advanced countries, rather than from developing economies.

Collectively, the evidence observed in this section suggests that the multinationality advantage in M&As is not symmetric across all firms and all deal types. Instead, the multinationality advantage is higher or perhaps restricted to foreign acquisitions into advanced economies by large, experienced firms with quality top management who can curb agency problems.

**[INSERT TABLE 7]**

## **5. ROBUSTNESS TESTINGS**

We undertake a raft of robustness tests in this section. First, we test whether an alternative modelling of our first-stage (probit) regression for our Heckman procedures affect our key conclusions. Here, we drop any MNC for which it was impossible to identify its year of transition from DC to MNC. We then estimate the probit regression based on control variables constructed in the pre-transition year. As shown in Appendix A1, the probit regression result based on this restriction is similar to that without imposing this condition. More importantly, our key finding of a multinationality premium in M&As is robust to the imposition of this pre-transition condition (see Models 1 to 4 of Table 8).

Second, several studies suggest that corporate governance arrangements including board independence, board external network and board diversity, among others, can influence corporate outcomes such as acquisitions (e.g., Iliev and Roth, 2018; Masulis and Mobbs, 2014; Masulis *et al.*, 2007). It is, therefore, important to control for corporate governance in our regression model. To do this, we merge our sample to governance data collected from *BoardEx database*, but unfortunately, we lose considerable amount (66%) of data. Thus, we omit the corporate governance variables from the main regressions, and hereby test the robustness of the results with their inclusion. In Models 5 to 10 of Table 8, we show that the multinationality premium does not only remain positive and significant for the short-run announcement returns and the long-run operating performance, but also for the long-run buy-and-hold abnormal return.

**[INSERT TABLE 8]**

Third, as in Aabo *et al.* (2015) and Park *et al.* (2013), we reduce the 50% threshold for our alternative definition of multinationality (i.e., MNC dummy) to 40% and 30% and re-examine our key issue. The conclusion of there being a multinationality premium in M&As remains positive and significant, except for the long-run performance model with the 30% threshold definition of multinationality (see Models 1 to 4 of Table 9).

Finally, we test whether the multinationality premium we have reported is confounded by the acquiring firm's pre-merger product diversification. To conduct this analysis, we directly control for the firm's level of pre-merger product diversification in the multivariate regression in Eq. (1). The results reported in Models 5 to 6 of Table 9 are consistent with our main findings and conclusions. Thus, our reported multinationality premium is likely to result purely from the MNC's geographic scope. It is noteworthy that the product diversification variable is insignificantly related to acquisition returns, indicating that it could validly serve as an instrument in our Heckman selection models.

**[INSERT TABLE 9]**

## **6. CONCLUSIONS AND IMPLICATIONS**

This paper utilises a large mergers and acquisitions (M&A) dataset to provide new empirical insights into the value of corporate multinationality (i.e., the extent of foreign involvement). It takes a multi-theoretic perspective, drawing from the resource endowment and organisational capabilities theories (from the international business and strategy literature), as well as the agency theory (from the finance and economics literature) to hypothesise and test how variations in both the short- and long-run performance of M&A (i.e., M&A announcement period returns, changes in operating performance, and post-acquisition buy-and-hold abnormal returns) may be explained by the multinationality of the acquiring firm. Unlike most existing M&A studies about geographic scope which focus on the *geographic characteristic of the M&A transaction (i.e., analysis of cross-border vs. domestic M&A)*, the focus in this study is on the *geographic feature of the acquiring firm prior to the announcement of the M&A deal (i.e., analysis of multinational vs. non-multinational corporations)*. That is, we examine whether the M&A returns achieved by multinationals (MNCs) is systematically higher or lower than the returns obtained by their non-multinational counterparts.

The findings, based on multivariate regressions that control for a wide range of firm-specific and deal-specific factors, as well as the endogeneity of the global diversification decision, indicate that higher levels of multinationality are (on average) associated with significantly higher announcement period returns, ranging from 1.3% to 2.7%, depending on the event window and the multinationality proxy utilised. This finding denotes the presence of a multinationality premium in M&A announcement returns and implies that investors see MNC's valuable resources/organisational capabilities as a source of competitive advantage that can deliver M&A success. The results are consistent with the view that corporate multinationality may increase firm value and suggest corporate acquisitions as a specific vehicle through which MNCs can enhance their value. Long-run results, particularly those based on operating performance, also support the existence of a significant multinationality premium in M&As.

The results contained in this paper further suggest that there has not been any significant change in the value of corporate multinationality over time, despite the advancement in information sharing and retrieval technologies, reductions in information asymmetry, and a more integrated global market in recent years. Finally, there is evidence in this paper to suggest that the multinationality premium is not symmetric across all firms and all deal types. Instead, the multinationality premium is higher or perhaps restricted to deals involving foreign targets in advanced economies. The multinationality premium in M&As is also observed in large firms, firms with high board network, firms with high acquisition experience, and firms with low agency problems. Overall, these results provide some empirical evidence in support of the view that the multinationality premium may emanate from the superior resource capacities associated with MNCs and the ability to curb agency problems.

Although we provide important empirical insights on the value implications of corporate multinationality in M&As, our analysis and conclusions are based on a limited UK sample. Thus, interpretation and application of the results, especially in a non-UK context should be done with caution. To this end, future studies can extend this research by employing a global sample for its analysis to examine the applicability of the findings outside the UK. Similarly, and like all archival studies of this nature, our proxies for multinationality, returns, and governance, amongst others, may or may not reflect practice. Future studies may, therefore, offer new insights by conducting in-depth interviews and case studies among directors, corporate executives, investors and shareholders regarding these issues.

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**Table 1: Sample distribution by year, degree of multinationality and industry**

Year	Multinationality			Industry							Full sample	
	MNC	Non-MNC	%	Consum.	Indus.	Mater.	Media	R_Est.	Retail	Telecom	Number	%
1987	0	9	0%	0	6	0	1	2	0	0	9	0.15%
1988	0	21	0%	5	8	4	2	1	1	0	21	0.35%
1989	0	41	0%	18	6	7	2	2	6	0	41	0.68%
1990	12	49	20%	34	10	8	3	1	5	0	61	1.01%
1991	22	106	17%	43	24	25	10	6	19	1	128	2.13%
1992	33	151	18%	75	46	30	7	2	24	0	184	3.06%
1993	44	194	18%	88	66	33	17	13	20	1	238	3.95%
1994	67	270	20%	92	106	58	43	19	19	0	337	5.60%
1995	96	245	28%	105	108	50	47	12	18	1	341	5.66%
1996	80	254	24%	88	115	48	41	19	19	4	334	5.55%
1997	91	313	23%	87	125	69	32	47	35	9	404	6.71%
1998	98	371	21%	112	124	65	45	68	43	12	469	7.79%
1999	94	315	23%	126	85	43	66	54	25	10	409	6.79%
2000	93	253	27%	93	76	24	60	56	25	12	346	5.75%
2001	66	176	27%	73	65	16	47	11	20	10	242	4.02%
2002	56	158	26%	66	42	25	40	15	18	8	214	3.55%
2003	46	127	27%	48	37	21	24	15	22	6	173	2.87%
2004	47	190	20%	75	51	25	36	16	23	11	237	3.94%
2005	47	200	19%	68	63	17	50	14	25	10	247	4.10%
2006	79	234	25%	114	78	27	39	27	20	8	313	5.20%
2007	94	251	27%	115	90	26	47	37	20	10	345	5.73%
2008	82	129	39%	80	71	12	17	8	16	7	211	3.50%
2009	30	58	34%	31	22	10	9	5	10	1	88	1.46%
2010	65	96	40%	52	32	16	19	14	18	10	161	2.67%
2011	68	84	45%	44	42	15	22	15	11	3	152	2.52%
2012	45	80	36%	38	27	14	18	14	11	3	125	2.08%
2013	53	93	36%	40	29	9	20	30	12	6	146	2.42%
2014	15	31	33%	14	10	3	9	6	0	4	46	0.76%
Total	1523	4499	25%	1824	1564	700	773	529	485	147	6022	100.00%
%	25%	75%	25%	30%	26%	12%	13%	9%	8%	2%	100%	

This table summarises the sample across the sample period, the degrees of multinationality and the industry of the acquiring firms. The industry classifications are based on the primary industry of the acquiring firm as identified by SDC. Consum., Indus. Mater. And E.Est. above refers to the Consumer Goods industry, Industrial firms, Material industry, and Real Estates industry, respectively. Multinationality is defined in Appendix A2.

**Table 2: Descriptive statistics**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Full sample					MNC		Non-MNC		Mean diff
	Obs.	Mean	Std. dev	Min.	Max.	Obs.	Mean	Obs.	Mean	(8) - (10)
<i>Multinationality</i>										
Foreign sales ratio (FSR)	6022	0.2612	0.3017	0.0000	1.0000	1523	0.7099	4499	0.1092	0.6006***
MNC dummy	6022	0.2529	0.4347	0.0000	1.0000	1523	1.0000	4499	0.0000	
<i>M&amp;A returns measures</i>										
CAR (-1, +1)	6022	0.0113	0.0533	-0.2092	0.3111	1523	0.0114	4499	0.0113	0.0001
CAR (-2, +2)	6022	0.0119	0.0628	-0.2534	0.3463	1523	0.0124	4499	0.0118	0.0006
CAR (-5, +5)	6022	0.0113	0.0866	-0.3435	0.4456	1523	0.0129	4499	0.0107	0.0022
Adjusted ROA	4197	-0.0033	0.0788	-0.1779	0.1493	1207	-0.0064	2990	-0.0021	-0.0044
Adjusted BHAR	4266	0.0949	0.7716	-0.9870	1.8831	1079	0.2134	3187	0.0548	0.1586***
<i>Control variables</i>										
<i>Firm characteristics</i>										
Size	6022	12.1630	1.8932	0.6931	18.9613	1523	13.4431	4499	11.7296	1.7134***
Cash ratio	6022	0.1001	0.1054	0.0010	0.6181	1523	0.1194	4499	0.0936	0.0258***
Tobin's q	6022	1.7219	0.7989	0.8537	3.9782	1523	1.8805	4499	1.6683	0.2122***
Leverage	6022	0.2446	0.9060	0.0000	68.0000	1523	0.2496	4499	0.2429	0.0068
Intangibles	6022	0.1664	0.2232	-0.0195	0.9612	1523	0.2109	4499	0.1513	0.0596***
Age	6022	17.8399	12.9100	0.5671	49.2466	1523	23.8380	4499	15.8095	8.0286***
M&A experience	6022	0.6360	0.4812	0.0000	1.0000	1523	0.7098	4499	0.6110	0.0988***
<i>Deal characteristics</i>										
Foreign target	6022	0.3288	0.4698	0.0000	1.0000	1523	0.6888	4499	0.2069	0.4818***
Related target	6022	0.4756	0.4994	0.0000	1.0000	1523	0.4445	4499	0.4861	-0.0416***
Public target	6022	0.0588	0.2352	0.0000	1.0000	1523	0.0683	4499	0.0556	0.0127*
Hi-tech target	6022	0.0676	0.2511	0.0000	1.0000	1523	0.0827	4499	0.0625	0.0203***
Bankrupt target	6022	0.0141	0.1180	0.0000	1.0000	1523	0.0066	4499	0.0167	-0.0101***
Cash deal	6022	0.5629	0.4961	0.0000	1.0000	1523	0.6356	4499	0.5383	0.0972***
Stock deal	6022	0.0374	0.1897	0.0000	1.0000	1523	0.0204	4499	0.0431	-0.0228***
Hostile deal	6022	0.0020	0.0446	0.0000	1.0000	1523	0.0026	4499	0.0018	0.0008
Relative size	6022	0.0902	0.1278	0.0018	0.4877	1523	0.0615	4499	0.0999	-0.0384***
Completion days	6022	22.2008	73.9651	0.0000	3652.00	1523	23.9422	4499	21.6113	2.3310
<i>Governance variables</i>										
Board network	2071	6.5454	0.8320	2.8764	7.9788	582	6.8376	1489	6.4312	0.4063***
Board independence	2071	0.4235	0.1904	0.0000	0.8000	582	0.5041	1489	0.3919	0.1122***
Board diversity	2071	0.0643	0.0931	0.0000	0.6000	582	0.0642	1489	0.0644	-0.0002

This table summarises the descriptive statistics for the study's variables. \*\*\*, \*\*, and \* denote statistical significance at 1%, 5% and 10%, respectively. Variables are explained in Appendix A2. Note that MNCs having significantly lower relative size doesn't imply they buy smaller targets or engage in smaller deals. The average deal value for MNCs is £195.12m, compared to £65.65 for non-MNC



**Table 3: Correlation matrix**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Foreign sales ratio	1.00																										
MNC dummy	<b>0.87</b>	1.00																									
CAR (-1, +1)	-0.01	0.00	1.00																								
CAR (-2, +2)	-0.01	0.00	<b>0.89</b>	1.00																							
CAR (-5, +5)	0.00	0.01	<b>0.66</b>	<b>0.77</b>	1.00																						
Adjusted ROA	<b>-0.05</b>	-0.03	<b>0.06</b>	<b>0.06</b>	0.02	1.00																					
Adjusted BHAR	<b>0.06</b>	<b>0.09</b>	0.01	0.02	<b>0.03</b>	<b>0.17</b>	1.00																				
Size	<b>0.46</b>	<b>0.39</b>	<b>-0.09</b>	<b>-0.07</b>	<b>-0.05</b>	<b>-0.09</b>	<b>0.15</b>	1.00																			
Cash ratio	<b>0.13</b>	<b>0.11</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.06</b>	0.02	<b>-0.11</b>	1.00																		
Tobin's q	<b>0.12</b>	<b>0.12</b>	-0.01	0.00	0.01	<b>-0.09</b>	0.02	<b>-0.11</b>	<b>0.29</b>	1.00																	
Leverage	-0.01	0.00	0.00	0.00	<b>-0.05</b>	-0.02	0.01	<b>-0.06</b>	0.02	<b>0.04</b>	1.00																
Intangibles	<b>0.17</b>	<b>0.12</b>	<b>0.04</b>	<b>0.03</b>	<b>0.03</b>	<b>-0.10</b>	<b>-0.03</b>	<b>0.07</b>	<b>-0.05</b>	0.01	-0.02	1.00															
Age	<b>0.31</b>	<b>0.27</b>	<b>-0.03</b>	-0.02	0.00	0.01	0.02	<b>0.42</b>	<b>-0.03</b>	<b>-0.13</b>	-0.02	<b>-0.09</b>	1.00														
M&A experience	<b>0.10</b>	<b>0.09</b>	<b>-0.05</b>	<b>-0.03</b>	-0.02	<b>-0.06</b>	0.00	<b>0.16</b>	-0.02	<b>0.10</b>	-0.01	<b>0.09</b>	<b>0.02</b>	1.00													
Foreign target	<b>0.54</b>	<b>0.45</b>	-0.01	-0.01	0.00	<b>-0.06</b>	<b>0.05</b>	<b>0.31</b>	<b>0.11</b>	<b>0.14</b>	<b>0.02</b>	<b>0.10</b>	<b>0.18</b>	<b>0.06</b>	1.00												
Related target	<b>-0.05</b>	<b>-0.04</b>	-0.01	-0.01	0.01	0.00	<b>0.05</b>	-0.02	<b>-0.04</b>	-0.01	0.02	<b>0.05</b>	<b>-0.11</b>	-0.01	0.00	1.00											
Public target	<b>0.03</b>	<b>0.02</b>	<b>-0.07</b>	<b>-0.06</b>	<b>-0.04</b>	-0.02	0.01	<b>0.14</b>	0.01	-0.01	0.00	-0.01	<b>0.04</b>	<b>-0.07</b>	<b>-0.02</b>	0.01	1.00										
Hi-tech target	<b>0.07</b>	<b>0.04</b>	-0.01	-0.01	-0.01	<b>-0.04</b>	-0.02	<b>0.03</b>	<b>0.05</b>	<b>0.10</b>	-0.01	<b>0.17</b>	<b>-0.03</b>	<b>0.03</b>	<b>0.05</b>	<b>-0.13</b>	0.02	1.00									
Bankrupt target	<b>-0.05</b>	<b>-0.04</b>	-0.02	-0.01	-0.01	<b>0.04</b>	0.01	<b>-0.03</b>	-0.01	<b>-0.03</b>	0.00	<b>-0.05</b>	<b>-0.02</b>	<b>-0.03</b>	<b>-0.06</b>	-0.01	-0.01	-0.02	1.00								
Cash deal	<b>0.06</b>	<b>0.09</b>	<b>-0.04</b>	<b>-0.04</b>	-0.01	<b>0.03</b>	<b>0.12</b>	<b>0.21</b>	<b>-0.06</b>	<b>-0.07</b>	0.00	<b>-0.11</b>	<b>0.13</b>	<b>0.03</b>	<b>0.10</b>	0.01	<b>-0.12</b>	<b>-0.04</b>	<b>0.08</b>	1.00							
Stock deal	<b>-0.06</b>	<b>-0.05</b>	0.01	-0.01	<b>-0.03</b>	0.02	<b>-0.05</b>	<b>-0.13</b>	<b>0.04</b>	<b>0.05</b>	0.01	0.00	<b>-0.06</b>	<b>-0.06</b>	<b>-0.06</b>	-0.01	<b>0.19</b>	0.01	<b>-0.02</b>	<b>-0.22</b>	1.00						
Hostile deal	0.00	0.01	<b>-0.02</b>	-0.01	0.00	<b>-0.03</b>	0.01	0.01	<b>0.04</b>	0.01	0.00	-0.01	0.00	-0.01	<b>-0.02</b>	0.00	<b>0.18</b>	0.00	-0.01	<b>-0.04</b>	<b>0.03</b>	1.00					
Relative size	<b>-0.15</b>	<b>-0.13</b>	<b>0.11</b>	<b>0.10</b>	<b>0.08</b>	<b>0.04</b>	<b>-0.10</b>	<b>-0.36</b>	<b>0.13</b>	<b>0.15</b>	<b>0.05</b>	<b>0.05</b>	<b>-0.20</b>	<b>-0.19</b>	<b>-0.08</b>	<b>0.03</b>	<b>0.23</b>	0.02	<b>-0.04</b>	<b>-0.27</b>	<b>0.18</b>	<b>0.10</b>	1.00				
Completion days	<b>0.03</b>	0.01	-0.01	0.00	-0.01	<b>0.04</b>	0.00	<b>0.07</b>	<b>0.04</b>	0.01	0.00	-0.01	<b>0.04</b>	<b>-0.07</b>	<b>0.06</b>	0.01	<b>0.22</b>	-0.01	<b>-0.02</b>	<b>-0.07</b>	<b>0.09</b>	<b>0.06</b>	<b>0.19</b>	1.00			
Board network	<b>0.23</b>	<b>0.22</b>	-0.02	0.00	0.01	0.03	<b>0.07</b>	<b>0.38</b>	-0.03	0.03	0.01	<b>0.10</b>	<b>0.17</b>	<b>0.06</b>	<b>0.13</b>	-0.01	0.00	0.04	0.03	<b>0.07</b>	<b>-0.08</b>	<b>-0.14</b>	0.02	1.00			
Board independence	<b>0.34</b>	<b>0.26</b>	<b>-0.08</b>	<b>-0.07</b>	<b>-0.08</b>	<b>-0.05</b>	<b>0.12</b>	<b>0.53</b>	<b>-0.07</b>	0.00	<b>0.07</b>	<b>-0.06</b>	<b>0.25</b>	<b>0.06</b>	<b>0.16</b>	-0.02	<b>0.05</b>	0.00	-0.01	<b>0.12</b>	<b>-0.12</b>	<b>-0.21</b>	0.03	<b>0.36</b>	1.00		
Board diversity	-0.02	0.00	-0.01	-0.01	-0.01	0.02	0.04	<b>0.15</b>	<b>0.06</b>	<b>0.08</b>	-0.01	<b>0.16</b>	0.00	0.01	0.00	<b>0.11</b>	0.02	-0.01	0.01	<b>0.04</b>	0.00	-0.02	0.00	<b>0.15</b>	<b>0.12</b>	1.00	

The table shows the correlation matrix among variables. Variables are explained in Appendix A2. Figures in **bold** are significant at 10% levels and below. No hostile deals among the data with governance variables.

**Table 4: Average multinationality effect based on short-term announcement returns**

Models / Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Standard OLS regressions						Heckman two-stage procedure					
	CAR (-1, +1)		CAR (-2, +2)		CAR (-5, +5)		CAR (-1, +1)		CAR (-2, +2)		CAR (-5, +5)	
Foreign sales ratio	0.022*** (0.002)		0.023*** (0.005)		0.027** (0.022)		0.022*** (0.003)		0.023*** (0.008)		0.019 (0.104)	
MNC dummy		0.013*** (0.002)		0.015*** (0.002)		0.021*** (0.001)		0.013*** (0.002)		0.015*** (0.002)		0.019*** (0.004)
Size	-0.003 (0.242)	-0.002 (0.305)	-0.003 (0.282)	-0.002 (0.342)	-0.005 (0.177)	-0.004 (0.206)	-0.007* (0.063)	-0.006* (0.082)	-0.004 (0.290)	-0.004 (0.336)	-0.001 (0.856)	-0.001 (0.868)
Cash ratio	-0.008 (0.591)	-0.007 (0.617)	0.003 (0.872)	0.003 (0.855)	0.033 (0.131)	0.033 (0.132)	-0.021 (0.293)	-0.021 (0.305)	0.003 (0.886)	0.004 (0.876)	0.033 (0.289)	0.032 (0.300)
Tobin's q	-0.004** (0.047)	-0.004* (0.051)	-0.007*** (0.009)	-0.007** (0.010)	-0.007* (0.074)	-0.006* (0.082)	-0.008*** (0.009)	-0.008** (0.011)	-0.008** (0.020)	-0.008** (0.023)	-0.006 (0.217)	-0.006 (0.228)
Leverage	-0.001* (0.055)	-0.001* (0.063)	-0.001*** (0.001)	-0.001*** (0.001)	-0.006*** (0.000)	-0.006*** (0.000)	-0.001** (0.024)	-0.001** (0.029)	-0.002** (0.016)	-0.002** (0.018)	-0.005*** (0.000)	-0.005*** (0.000)
Intangibles	-0.014 (0.241)	-0.014 (0.266)	-0.014 (0.331)	-0.013 (0.344)	-0.007 (0.745)	-0.007 (0.731)	-0.020 (0.179)	-0.019 (0.195)	-0.016 (0.351)	-0.015 (0.360)	-0.009 (0.695)	-0.010 (0.655)
Age	0.004 (0.167)	0.004 (0.195)	0.004 (0.276)	0.003 (0.314)	0.008* (0.083)	0.008* (0.096)	0.004 (0.239)	0.003 (0.270)	0.004 (0.243)	0.004 (0.273)	0.011** (0.025)	0.011** (0.028)
Foreign target	0.000 (0.919)	0.000 (0.847)	-0.001 (0.753)	-0.001 (0.802)	-0.001 (0.838)	-0.001 (0.857)	0.000 (0.917)	0.000 (0.861)	-0.001 (0.626)	-0.001 (0.656)	-0.001 (0.748)	-0.001 (0.734)
Related target	-0.003 (0.102)	-0.003 (0.118)	-0.002 (0.305)	-0.002 (0.336)	0.000 (0.961)	0.000 (0.924)	-0.004* (0.063)	-0.003* (0.073)	-0.003 (0.164)	-0.003 (0.181)	-0.001 (0.737)	-0.001 (0.752)
Public target	-0.017*** (0.000)	-0.017*** (0.000)	-0.016*** (0.001)	-0.016*** (0.001)	-0.017** (0.014)	-0.017** (0.012)	-0.016*** (0.000)	-0.017*** (0.000)	-0.015*** (0.003)	-0.015*** (0.003)	-0.015** (0.026)	-0.016** (0.023)
Hi-tech target	-0.000 (0.998)	0.000 (0.990)	0.003 (0.516)	0.003 (0.501)	0.001 (0.839)	0.001 (0.816)	0.000 (0.919)	0.000 (0.913)	0.003 (0.555)	0.003 (0.543)	-0.000 (0.994)	0.000 (0.980)
Cash deal	-0.001 (0.718)	-0.001 (0.658)	-0.000 (0.813)	-0.001 (0.753)	0.002 (0.482)	0.002 (0.526)	-0.000 (0.898)	-0.000 (0.832)	0.000 (0.973)	-0.000 (0.964)	0.002 (0.566)	0.002 (0.602)
Stock deals	-0.005 (0.499)	-0.005 (0.502)	-0.008 (0.275)	-0.009 (0.272)	-0.016 (0.118)	-0.016 (0.113)	-0.004 (0.633)	-0.003 (0.641)	-0.007 (0.398)	-0.007 (0.396)	-0.012 (0.245)	-0.013 (0.231)
Multiple acquirer	-0.001 (0.461)	-0.002 (0.414)	-0.001 (0.589)	-0.001 (0.540)	0.001 (0.756)	0.001 (0.801)	-0.002 (0.473)	-0.002 (0.423)	-0.001 (0.638)	-0.001 (0.584)	0.001 (0.715)	0.001 (0.751)
Bankrupt target	-0.003 (0.606)	-0.003 (0.608)	-0.002 (0.789)	-0.002 (0.794)	-0.002 (0.808)	-0.002 (0.815)	-0.004 (0.583)	-0.004 (0.589)	-0.004 (0.643)	-0.004 (0.651)	-0.007 (0.507)	-0.007 (0.515)

Hostile deals	-0.019 (0.345)	-0.020 (0.303)	-0.016 (0.412)	-0.017 (0.358)	0.008 (0.688)	0.006 (0.758)	-0.018 (0.388)	-0.020 (0.339)	-0.019 (0.363)	-0.021 (0.308)	0.004 (0.846)	0.002 (0.914)
Relative size	0.049*** (0.000)	0.049*** (0.000)	0.057*** (0.000)	0.057*** (0.000)	0.063*** (0.000)	0.064*** (0.000)	0.055*** (0.000)	0.055*** (0.000)	0.064*** (0.000)	0.064*** (0.000)	0.074*** (0.000)	0.074*** (0.000)
Completion days	0.000 (0.503)	0.000 (0.485)	0.001 (0.424)	0.001 (0.408)	0.000 (0.818)	0.000 (0.797)	0.000 (0.413)	0.000 (0.394)	0.001 (0.346)	0.001 (0.328)	0.000 (0.919)	0.000 (0.896)
Inverse Mills ratio							-0.016 (0.191)	-0.016 (0.198)	-0.006 (0.691)	-0.006 (0.699)	0.013 (0.503)	0.013 (0.514)
Firm-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.096*** (0.001)	0.092*** (0.002)	0.014 (0.714)	0.010 (0.805)	0.023 (0.729)	0.019 (0.783)	0.148*** (0.005)	0.143*** (0.006)	0.036 (0.561)	0.031 (0.610)	-0.005 (0.953)	-0.006 (0.939)
Number of deals	6022.000	6022.000	6022.000	6022.000	6022.000	6022.000	5514.000	5514.000	5514.000	5514.000	5514.000	5514.000
R-squared	0.335	0.335	0.331	0.331	0.309	0.310	0.340	0.341	0.335	0.336	0.315	0.317

This table presents results for the multinationality effect on acquiring firms' short-run announcement returns based on standard OLS and Heckman selection procedures. Variables are explained in Appendix A2. Figures in parenthesis are  $p$ -values and robust standard errors are selected. \*\*\*, \*\*, and \* denote that the coefficient is statistically significant at 1%, 5% and 10%, respectively.

**Table 5: Average multinationality effect based on long-run returns and time period analysis**

Models / Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	OLS: Long-run returns				Heckman: Long-run returns				OLS: Time period			
	Ind.-adj.-ROA		Ind.-adj.-BHAR		Ind.-adj.-ROA		Ind.-adj.-BHAR		CAR (-1, +1)		Ind.-adj.-ROA	
Foreign sales ratio	0.033*** (0.004)		-0.109 (0.209)		0.039*** (0.000)		-0.073 (0.426)		0.021** (0.017)		0.038*** (0.004)	
MNC dummy		0.018*** (0.001)		0.027 (0.539)		0.019*** (0.000)		0.045 (0.312)		0.013** (0.015)		0.018*** (0.007)
Foreign sales ratio X Period_2									0.001 (0.859)		-0.009 (0.379)	
MNC dummy X Period_2										0.000 (0.966)		-0.001 (0.930)
Size	-0.031*** (0.000)	-0.030*** (0.000)	-0.489*** (0.000)	-0.493*** (0.000)	-0.012* (0.084)	-0.011 (0.104)	-0.571*** (0.000)	-0.575*** (0.000)	-0.003 (0.267)	-0.002 (0.316)	-0.031*** (0.000)	-0.030*** (0.000)
Cash ratio	0.063** (0.013)	0.064** (0.011)	-0.145 (0.350)	-0.166 (0.286)	0.152*** (0.000)	0.152*** (0.000)	-0.422* (0.095)	-0.434* (0.087)	-0.007 (0.603)	-0.007 (0.623)	0.061** (0.016)	0.064** (0.011)
Tobin's	-0.013*** (0.000)	-0.012*** (0.000)	-0.322*** (0.000)	-0.320*** (0.000)	0.001 (0.851)	0.001 (0.822)	-0.385*** (0.000)	-0.382*** (0.000)	-0.004** (0.049)	-0.004* (0.052)	-0.013*** (0.000)	-0.012*** (0.000)
Leverage	0.042** (0.012)	0.041** (0.014)	-0.145 (0.210)	-0.135 (0.239)	0.045*** (0.007)	0.043*** (0.009)	-0.205* (0.087)	-0.199* (0.095)	-0.001* (0.059)	-0.001* (0.065)	0.041** (0.012)	0.041** (0.014)
Intangibles	-0.021 (0.328)	-0.019 (0.381)	-0.367*** (0.008)	-0.392*** (0.005)	0.012 (0.594)	0.014 (0.543)	-0.419** (0.015)	-0.434** (0.012)	-0.015 (0.243)	-0.014 (0.268)	-0.019 (0.378)	-0.019 (0.389)
Age	0.005 (0.442)	0.005 (0.456)	0.083** (0.041)	0.082** (0.046)	0.010 (0.140)	0.010 (0.158)	0.039 (0.375)	0.036 (0.408)	0.004 (0.162)	0.004 (0.196)	0.004 (0.514)	0.005 (0.462)
Foreign target	-0.005* (0.050)	-0.005* (0.059)	-0.008 (0.721)	-0.011 (0.632)	-0.004 (0.118)	-0.004 (0.139)	-0.004 (0.879)	-0.006 (0.811)	0.000 (0.917)	0.000 (0.847)	-0.005* (0.051)	-0.005* (0.059)
Related target	0.006** (0.011)	0.006*** (0.008)	0.003 (0.903)	0.002 (0.925)	0.006** (0.017)	0.006** (0.012)	0.009 (0.676)	0.009 (0.678)	-0.003 (0.102)	-0.003 (0.119)	0.006** (0.011)	0.006*** (0.008)
Public target	0.008 (0.114)	0.008 (0.141)	0.085** (0.044)	0.085** (0.043)	0.009 (0.101)	0.008 (0.130)	0.083* (0.057)	0.083* (0.058)	-0.017*** (0.000)	-0.017*** (0.000)	0.008 (0.107)	0.008 (0.141)
Hi-tech target	-0.004 (0.310)	-0.004 (0.315)	-0.046 (0.239)	-0.046 (0.243)	-0.005 (0.220)	-0.005 (0.222)	-0.042 (0.287)	-0.041 (0.294)	-0.000 (0.998)	0.000 (0.990)	-0.004 (0.312)	-0.004 (0.315)
Cash deal	0.002 (0.369)	0.002 (0.406)	0.023 (0.238)	0.024 (0.232)	0.001 (0.502)	0.001 (0.557)	0.026 (0.208)	0.026 (0.204)	-0.001 (0.720)	-0.001 (0.659)	0.002 (0.393)	0.002 (0.409)
Stock deals	0.005 (0.503)	0.006 (0.494)	-0.006 (0.927)	-0.011 (0.863)	0.004 (0.651)	0.004 (0.618)	-0.010 (0.878)	-0.016 (0.808)	-0.005 (0.499)	-0.005 (0.502)	0.005 (0.509)	0.006 (0.495)
Multiple acquirer	-0.002 (0.577)	-0.002 (0.489)	-0.016 (0.542)	-0.016 (0.542)	-0.002 (0.580)	-0.002 (0.487)	-0.031 (0.252)	-0.031 (0.247)	-0.001 (0.462)	-0.002 (0.415)	-0.002 (0.577)	-0.002 (0.489)
Bankrupt target	0.006	0.006	-0.059	-0.060	0.006	0.006	-0.047	-0.048	-0.003	-0.003	0.006	0.006

	(0.514)	(0.515)	(0.448)	(0.444)	(0.550)	(0.539)	(0.565)	(0.562)	(0.608)	(0.609)	(0.517)	(0.516)
Hostile deals	-0.044**	-0.045**	0.126	0.127	-0.031*	-0.034*	0.207	0.207	-0.019	-0.020	-0.043**	-0.045**
	(0.034)	(0.025)	(0.502)	(0.503)	(0.078)	(0.059)	(0.288)	(0.292)	(0.344)	(0.303)	(0.037)	(0.026)
Relative size	-0.023*	-0.022*	-0.259**	-0.256**	-0.026*	-0.025*	-0.226**	-0.222**	0.049***	0.049***	-0.023*	-0.022*
	(0.084)	(0.087)	(0.012)	(0.013)	(0.054)	(0.056)	(0.036)	(0.039)	(0.000)	(0.000)	(0.080)	(0.087)
Completion days	0.002**	0.002**	0.016***	0.016***	0.001**	0.001**	0.016**	0.016**	0.000	0.000	0.002**	0.002**
	(0.022)	(0.019)	(0.009)	(0.009)	(0.041)	(0.038)	(0.011)	(0.011)	(0.505)	(0.486)	(0.021)	(0.019)
Inverse Mills ratio					0.083***	0.082***	-0.307*	-0.307*				
					(0.000)	(0.000)	(0.092)	(0.091)				
Period_2									-0.025	-0.023	0.017	0.015
									(0.290)	(0.332)	(0.387)	(0.437)
Firm-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.070	-0.071	3.244***	3.240***	-0.609***	-0.600***	4.859***	4.861***	0.096***	0.091***	-0.081	-0.086
	(0.612)	(0.607)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.002)	(0.559)	(0.539)
Number of deals	4197.000	4197.000	4266.000	4266.000	3932.000	3932.000	3929.000	3929.000	6022.000	6022.000	4197.000	4197.000
R-squared	0.619	0.619	0.713	0.712	0.627	0.627	0.712	0.712	0.335	0.335	0.619	0.619

This table presents results for the multinationality effect on acquiring firms' acquisition performance based on standard OLS and Heckman selection procedures. Period 1 refers to years 1987-1999 while Period 2 refers to 2000-2014. All other variables are explained in Appendix A2. Figures in parenthesis are *p*-values and robust standard errors are selected. \*\*\*, \*\*, and \* denote that the coefficient is statistically significant at 1%, 5% and 10%, respectively.

**Table 6: Average multinationality effect based on CAR (-1, +1) – Superior capabilities and agency analysis**

Models / Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Superior capabilities perspective						Agency perspective			
	Firm size		Board network		Acquisition experience		Free-cash flow		Audit quality	
	Large	Small	High	Low	Multiple	Single	High	Low	High	Low
Foreign sales ratio	0.023** (0.013)	0.020 (0.187)	0.062*** (0.004)	-0.008 (0.781)	0.021** (0.023)	0.028 (0.117)	0.013 (0.257)	0.039** (0.011)	0.022*** (0.009)	0.016 (0.320)
Size	0.000 (0.913)	-0.004 (0.313)	0.001 (0.927)	-0.009 (0.355)	0.000 (0.966)	-0.006 (0.217)	0.002 (0.511)	-0.004 (0.271)	0.001 (0.841)	-0.004 (0.298)
Cash ratio	0.006 (0.752)	-0.019 (0.374)	0.021 (0.625)	-0.000 (0.997)	-0.006 (0.737)	0.016 (0.593)	0.018 (0.345)	-0.261*** (0.003)	0.011 (0.531)	-0.020 (0.382)
Tobin's	-0.000 (0.930)	-0.006* (0.068)	0.001 (0.936)	-0.014** (0.034)	-0.009*** (0.002)	-0.004 (0.445)	-0.010*** (0.003)	-0.002 (0.590)	-0.003 (0.388)	-0.007* (0.061)
Leverage	-0.009 (0.539)	-0.001 (0.271)	0.001 (0.985)	0.000 (0.975)	-0.007 (0.590)	0.001 (0.949)	-0.000 (0.693)	0.022 (0.209)	-0.000 (0.269)	0.008 (0.343)
Intangibles	-0.000 (0.996)	-0.026 (0.239)	0.013 (0.670)	-0.008 (0.853)	-0.015 (0.325)	-0.002 (0.935)	0.005 (0.791)	-0.021 (0.298)	-0.014 (0.356)	-0.031 (0.164)
Age	0.001 (0.846)	0.006 (0.188)	0.014* (0.088)	0.006 (0.471)	0.000 (0.878)	0.009 (0.222)	0.001 (0.750)	0.004 (0.442)	0.003 (0.548)	0.002 (0.615)
Foreign target	0.001 (0.630)	-0.001 (0.828)	-0.001 (0.717)	0.005 (0.415)	-0.000 (0.963)	0.003 (0.598)	0.001 (0.592)	0.000 (0.922)	0.001 (0.683)	-0.003 (0.465)
Related target	-0.002 (0.407)	-0.004 (0.211)	-0.001 (0.853)	-0.002 (0.641)	-0.001 (0.784)	-0.005 (0.274)	-0.003 (0.188)	-0.001 (0.795)	-0.002 (0.377)	-0.004 (0.182)
Public target	-0.011** (0.013)	-0.033*** (0.000)	-0.030*** (0.002)	-0.008 (0.499)	-0.013*** (0.008)	-0.028*** (0.001)	-0.023*** (0.000)	-0.012** (0.052)	-0.009* (0.061)	-0.034*** (0.000)
Hi-tech target	0.003 (0.466)	-0.002 (0.755)	0.006 (0.363)	-0.012 (0.258)	0.000 (0.919)	-0.003 (0.789)	-0.006 (0.174)	0.007 (0.285)	0.001 (0.821)	-0.002 (0.839)
Cash deal	0.001 (0.808)	-0.002 (0.583)	-0.002 (0.518)	0.000 (0.925)	0.000 (0.852)	-0.001 (0.826)	0.004 (0.104)	-0.005* (0.081)	0.002 (0.375)	-0.002 (0.440)
Stock deals	0.008 (0.491)	-0.008 (0.360)	-0.003 (0.853)	-0.052*** (0.007)	-0.001 (0.872)	-0.015 (0.305)	-0.001 (0.902)	-0.003 (0.751)	0.007 (0.563)	-0.006 (0.491)
Multiple acquirer	-0.003 (0.323)	-0.001 (0.706)	-0.001 (0.758)	0.000 (0.981)	0.000 (.)	0.000 (.)	-0.005 (0.120)	-0.001 (0.780)	-0.003 (0.268)	0.000 (0.889)
Bankrupt target	0.005 (0.600)	-0.008 (0.336)	0.018 (0.364)	0.001 (0.975)	0.004 (0.563)	-0.009 (0.609)	0.004 (0.631)	-0.011 (0.281)	-0.006 (0.548)	-0.003 (0.689)
Hostile deals	-0.040* (0.080)	0.025 (0.487)	0.000 (.)	0.000 (.)	-0.035 (0.120)	0.012 (0.648)	-0.003 (0.919)	-0.050*** (0.000)	-0.045* (0.082)	0.019 (0.453)
Relative size	0.058*** (0.001)	0.049*** (0.001)	0.078*** (0.004)	0.030 (0.368)	0.039*** (0.004)	0.053** (0.038)	0.048*** (0.003)	0.053*** (0.002)	0.070*** (0.000)	0.041*** (0.007)
Completion days	0.001 (0.324)	-0.000 (0.709)	0.001 (0.331)	0.001 (0.501)	-0.000 (0.798)	0.001 (0.483)	0.000 (0.691)	-0.000 (0.990)	0.001 (0.418)	-0.000 (0.850)
Firm-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.002 (0.975)	0.084** (0.021)	-0.009 (0.917)	0.149 (0.268)	0.014 (0.748)	0.075 (0.265)	0.022 (0.548)	0.090 (0.168)	0.001 (0.980)	0.133*** (0.001)
Number of deals	2721.000	3301.000	1004.000	1067.000	3830.000	2192.000	3023.000	2999.000	2728.000	3294.000
R-squared	0.255	0.407	0.419	0.445	0.296	0.571	0.439	0.424	0.305	0.438

This table presents results for the multinationality effect on acquiring firms' acquisition performance based on standard OLS regressions. Variables are explained in Appendix A2. Large vs. Small and High vs. Low splits are based on median values. Figures in parenthesis are  $p$ -values and robust standard errors are selected. \*\*\*, \*\*, and \* denote that the coefficient is statistically significant at 1%, 5% and 10%, respectively.

**Table 7: Average multinationality effect based on CAR (-1, +1) – Target location analysis (cum UK)**

Models / Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Acquisition type		Geographic proximity		Economic development	
	Foreign	Domestic	Europe	Non-Europe	G7	Non-G7
Foreign sales ratio	0.026** (0.031)	0.017 (0.120)	0.024** (0.015)	0.031** (0.017)	0.021** (0.011)	0.021 (0.454)
Size	-0.005 (0.239)	-0.002 (0.581)	-0.001 (0.629)	-0.009* (0.095)	-0.001 (0.569)	-0.002 (0.817)
Cash ratio	0.034 (0.205)	-0.025 (0.154)	-0.007 (0.684)	-0.004 (0.900)	-0.023 (0.134)	0.098* (0.098)
Tobin's	-0.002 (0.521)	-0.004 (0.218)	-0.005** (0.045)	0.004 (0.378)	-0.003 (0.292)	-0.007 (0.253)
Leverage	-0.001* (0.059)	0.009 (0.530)	0.005 (0.701)	0.014 (0.495)	0.006 (0.611)	-0.001 (0.487)
Intangibles	0.003 (0.882)	-0.007 (0.707)	-0.011 (0.480)	0.007 (0.785)	-0.013 (0.341)	0.010 (0.811)
Age	0.007 (0.153)	0.003 (0.458)	0.004 (0.249)	0.005 (0.409)	0.002 (0.440)	0.006 (0.506)
Foreign target	0.000 (.)	0.000 (.)	-0.000 (0.912)	0.000 (.)	0.002 (0.395)	0.000 (.)
Related target	0.000 (0.885)	-0.003 (0.158)	-0.002 (0.261)	-0.004 (0.319)	-0.003 (0.198)	-0.004 (0.547)
Public target	-0.013* (0.045)	-0.023*** (0.001)	-0.020*** (0.001)	-0.007 (0.265)	-0.019*** (0.001)	-0.018 (0.168)

	(0.064)	(0.000)	(0.000)	(0.327)	(0.000)	(0.229)
Hi-tech target	0.003	-0.004	-0.003	0.003	-0.002	0.003
	(0.631)	(0.387)	(0.479)	(0.679)	(0.503)	(0.799)
Cash deal	0.005	-0.004*	-0.002	0.004	-0.002	-0.001
	(0.140)	(0.071)	(0.468)	(0.314)	(0.288)	(0.896)
Stock deals	0.014	-0.006	-0.003	0.014	-0.005	-0.004
	(0.535)	(0.436)	(0.733)	(0.512)	(0.489)	(0.910)
Multiple acquirer	-0.003	-0.001	-0.002	-0.005	-0.002	0.001
	(0.464)	(0.605)	(0.493)	(0.248)	(0.292)	(0.899)
Bankrupt target	0.004	-0.001	-0.001	0.016	-0.003	-0.084
	(0.703)	(0.872)	(0.845)	(0.202)	(0.661)	(0.186)
Hostile deals	-0.097***	-0.009	-0.012	-0.106***	-0.018	0.000
	(0.000)	(0.679)	(0.571)	(0.000)	(0.384)	(.)
Relative size	0.083***	0.039***	0.044***	0.087***	0.049***	0.043
	(0.000)	(0.005)	(0.001)	(0.002)	(0.000)	(0.386)
Completion days	0.001	0.001	0.000	0.001	0.000	0.001
	(0.476)	(0.435)	(0.541)	(0.301)	(0.586)	(0.622)
Firm-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.008	0.110***	0.096***	0.171***	0.094***	-0.027
	(0.919)	(0.001)	(0.003)	(0.002)	(0.002)	(0.846)
Number of deals	1980.000	4042.000	4815.000	1207.000	5202.000	820.000
R-squared	0.446	0.400	0.369	0.565	0.360	0.622

This table presents results for the multinationality effect on acquiring firms' acquisition performance based on standard OLS regressions. Variables are explained in Appendix A2. Figures in parenthesis are *p*-values and robust standard errors are selected. \*\*\*, \*\*, and \* denote that the coefficient is statistically significant at 1%, 5% and 10%, respectively.



**Table 8: Robustness tests of the average multinationality effect**

Models / Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Heckman: Prior to MNC transition				OLS: Incorporating corporate governance variables					
	CAR (-1, +1)		Ind.-adj.-ROA		CAR (-1, +1)		Ind.-adj.-ROA		Ind.-adj.-BHAR	
Foreign sales ratio	0.021*** (0.006)		0.033*** (0.004)		0.030** (0.022)		0.072*** (0.000)		0.353* (0.052)	
MNC dummy		0.013*** (0.001)		0.016*** (0.003)		0.015** (0.022)		0.028*** (0.000)		0.261*** (0.001)
Size	-0.001 (0.739)	0.000 (0.976)	-0.035*** (0.000)	-0.034*** (0.000)	-0.004 (0.498)	-0.003 (0.555)	-0.059*** (0.000)	-0.058*** (0.000)	-0.500*** (0.000)	-0.488*** (0.000)
Cash ratio	-0.002 (0.912)	0.001 (0.939)	0.050* (0.073)	0.055** (0.049)	0.017 (0.523)	0.014 (0.609)	0.046 (0.232)	0.035 (0.367)	-0.738** (0.038)	-0.754** (0.029)
Tobin's	-0.004 (0.165)	-0.003 (0.220)	-0.017*** (0.000)	-0.016*** (0.000)	-0.009** (0.018)	-0.009** (0.015)	-0.018*** (0.003)	-0.019*** (0.003)	-0.427*** (0.000)	-0.425*** (0.000)
Leverage	-0.000 (0.246)	-0.000 (0.378)	0.049*** (0.008)	0.049*** (0.009)	-0.002 (0.790)	-0.002 (0.720)	0.097*** (0.002)	0.082*** (0.009)	0.347 (0.159)	0.282 (0.241)
Intangibles	-0.015 (0.312)	-0.014 (0.335)	-0.035 (0.151)	-0.033 (0.183)	0.002 (0.930)	0.003 (0.901)	0.016 (0.657)	0.022 (0.555)	0.358 (0.180)	0.431 (0.105)
Age	0.003 (0.414)	0.002 (0.484)	0.001 (0.857)	0.001 (0.937)	0.010** (0.037)	0.010** (0.039)	0.023** (0.037)	0.023** (0.040)	0.122 (0.130)	0.104 (0.195)
Foreign target	-0.001 (0.767)	-0.001 (0.820)	-0.003 (0.344)	-0.003 (0.388)	0.001 (0.723)	0.001 (0.707)	-0.004 (0.324)	-0.004 (0.341)	0.023 (0.506)	0.019 (0.578)
Related target	-0.004* (0.062)	-0.004* (0.073)	0.007** (0.011)	0.007*** (0.009)	-0.002 (0.559)	-0.001 (0.633)	0.008** (0.017)	0.009** (0.012)	-0.006 (0.846)	-0.001 (0.984)
Public target	-0.018*** (0.000)	-0.018*** (0.000)	0.015** (0.014)	0.014** (0.022)	-0.018** (0.010)	-0.019*** (0.010)	0.001 (0.904)	0.001 (0.929)	0.084 (0.266)	0.086 (0.264)
Hi-tech target	0.000 (0.929)	0.000 (0.920)	-0.003 (0.471)	-0.003 (0.483)	-0.002 (0.706)	-0.002 (0.739)	0.001 (0.818)	0.002 (0.805)	0.002 (0.977)	0.002 (0.966)
Cash deal	-0.000 (0.852)	-0.001 (0.770)	0.004 (0.131)	0.003 (0.164)	-0.001 (0.649)	-0.001 (0.672)	-0.000 (0.892)	-0.000 (0.996)	0.038 (0.247)	0.039 (0.228)
Stock deals	-0.001 (0.920)	-0.001 (0.926)	0.003 (0.783)	0.003 (0.743)	-0.037*** (0.003)	-0.036*** (0.003)	0.009 (0.657)	0.010 (0.629)	0.092 (0.433)	0.090 (0.439)
Multiple acquirer	-0.002 (0.482)	-0.002 (0.447)	-0.003 (0.443)	-0.003 (0.394)	-0.001 (0.692)	-0.001 (0.683)	-0.002 (0.627)	-0.002 (0.618)	-0.011 (0.794)	-0.013 (0.766)
Bankrupt target	-0.004 (0.562)	-0.004 (0.577)	0.010 (0.395)	0.010 (0.378)	0.014 (0.292)	0.014 (0.303)	0.004 (0.824)	0.003 (0.866)	-0.154 (0.279)	-0.146 (0.308)
Hostile deals	-0.002 (0.940)	-0.003 (0.863)	-0.029 (0.267)	-0.033 (0.214)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Relative size	0.051*** (0.000)	0.051*** (0.000)	-0.025* (0.090)	-0.025* (0.088)	0.057*** (0.008)	0.057*** (0.008)	-0.044** (0.044)	-0.044** (0.045)	-0.126 (0.426)	-0.122 (0.438)
Completion days	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.015	0.016

Inverse Mills ratio	(0.376) 0.010 (0.348)	(0.349) 0.014 (0.179)	(0.201) -0.028* (0.051)	(0.180) -0.023 (0.124)	(0.348)	(0.319)	(0.185)	(0.144)	(0.146)	(0.112)
Board network					-0.001 (0.774)	-0.001 (0.707)	-0.003 (0.525)	-0.003 (0.554)	-0.070 (0.156)	-0.068 (0.168)
Board independence					0.028 (0.116)	0.029 (0.106)	-0.020 (0.448)	-0.018 (0.502)	0.230 (0.318)	0.258 (0.265)
Board diversity					-0.003 (0.905)	-0.004 (0.871)	0.058 (0.133)	0.058 (0.134)	0.029 (0.937)	0.001 (0.998)
Firm-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.012 (0.869)	-0.020 (0.786)	-0.161 (0.318)	-0.189 (0.251)	0.067 (0.413)	0.066 (0.419)	0.639*** (0.000)	0.634*** (0.000)	7.359*** (0.000)	7.194*** (0.000)
Number of deals	4917.000	4917.000	3444.000	3444.000	2071.000	2071.000	1504.000	1504.000	1389.000	1389.000
R-squared	0.345	0.345	0.637	0.637	0.380	0.380	0.694	0.693	0.775	0.778

This table presents results for the multinationality effect on acquiring firms' acquisition performance based on standard OLS and Heckman selection procedures. All variables are explained in Appendix A2. Figures in parenthesis are *p*-values and robust standard errors are selected. \*\*\*, \*\*, and \* denote that the coefficient is statistically significant at 1%, 5% and 10%, respectively.

**Table 9: Robustness test of the average multinationality effect**

Models / Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Alternative definitions of MNC dummy				Product diversification control	
	CAR (-1, +1)		Ind.-adj.-ROA		CAR (-1, +1)	Ind.-adj.-ROA
MNC dummy=FSR>=30%	0.006*		0.006			
	(0.071)		(0.299)			
MNC dummy=FSR>=40%		0.010***		0.012**		
		(0.004)		(0.037)		
Foreign sales ratio					0.022***	0.033***
					(0.002)	(0.004)
Size	-0.002	-0.003	-0.030***	-0.030***	-0.003	-0.031***
	(0.268)	(0.247)	(0.000)	(0.000)	(0.189)	(0.000)
Cash ratio	-0.006	-0.007	0.066***	0.065***	-0.007	0.063**
	(0.672)	(0.605)	(0.008)	(0.010)	(0.606)	(0.012)
Tobin's	-0.004**	-0.004**	-0.013***	-0.013***	-0.004*	-0.012***
	(0.049)	(0.047)	(0.000)	(0.000)	(0.057)	(0.000)
Leverage	-0.001*	-0.001*	0.039**	0.040**	-0.001**	0.041**
	(0.050)	(0.055)	(0.017)	(0.015)	(0.040)	(0.013)
Intangibles	-0.011	-0.013	-0.014	-0.018	-0.014	-0.020
	(0.363)	(0.270)	(0.498)	(0.392)	(0.271)	(0.359)
Age	0.004	0.004	0.005	0.006	0.004	0.005
	(0.181)	(0.147)	(0.455)	(0.396)	(0.163)	(0.433)
Foreign target	0.000	0.000	-0.005*	-0.005*	0.000	-0.005*
	(0.824)	(0.864)	(0.075)	(0.063)	(0.926)	(0.051)
Related target	-0.003	-0.003	0.006***	0.006**	-0.003	0.006**
	(0.116)	(0.105)	(0.009)	(0.010)	(0.111)	(0.010)
Public target	-0.017***	-0.017***	0.008	0.008	-0.017***	0.008
	(0.000)	(0.000)	(0.125)	(0.118)	(0.000)	(0.112)
Hi-tech target	-0.000	-0.000	-0.005	-0.005	-0.000	-0.005
	(0.948)	(0.954)	(0.281)	(0.274)	(0.961)	(0.292)
Cash deal	-0.001	-0.001	0.002	0.002	-0.001	0.002
	(0.738)	(0.740)	(0.373)	(0.369)	(0.728)	(0.368)
Stock deals	-0.004	-0.005	0.006	0.006	-0.005	0.006
	(0.532)	(0.504)	(0.436)	(0.467)	(0.511)	(0.490)
Multiple acquirer	-0.002	-0.002	-0.002	-0.002	-0.001	-0.002
	(0.419)	(0.394)	(0.544)	(0.523)	(0.449)	(0.564)
Bankrupt target	-0.003	-0.003	0.007	0.006	-0.003	0.006
	(0.599)	(0.584)	(0.510)	(0.525)	(0.606)	(0.515)
Hostile deals	-0.020	-0.019	-0.044**	-0.044**	-0.019	-0.044**
	(0.320)	(0.336)	(0.031)	(0.036)	(0.343)	(0.031)
Relative size	0.048***	0.048***	-0.023*	-0.023*	0.049***	-0.023*
	(0.000)	(0.000)	(0.078)	(0.076)	(0.000)	(0.082)
Completion days	0.000	0.000	0.002**	0.002**	0.000	0.002**
	(0.495)	(0.484)	(0.023)	(0.022)	(0.489)	(0.021)
Product diversification					0.001	0.001
					(0.267)	(0.414)
Firm-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.092***	0.094***	-0.079	-0.082	0.099***	-0.065
	(0.002)	(0.001)	(0.571)	(0.558)	(0.001)	(0.635)
number of deals	6022.000	6022.000	4197.000	4197.000	6022.000	4197.000
R-squared	0.334	0.335	0.618	0.618	0.335	0.619

Variables are explained in Appendix A2. Figures in parenthesis are *p*-values. \*\*\*, \*\*, and \* denote statistical significance at 1%, 5% and 10%, respectively.

**Appendix A1: First-stage probit model for the multinationality decision**

Model / Control variables	(1)		(2)	
	Pre-acquisition		Pre-MNC transition	
	Parameter	p-value	Parameter	p-value
Size	0.328***	(0.000)	0.283***	(0.000)
Leverage	0.046***	(0.006)	0.024**	(0.043)
Intangibles	1.257***	(0.000)	0.727***	(0.000)
Tobin's	0.221***	(0.000)	0.156***	(0.000)
Cash ratio	0.912***	(0.000)	1.100***	(0.000)
Age	0.017***	(0.000)	0.008***	(0.000)
<i>Diversification</i>	0.119***	(0.004)	-0.049***	(0.000)
<i>Current ratio</i>	1.029***	(0.000)	0.778***	(0.000)
<i>R&amp;D</i>	4.762***	(0.000)	5.041***	(0.000)
<i>Inflation</i>	24.774	(0.429)	14.392	(0.668)
<i>Industry MNC ratio</i>	0.110***	(0.000)	0.075***	(0.001)
Industry fixed effect	Yes		Yes	
Year fixed effect	Yes		Yes	
Constant	-6.960***	(0.000)	-5.336***	(0.000)
N	7035.000		6044.000	
Pseudo R <sup>2</sup>	0.271		0.188	

This table shows the probit regression of the decision to become a MNC. Variables in *italics* are not included in the second-stage regressions. All variables are explained in Appendix A2. Figures in parenthesis are *p*-values. \*\*\*, \*\*, and \* denote that the coefficient is statistically significant at 1%, 5% and 10%, respectively.

## Appendix A2: Description of variables

<u>Proxies for multinationality</u>	
Foreign sales ratio	Foreign sales / total sales
MNC dummy	A dummy variable that equals 1 if foreign sales ratio is at least 50% and 0 otherwise.
<u>Performance variables</u>	
CAR (-1, +1)	Event study announcement period returns based on the market model and the event window (-1, +1).
CAR (-2, +2)	Event study announcement period returns based on the market model and the event window (-2, +2).
CAR (-5, +5)	Event study announcement period returns based on the market model and the event window (-5, +5).
Industry-adjusted ROA	The industry-median-adjusted change in <i>ROA</i> based on the 3 years post-acquisition and the 3-year pre-acquisition <i>ROA</i> .
Industry-adjusted BHAR	The industry-median adjusted difference between the 3-year post-acquisition buy-and-hold returns of the acquirer and that of the benchmark portfolio.
<u>Main regression variables</u>	
Firm size	The natural log of total assets
Tobin's q	Market to book ratio calculated as (Total assets + market capitalisation - common equity) / total assets
Liquidity	Cash ratio calculated as Cash and cash equivalent / total assets
Intangibles	Intangible assets / total assets
Firm age	The difference between the year the acquisition was announced and the year the firm first appeared on Datastream.
Acquisition experience	A dummy variable that equals 1 if a firm is a multiple (frequent) acquirer, i.e., makes more than one acquisition in a year.
Foreign target	A dummy variable that equals 1 if a firm acquires a target firm in a country other than the UK.
Bankrupt target	A dummy variable that equals 1 if a firm acquires a target firm which is bankrupt or goes bankrupt during the transaction.
Public target	A dummy variable that equals 1 if a firm acquires a target firm which is listed on the exchange.
High-tech target	A dummy variable that equals 1 if a firm acquires a target firm which operates in the technology industry.
Related target	A dummy variable that equals 1 if a firm acquires a target firm which shares the same 2-digit SIC code with the acquirer.
Hostile target	A dummy variable that equals 1 if a firm acquires a target firm in a hostile (unfriendly) way.
Cash deals	A dummy variable that equals 1 if a firm finances the acquisition entirely with cash.
Stock deals	A dummy variable that equals 1 if a firm finances the acquisition entirely with stock/equity.
Completion days	The number of days between the announcement of the deal and the day the deal was completed.
Relative size	The value of the acquisition deal / total asset of the acquirer.
<u>Other variables</u>	
Product diversification	A dummy variable that equals 1 if a firm is a multi-segment firm based on product segment data.
Current ratio	(Current assets - current liabilities) / total assets
R&D intensity	Research and development (R&D) expenditure / total assets
Inflation	Percentage change in the consumer price index (CPI) over a year
MNC industry ratio	The proportion of MNCs in an industry in a given year
Audit quality	Audit fees / total assets
Board network	The number of other boards that a director currently sits plus the number of previous boards s/he has sat on.
Board independence	The number of independent non-executive directors / total number of members on the board
Board diversity	The number of female directors / total number of members on the board

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