Cross-border acquisitions and financial leverage of UK acquirers

Henry Agyei-Boapeah

[a] *Liverpool Business School, Liverpool John Moores University, Liverpool, UK.*

E-mail: H.AgyeiBoapeah@ljmu.ac.uk Telephone: 0044(0)1512314742

ABSTRACT

Based on a sample of 782 acquisitions by UK firms during 1982-2009, this paper examines the impact of cross-border acquisitions on financial leverage. The paper shows that cross-border acquisitions have a negative impact on the financial leverage of acquiring firms. However, the negative impact of cross-border acquisitions disappears when acquirers choose targets from developed countries, and also when the acquisitions are undertaken by multinational firms. Collectively, the findings imply that exposure to foreign markets reduces the borrowing ability of acquiring firms especially when they choose targets from developing countries, and when they have no experience in foreign markets.

Key words: Financial leverage, cross-border acquisitions, internationalization, M&A, UK

1. Introduction

Recent years have witnessed a tremendous growth in cross-border mergers and acquisitions (M&As). Erel, Liao, and Weisbach (2012) report that the share of cross-border acquisitions in the total volume of M&As increased from around 23% in 1998 to about 45% in 2007, and UK corporations have played a prominent role in this global trend. The UK alone accounted for 31% of worldwide cross-border M&As by the end of year 2000, making her the largest acquiring country globally (UNCTAD, 2000). Agyei-Boapeah (2014) shows that a salient feature of recent M&As in the UK is the growing importance of cross-border acquisitions. He reports that during the period 2002-2011, while the value of domestic acquisitions by UK firms declined by about 70% (i.e. from £25.2 billion in 2002 to £7.6 billion in 2011), there was a surge in the value of cross-border acquisitions from £26.6 billion in 2002 to £50.8 billion in 2011, representing an increase of over 90%.

These developments perhaps explain why cross-border acquisitions, particularly those undertaken by UK acquiring firms have received more attention in the finance literature over recent years (e.g. Conn, Cosh, Guest, and Hughes, 2005; and Stiebale and Trax, 2011). These studies, however, often focus on the performance impact of cross-border acquisitions without considering how these international deals may impact the acquirers' financial structures. This is an important gap in the existing literature because Nurnberg (2006) notes that business acquisitions (including cross-border acquisitions) may directly impact firms' financing activities shown on the Statement of Cash Flows. This paper bridges this gap by empirically examining the impact of cross-border acquisitions on acquiring firms' financial leverage (i.e. gearing ratio), as well as analysing the moderating impact of two variables (i.e. the status of the target country and the foreign market experience of the acquiring firm) on the link between cross-border acquisitions and leverage. Figure 1 below presents the conceptual framework for this study.

[INSERT FIGURE 1]

Based on the literature about foreign direct investment and international business, this paper establishes a link between cross-border acquisitions and corporate financial leverage. Specifically, the paper argues that since cross-border acquisitions represent an important mode of foreign market entry, they may expose the acquiring firm to some opportunities/costs that could either enhance or impede

the acquiring firms' borrowing ability. For example, cross-border acquisitions may enable acquiring firms to expand into new geographic locations and to obtain strategic assets, advanced technologies, and new skills that could ultimately result in competitive advantages to the firm (see Nocke and Yeaple, 2007; Seth, Song, and Pettit, 2002; Shimizu, Hitt, Vaidyanath, and Pisano, 2004; Rossi and Volpin, 2004). Such competitive advantages could reduce the acquiring firm's bankruptcy risk, which could, in turn, enhance their borrowing ability and debt usage. However, when firms expand into new foreign markets, they may face additional risks/costs such as political and exchange rate risks and higher agency costs which could make it difficult for them to obtain debt capital (see Burgman, 1996; Reeb, Kwok, and Baek, 1998; Kwok and Reeb, 2000; Mittoo and Zhang, 2008). Ultimately, the issue of the impact of cross-border acquisitions on the debt levels of acquiring firms becomes an empirical matter to be settled by empirical research.

The present study relates to, but also differs in a number of ways from existing empirical studies on the link between internationalisation and leverage (e.g. Burgman, 1996; Kwok and Reeb, 2000; Mansi and Reeb, 2002). First, the empirical design utilised in prior studies has been primarily based on the analysis of existing multinational corporations (MNCs) and domestic corporations (DCs). This approach relies on segmental data in databases to construct proxy variables for firms' degree of internationalisation. However, some concerns have been raised about the validity of the internationalisation proxies that are constructed from segmental data (see Sullivan, 1994; Ramaswamy *et al*., 1996; Chen *et al*., 1997). For instance, the definition of a geographic segment adopted by both previous and current accounting standards on segment reporting (see IAS 14, paragraph 35 and IFRS 8, paragraph 13) could imply that international firms with foreign assets or sales of less than 10% may be classified as domestic firms. Unlike prior studies, the present article investigates the relationship between internationalisation and leverage without reference to segmental data. Specifically, the internationalisation-leverage link is examined by directly modelling the change in financial leverage following a corporate action (cross-border acquisitions) that increases the firms' international activities. Using such an approach, this paper circumvents the issue of which internationalisation proxies to use and their associated limitations.

Second, the present investigation differs from the previous studies by focusing on how a *specific mode of entry into foreign markets* (i.e. cross-border acquisitions) may impact firms' leverage. This distinction is important because Shimizu *et al*. (2004) argue that while internationalisation can be achieved in a variety of ways (e.g. cross-border acquisitions, exports, formation of alliances and joint ventures), the risks/costs associated with the equity entry modes (cross-border acquisitions, and greenfield investments) far outweigh those of the non-equity entry modes (e.g. exports, formation of alliances, etc.). Specifically, it is likely that political risks (and thus, bankruptcy risks) and the agency costs of debt (e.g. monitoring cost by lenders) will be greater for firms that become international through the purchase of existing assets/firms in other countries, compared to those international firms that merely export to foreign countries. This is because while exporting firms may have little or no tangible assets in host countries, cross-border acquiring firms do establish a physical presence in host countries, which makes their foreign tangible assets easy targets for expropriation by host governments (Burgman, 1996). In addition, the potential for fraud is greater among foreign subsidiaries because of the large distance between them and their parent, thus, increasing the risk associated with cross-border acquisitions.[1] Within this context, it is plausible for the link between internationalisation and leverage to vary for the various modes of entering foreign markets, since corporate risks and agency costs are important determinants of financial leverage (Castanias, 1983; Jensen and Meckling, 1976).

Despite the differences in the equity and non-equity modes of foreign market entry, empirical studies so far have failed to account for the mode of entry in their analyses, and this perhaps, together with the absence of a valid proxy for internationalisation, partly contributes to the conflicting empirical findings in the literature. For example, Mansi and Reeb (2002) document a positive relationship between internationalisation and leverage whereas Burgman (1996) finds internationalisation to be negatively related to leverage. As a first step towards recognising the potential role of the mode of entry into foreign markets, this paper contributes to the literature by specifically examining the impact of cross-border acquisitions on corporate leverage. Moreover, to date, most of the existing literature on the internationalisation-leverage link has been conducted in the

[1] I am grateful to an anonymous reviewer for suggesting this argument.

US context. The extent to which the explanations offered in the US context hold in other countries remains largely unexplored, and the current paper seeks to fill this gap by conducting an empirical analysis within a UK context where cross-border acquisitions are numerous.

Another important contribution of this study is its test of whether the level of economic development of the target (host) nation influences the impact of cross-border acquisitions on leverage. This line of inquiry is motivated by the notion that some foreign markets may be associated with higher or lower opportunities/challenges than others because the advanced technologies and skills as well as the risks (exchange rate and political) and agency costs of debt are not symmetric across host countries (Kwok and Reeb, 2000; Mittoo and Zhang, 2008). Accordingly, this paper distinguishes between the cross-border acquisitions effect on the leverage of those firms that acquire targets from advanced countries, and those acquiring firms with targets from developing countries. [2]

Finally, the paper considers how the cross-border leverage effect may vary between multinational and domestic corporations that undertake acquisitions. This paper argues that since multinational corporations already have some foreign market experience, they may be in a better position to manage the additional opportunities and/or risks/costs associated with internationalisation (Davidson, 1983). To the best of my knowledge, this is the first study to investigate the moderating or enhancing role of firms' foreign market experience on the internationalisation-leverage link.

The results, based on a sample of 782 acquisitions, suggest that acquiring firms, on average, do experience significant declines in their financial leverage following cross-border acquisitions. However, the negative impact of cross-border acquisitions on leverage is restricted to: (1) acquiring firms that have target firms from developing countries, and (2) acquiring firms without any experience in foreign markets. Collectively, these findings imply that the less stable economic environment prevailing in some host countries and the lack of foreign market experience tend to negatively impact on the borrowing ability of cross-border acquirers.

[2] In this paper, advanced and developing countries are defined according to classifications by the International Monetary Fund (IMF, World Economic Outlook, April, 2011, p.150). However, it should be noted that those countries classified as emerging by the IMF are considered as part of developing countries in this paper. See link below: http://www.imf.org/external/pubs/ft/weo/2011/01/pdf/text.pdf

The remainder of this paper is organised as follows. The next section reviews the literature and specifies the hypotheses of the study. Data and analytical methods are then presented, after which the results are presented and discussed. Finally, conclusions and implications of the study's findings are discussed.

2. Related literature and hypotheses

2.1 Capital structure

Prior to establishing the link between cross-border acquisitions and firms' leverage, the literature on capital structure is briefly reviewed in order to highlight the primary determinants of the amount of debt in a firm's capital structure.

The extant academic literature on capital structure suggests that in an imperfect capital market, the amount of debt in a firm's total capital represents an important means by which value is created for shareholders, and this perhaps explains why various studies have attempted to investigate the determinants of corporate leverage (e.g. Modigliani and Miller, 1963; Jensen and Meckling, 1976; Myers, 1977; Castanias, 1983; Myers and Majluf, 1984; Rajan and Zingales, 1995; Ghosh and Jain, 2000; Agyei-Boapeah, 2014). Most of these studies highlight bankruptcy risks (and its related cost of financial distress), agency costs, and information asymmetry as being among the major factors that influence corporate leverage. For instance, Castanias (1983) reports that industries with high failure rates tend to have lower leverage which suggests that lenders shy away from risky firms and industries. Similarly, various studies document relatively robust evidence that leverage ratios are negatively associated with bankruptcy risks/costs (see Castanias, 1983; Rajan and Zingales, 1995; Uysal, 2011; Agyei-Boapeah, 2014).

Another well-documented determinant of corporate leverage is agency costs of debt (see Jensen and Meckling, 1976; Myers, 1977; Burgman, 1996; Mittoo and Zhang, 2008). Agency cost of debt arises because the conflicts of interest between lenders and shareholders tend to result in sub-optimal investment decisions by the firm which may be detrimental to lenders (Jensen and Meckling, 1976; Myers, 1977). Therefore, lenders need to incur additional costs (e.g. monitoring and bonding costs) in order to protect their interest in the firm. These additional costs (agency costs of debt) generally tend

to lead to lower leverage ratios for firms with higher agency costs (see Myers, 1977; Burgman, 1996; Mittoo and Zhang, 2008).

Finally, Myers (1984) and Myers and Majluf (1984) point out asymmetric information costs as being specific forms of agency costs that influence corporate leverage. They argue that asymmetric information costs arise because managers generally have more information about the value of their firms than investors, thus, investors consider issues of external securities (debt and equity) as a signal that a firm is overvalued. This belief makes investors react negatively to external security issues (including debt issues), thus, increasing the cost of external capital. Therefore, higher levels of information asymmetry between managers and investors may lead to higher costs of external capital (e.g. debt) and lower leverage (Myers and Majluf, 1984; Shyam-Sunder and Myers, 1999).

Taken together, the literature on capital structure suggests that leverage ratios are negatively related to the firms' levels of bankruptcy risks, agency costs, and asymmetric information costs. Based on this conclusion, the next subsection draws a link between cross-border acquisitions and corporate financial leverage by suggesting that cross-border acquisitions (i.e. increasing levels of internationalisation) may increase or decrease these costs of debt, and thus, influence the leverage of acquiring firms.

2.2 The potential link between cross-border acquisitions and leverage

The link between cross-border acquisitions and acquiring firms' financial leverage is primarily based on the suggestion that cross-border acquisitions may increase the firms' levels of international activity. As noted earlier, cross-border acquisitions represent one of the key ways by which firms enter foreign markets (see Nocke and Yeaple, 2008; Seth *et al*., 2002; Shimizu, *et al*., 2004; Rossi and Volpin, 2004). Thus, firms that undertake cross-border acquisitions may be expected to experience a rise in their levels of international operations.

Through cross-border acquisitions, firms can obtain access to existing products that are proven and tested in foreign markets as well as obtain access to an existing network of customers and suppliers (Shimizu *et al*., 2004; Rossi and Volpin, 2004). In addition, cross-border acquisitions offer access to complementary firm-specific assets and capabilities (e.g. skills, knowledge, technology, etc.)

that are non-mobile across borders and markets (Nocke and Yeaple, 2008; Stiebale and Trax, 2011). These benefits can result in competitive advantages (Khallaf, 2012) which may reduce the bankruptcy risk of cross-border acquiring firms. It has also been suggested that international diversification (cross-border acquisitions) may lead to lower earnings volatility as international firms are able to receive cash flows from imperfectly correlated foreign markets, which then lead to a lower cost of borrowing for them (e.g. Hughes *et al.*, 1975; Fatemi, 1984; Reeb *et al.*, 2001). Overall, these arguments suggest that cross-border acquisitions should enhance the borrowing ability of cross-border acquirers by reducing their bankruptcy risks.

However, contrary views have been expressed in the international business literature (see Lee, 1986; Lee and Kwok, 1988; Burgman, 1996; Reeb *et al.*, 1998; Mittoo and Zhang, 2008). Studies from this literature suggest that firms with foreign operations tend to have higher bankruptcy risks as well as higher agency and information asymmetry costs, which in turn, reduce their debt levels. Although these studies are not specifically about cross-border acquisitions, their arguments about general international business may be relevant for cross-border acquisitions. For instance, Reeb *et al*. (1998) argue that compared to DCs, MNCs have higher foreign exchange risk because they are more exposed to foreign exchange fluctuations, which systematically increases the variations in their foreign returns in domestic currency. Burgman (1996) also notes that major political events such as currency blockage or expropriation make MNCs more risky. Furthermore, cross-border acquisitions may be associated with higher agency and information asymmetry costs because overseas targets are more difficult to monitor and to value accurately due to imperfect information (Conn *et al.*, 2005), the language differences, and varying legal and accounting systems that prevail in different countries (Mittoo and Zhang, 2008). Consequently, cross-border acquisitions could result in reductions in the borrowing ability of acquiring firms.

Collectively, the extant literature on foreign direct investment and international business suggests that cross-border acquisitions have the potential to influence the key underlying determinants of financial leverage – *bankruptcy risks, agency and asymmetric information costs* – although there seems to be no consensus on the direction of the impact of these international deals on corporate leverage. Accordingly, the following hypothesis is formulated for testing:

H1: *Cross-border acquisitions lead to increases or decreases in acquirers' financial leverage.*

2.3 The moderating effect of the status of the target country

Since the impact of cross-border acquisitions on financial leverage is primarily due to how the acquisition deals influence firms' bankruptcy risks (via competitive advantage or foreign exchange and political risks) and agency as well as information asymmetry costs, this paper argues that there should be systematic cross-sectional variations among acquiring firms that pursue target firms from developed markets and those acquirers with targets from developing countries. Due to the higher information disclosure, the greater contract enforcements, the superior technology, and the lesser political risks that are likely to be associated with advanced economies (La Porta, Lopez-De-Silanes, Shleifer, and Vishny, 1998; Kwok and Reeb, 2000), it is plausible to expect lower agency and information asymmetry costs and bankruptcy risks when acquisition targets are from advanced countries than when they are from developing countries. On the basis of this argument, Hypothesis 2 is formulated as follows:

H2: *The change in acquiring firm's financial leverage following cross-border acquisitions would differ between acquisition deals involving targets from developed countries and those from developing countries.*

2.4 The moderating effect of foreign market experience

It is widely acknowledged that the benefits of cross-border acquisitions may not be realised when the post-merger processes (e.g. acculturation and integration) are not effectively managed (Conn *et al*., 2005). Therefore, the ability of acquiring firms to manage the post-merger processes may determine whether or not they achieve any competitive advantages and the associated reduction in bankruptcy risks. This paper argues that since an acquiring firm's level of experience in foreign market operations may be related to its ability to manage subsequent cross-border acquisitions, it is likely that there will be important cross-sectional variations between the cross-border leverage effect for firms with experience in foreign market operations (i.e. existing multinational firms) and those without any foreign market experience (i.e. existing domestic firms).

In fact, prior studies suggest that experience in foreign markets is crucial in dealing with the uncertainties associated with international operations (e.g. Johanson and Vahlne, 1977; Davidson, 1980; 1983; Erramilli, 1991). With increasing experience, firms acquire knowledge of foreign markets, which makes them more confident in their ability to correctly estimate risks and return and manage foreign operations (Johanson and Vahlne, 1977; Davidson. 1982). Thus, even if cross-border acquisitions result in increased bankruptcy risks, it is possible that experienced firms may use their prior foreign market knowledge acquired over a number of years to develop and implement effective risk management and control mechanisms to mitigate the increased risks associated with internationalisation. Moreover, it seems plausible that experienced firms will face lower information asymmetry and agency costs because lenders may already have some information about their previous foreign market operations which may reduce the uncertainty about their new foreign market operations. The above discussions lead to the final hypothesis below:

H3: *The change in acquiring firm's financial leverage following cross-border acquisitions would differ between firms with experience in foreign markets (MNCs) and those without any foreign market experience (DCs).*

3. Data and Methods

3.1 Estimation method

In this paper, financial leverage (market leverage) for firm *i* in year *t* is measured as the ratio of total debt to total capital (i.e. sum of total debt and market value of equity) (see Antoniou, Guney, and Paudyal, 2008; Mittoo and Zhang, 2008; Agyei-Boapeah, 2014)[3]. This paper uses market leverage for its analysis because it is forward-looking, more "objective", and often favoured in capital structure research (see Morellec and Zhdanov, 2008, p.578). Moreover, most of the theoretical predictions about capital structure are concerned with the market value of the firm (see Modigliani and Miller, 1963; Myers, 1977), but not the book value of the firm.

[3] For robustness, the book leverage measure is also utilized, though these results are not reported in order to conserve space. The book leverage measure follows the market leverage definition, except that the market value of equity is substituted with the book value of equity. Results based on both measures were qualitatively similar.

The primary objective of this paper is to examine whether a firm's decision to undertake cross-border acquisitions (i.e. increase its level of internationalization) in year *t* has a significant impact on its financial leverage in year *t*+1. To empirically undertake this analysis, one must determine whether the observed *post-acquisition* leverage ratios for cross-border acquirers are significantly higher or lower than what they would have been if these firms had not engaged in cross-border acquisitions. However, the latter outcome is unobservable. A possible analysis would be to compare the leverage ratios of cross-border acquirers with those of non-acquiring firms. The problem with this form of analysis is that firms select themselves into the different groups (acquirers vs. non-acquirers) based on characteristics that might also influence the observed outcome. Within the context of this paper, it may be the case that firms with lower leverage are more likely to engage in acquisitions because they are able to borrow at favourable costs (e.g. Bruner, 1988; Morellec and Zhdanov, 2008). Thus, results based on a comparison between acquirers and non-acquirers are likely to suffer from selection bias.

To minimise this potential selection bias, the current paper selects a control sample of acquirers rather than non-acquirers. Since the primary focus is to investigate the impact of increasing internationalisation (via cross-border acquisitions) on cross-border acquirers' leverage ratios, domestic acquirers are relied upon to serve as a control group. Specifically, the sample firms (to be discussed in section 3.2) that engaged in *domestic acquisitions* during the sample period (i.e. 1982-2009) served as the control sample for the firms that engaged in *cross-border acquisitions* (i.e. the main sample). It is important to note that since the empirical (multivariate) models (to be discussed later) utilised in the current article directly control for firm size and industry, the control firms are not matched by size and/or industry[4].

The goal for using domestic acquirers as a control group is to construct a control group of firms that are also active in the market for corporate control, except that their acquisition activities did not lead to increases in the level of internationalisation. Since firms' foreign operations may increase

[4] The size and industry differences between the main sample (cross-border acquirers) and the control sample (domestic acquirers) and their effect on the leverage of the firms can be dealt with by either (a) constructing a size-and-industry-matched control sample; or (b) directly controlling for firm size and industry in a multivariate framework. The current article chose the latter approach because it has two main advantages: (1) it helps to directly observe/quantify the size and industry effect on leverage; and (2) it increases the explanatory power of the leverage (regression) model.

when they undertake cross-border acquisitions but are likely to remain unchanged in domestic acquisitions[5], the *post-acquisition* leverage of domestic acquirers could provide a reasonable proxy for the expected *post-acquisition* leverage of cross-border acquirers had their decisions not increased their foreign operations. Thus, the results on the cross-border acquisition effect on leverage could be interpreted in relations to firms' actions (acquisitions) which did not increase their foreign operations.

The sample of cross-border acquirers and the control sample of domestic acquirers are then used to implement the difference-in-differences (DID) estimator in a multivariate regression framework. This approach basically compares the difference in the financial leverage for cross-border acquirers with that of domestic acquirers while controlling for the other determinants of capital structure (e.g. firm size, industry, etc.). Specifically, the DID estimation model below, Eq. (1), is the baseline model used for the empirical analyses. The parameters of the model are estimated using the Random-effects Generalised Least Squares (GLS) panel estimation procedure.

$$Leverage_{it} = \beta_1 + \beta_2 CB_i + \beta_3 Post_t + \beta_4 (CB * Post)_{it} + \beta_5 X_{it} + \varepsilon_{it} \qquad \text{Eq. (1)}$$

In Eq. (1) above, β_1 is the intercept, *CB* is the cross-border dummy which is equal to one if the observed firm is a cross-border acquirer, and zero for the control group of firms (domestic acquirers). The *CB* dummy (β_2) is expected to capture the general differences in financial leverage which emanate from the inherent differences between cross-border acquirers and the control firms. It may be the case that there is a systematic difference in the leverage ratios of firms that undertake cross-border acquisitions and the control group of firms. Thus, β_2 should capture the impact of such differences in the two sample groups on leverage.

Post, in Eq. (1) above, is the post-acquisition dummy which is equal to one (zero) if the observation is for the year t+1 (year t-1). This variable (and its parameter estimate, β_3) should capture the general changes in leverage over the *pre*-and *post*-acquisition periods (i.e. from t-1 to t+1). The inclusion of the variable reflects the fact that leverage ratios may change for most firms (whether or

[5] In unreported results, this paper finds that firms' levels of internationalisation (as measured by their foreign assets ratio) significantly increase by about 11 percentage points following cross-border acquisitions. However, there is no statistically significant change in the levels of internationalisation when firms undertake domestic acquisitions. These results are available upon request.

not they engaged in cross-border acquisitions) during some periods due to general economic conditions (e.g. low interest rates). Indeed, acquisitions may be more likely in periods of credit availability and high stock market performance which make it easier for firms to obtain funding for their investments (Uysal, 2011, Agyei-Boapeah, 2014). So, it is possible for firms, in general, to experience changes in their leverage ratios during periods of high acquisition activity. Bruner (1988) and Ghosh and Jain (2000) provide empirical evidence to suggest that corporate leverage, on average, increases following acquisitions. Their findings imply that, at least, some acquirers may borrow in the pre-acquisition period and use the new debt to fund their acquisitions. This then results in higher post-acquisition leverage for acquirers. Therefore, the inclusion of β_3 in Eq. (1) helps to control for the macro-economic conditions (e.g. credit availability) that could induce changes in corporate leverage over the *pre*- and *post*-acquisition periods (i.e. *t*-1 and *t*+1).

The main parameter of interest for the current article is β_4 (i.e. the coefficient for the interaction dummy between *CB* and *Post*) since it represents the average cross-border impact on financial leverage. It (β_4) shows the change in corporate leverage which is solely due to the completion of a cross-border acquisition. It is, therefore, hoped that β_4 reflects the impact on a firm's leverage following a corporate activity which increases its levels of internationalisation. Consequently, a negative (positive) and significant coefficient estimate of β_4 would be consistent with this paper's primary hypothesis (H1), i.e., cross-border acquisitions reduce (increase) acquirers' leverage ratios.

It is important to note that in testing Hypotheses 2 and 3, Eq. (1) is slightly modified by interacting β_4 with dummies for the different types of acquirers that are of interest to this study. Therefore, the empirical analyses contained in the current paper are conducted using five related models. The first model is the baseline model in Eq. (1) above, while the remaining four models are variants of the Eq. (1). Specifically, the five empirical models utilized to address the study's hypotheses are as follows:

I. A model for all acquirers (i.e. the baseline model in Eq. (1) above) (H1)

II. A model for acquirers with targets from developed countries (H2)

III. A model for acquirers with targets from developing countries (H2)

IV. A model for acquirers with prior foreign market experience (H3)

V. A model for acquirers without prior foreign market experience (H3)

In order to reduce the residual variance of the above models, a vector of control variables (*X*) is included in all the five analyses. The choice of these variables was guided by the literature on capital structure (e.g. Rajan and Zingales, 1995; Myers, 1977; Antoniou *et al.*, 2008; Agyei-Boapeah, 2014). First, the ratio of accumulated depreciation to total assets is included to control for non-debt tax shelters since tax motivations do influence debt usage. Second, cash flow volatility is included to control for expected bankruptcy cost. This is defined as the standard deviation of cash flows divided by sales over the past three years. Third, the effect of growth opportunities (and agency costs) is controlled for using market-to-book ratio as a proxy. Firms with higher growth opportunities use less debt in order to gain investment flexibility (Myers, 1977). Fourth, asset tangibility is included to control for collateral since real assets are easier to sell in the event of default. This is measured as the ratio of net property, plant, and equipment scaled by total assets. Fifth, the ratio of earnings before interest, tax, depreciation and amortizations to total assets is included to control for profitability since firms with high profitability tend to rely more (less) on internal funds (debt) (Myers, 1984). Sixth, firm size, defined as the natural log of total asset is included since large firms may find it easier to borrow. In addition, industry and year fixed effects are controlled for. Finally, the regression model contains the error term, ε_{it} .

3.2 Data

In order to examine the link between cross-border acquisitions and financial leverage, all completed (cross-border and domestic) acquisitions from 1982-2009 involving non-financial publicly listed UK acquiring firms were collected.[6] Data on the dates of acquisitions, and acquirer as well as the target firms' home countries are obtained from Thomson Financials' Securities Data Company's (SDC) Merger and Acquisitions database. It was decided to only keep deals for which acquirers' percentage of ownership of targets' equity after the acquisition is at least 50%. This is to ensure that

[6] Consistent with the tradition in capital structure research (e.g. Uysal, 2011; Agyei-Boapeah, 2014), financial firms (e.g. banks, insurance companies, etc.) are excluded from the study because they have special asset compositions and are also subject to stricter government regulations which make them different from other firms.

the sample reflects acquisitions for which the acquirer can significantly influence the combined firm's strategic financial decisions. In addition, acquisitions that are classified as leveraged buy-outs are dropped because these special deals are heavily debt-financed, and could thus, bias the results. There are 1,186 acquisition deals that meet these criteria.

The relevant accounting data[7] for acquiring firms had to be available in Datastream for two years (one year before, and one year after the acquisition). For example, if the effective date of a firm's acquisition is in 2005 (year *t*), then for this deal to be included in the sample, relevant data for the firm had to be available for the years 2004 (*t*-1) and 2006 (*t*+1). This criterion resulted in a substantial reduction of the sample to 782 deals made by 558 UK firms. The final dataset utilised in the empirical analyses is obtained by constructing a 2-period panel dataset for the 782 acquiring firms. For each acquiring firm in year *t*, 2-years of observations are required in order to undertake the empirical analyses (i.e. *t*-1 and *t*+1). Thus, observing these 782 acquiring firms over a 2-year period produces observation units of 1,564 firm-years (i.e. 782 firms x 2 years = 1,564) which are used in the empirical analyses.

[INSERT TABLE 1]

Table 1 presents the breakdown of acquisitions by target country, year of acquisition, and the type of acquirer (MNCs vs. DCs). A cross-border acquisition is defined to include deals in which the target country is different from the UK. Out of the 782 deals, 327 are cross-border and 455 are domestic. However, during the latter years (i.e. 2001-2009), cross-border deals out-numbered the domestic deals (136 vs. 110) which reflects the rising trend in cross-border acquisitions over recent years. Almost 85% (15%) of the cross-border deals are made to developed (developing) countries. Nearly half (46%) of all cross-border deals had US targets. Conn *et al*. (2005) find a similar trend in their sample of UK acquirers. A possible explanation is the common language and traditions shared by the two nations, as well as the similarity in their legal (common law) and financial systems (market-based). Other countries where firms often become acquisition targets of UK companies are Canada, Australia, and

[7] That is, the data to calculate financial leverage and the control variables (e.g. firm size, profitability, risk, etc.) used in the regression model should be available.

South Africa. Again, these countries seem to share a common language and historical ties with the UK.

When the deals are differentiated by the type of acquirer, 43% and 16% of the deals are made by MNCs and DCs, respectively. The remaining 41% had missing geographic segmental data on Datastream; thus, it was not possible to classify them. Firms are classified as MNCs if they have reported non-UK assets on Datastream, and as DCs if they have no foreign assets. In terms of the time period, over 77% of the deals were completed between 1991 and 2009, implying that the study's results are more likely to reflect recent deals.

4. RESULTS AND DISCUSSION

4.1 Descriptive statistics

Table 2 reports the descriptive statistics and correlation matrix for the study variables. The statistics for the leverage ratio (i.e. the study's dependent variable) is computed separately for the *pre*- and *post*-acquisition years (*t*-1 and *t*+1). However, in order to conserve space, the statistics for the remaining variables are based on a pooled observation from the *pre*- and *post-acquisition* years.

According to the data, prior to acquisitions, the average firm in the study's sample has 16% debt in its total capital, but this ratio increases to about 24% immediately after the acquisition. This finding is consistent with prior studies which documented a general rise in leverage ratios subsequent to acquisitions (Bruner, 1988; Ghosh and Jain, 2000). Table 2 also suggests that the correlations between both the *pre*-and *post*-acquisition leverage and the control variables largely have the expected signs. Specifically, the leverage ratios are negatively correlated with risk, market-to-book ratio, and profitability; but positively correlated with firm size, and asset tangibility. Again, these relationships are in line with extant capital structure literature (see Rajan and Zingales, 1995; Antoniou *et al.*, 2008; Agyei-Boapeah, 2014).

[INSERT TABLE 2]

The next section utilises a multivariate regression framework to investigate the impact of cross-border acquisitions (increasing levels of internationalisation) on the financial leverage of acquiring firms (H1) and the moderating effect on this relationship by the status of the target country (H2) and the foreign market experience of the acquirer (H3).

4.2 The link between cross-border acquisitions and leverage (H1)

Table 3 provides results that are based on the difference-in-differences (DID) estimation (in Eq. (1)) and highlights the cross-border impact on leverage, β_4, for all the five empirical models. Models I tests hypothesis 1 which posits that there should be a change in acquirers' leverage following cross-border acquisitions (increasing internationalisation). The results indicate that the impact of cross-border acquisitions on acquiring firms' debt usage is negative and weakly

significant (β_4 =-0.018, *p*=0.100). Thus, the evidence (though mild) suggests that cross-border acquisitions, on average, result in reductions in acquirers' leverage, and seems to support the notion that increased levels of internationalisation leads to higher bankruptcy risks as well as agency and information asymmetry costs for international firms. This finding is in line with prior US studies reporting a negative association between debt ratios and internationalisation (e.g. Lee, 1986; Burgman, 1996).

[INSERT TABLE 3]

4.3 The moderating effect of the status of the target country (H2)

Hypothesis 2 predicts that the change in acquirers' financial leverage following cross-border acquisitions should differ between acquisitions involving target firms from developed countries and those from developing countries. This hypothesis is tested by constructing dummy variables for deals involving targets from developed countries (e.g. US, Germany, France, etc.), on the one hand, and targets from developing countries (e.g. South Africa, India, Columbia, etc.), on the other hand (see Table 1 for the full list of countries). The dummy variables are then interacted with the average cross-border effect (β_4) in Eq. (1). Thus, the reported values of β_4 in Models II and III of Table 3 reflect the interaction effect of the level of economic stability of the target country.

According to the results in Model II, β_4 is negative but statistically insignificant (β_4 =0.-003, *p*=0.775), suggesting that cross-border acquisitions by UK firms into developed countries have no significant impact on their financial leverage. However, as depicted in Model III, there is a negative and statistically significant impact of cross-border acquisitions on the leverage of acquiring firms that diversify into developing countries (β_4 =-0.049, *p*=0.012). These results support Hypothesis 2, and are generally consistent with the view that the less stable economic environments (e.g. higher exchange rate and political risks, less developed IT infrastructure and capital markets) that generally prevail in developing countries could make international firms that locate there less attractive to lenders (Kwok and Reeb, 2000).

4.4 The moderating effect of the acquirers' foreign market experience (H3)

Results for the test of the final hypothesis are shown in Models IV and V of Table 3. Hypothesis 3 postulates that there is an asymmetric cross-border impact on the leverage of acquirers that have foreign market experience (i.e. multinational corporations, MNCs) and those without any foreign market experience (i.e. domestic corporations, DCs). In conducting this test, two separate dummies for MNCs and DCs are created, and these dummies are interacted with the average cross-border effect (β_4) in Eq. (1).

The results indicate that while cross-border acquisitions have a negative but statistically insignificant impact on the leverage of MNCs (in Model IV, β_4 =-0.014, p=0.216), they significantly reduce the leverage of DCs (in Model V, β_4 =-0.075, p=0.007).[8] These results support Hypothesis 3, and imply that MNCs rely on their foreign markets experience to reduce part of the additional complexities (risks and costs) associated with international business (Johanson and Vahlne, 1977; Davidson. 1982). Thus, lenders do not shy away from supplying debt capital to MNCs when they increase their levels of international activity. The results also suggest that the negative association between firms' levels of international activity and leverage ratios may be influenced by those less experienced, new foreign markets entrants that do not have the know-how in managing the increased risks/costs associated with foreign market operations.

2.5 Other variables

This section turns attention to the discussion of the other explanatory variables in the regression models. First, it seems that, besides the cross-border acquisition event (i.e. increasing

[8] As noted earlier, the definitions for MNCs and DCs are based on geographic segmental data. Since international accounting standards on segment reporting changed from IAS 14 to IFRS 8 with effect from 1st January, 2009, further tests were conducted to determine whether this regulatory change influenced the reported findings for H3. This was done by eliminating firms in year 2009 and repeating the empirical tests for only those sample firms that reported under IAS 14 (i.e. firms in 1982-2008). Also, in order not to include early adopters of IFRS 8 in the robustness tests, further tests that were restricted to sample firms in 1982-2007 were conducted. The cut-off date for this test was 2007 because IFRS 8 was issued on 30th November, 2006, and it is assumed that firms will need some time to study the new standard as well as alter their accounting systems to accommodate the standard. The results for both robustness tests (1982-2008 sample and 1982-2007 sample) were qualitative similar to those based on the full sample (1982-2009) that are reported in Models IV and V of Table 3. Thus, the results and conclusions of the current paper are robust to the change in the accounting regulation on segment reporting. To conserve space, the results for these robustness tests are not reported but are available upon request.

levels of internationalisation), those firms that engaged in cross-border acquisitions generally had lower leverage ratios relative to their counterparts that engaged in domestic acquisitions. This is because, as depicted in Table 3, the parameters for the cross-border dummies, β_2 , are negative and mostly statistically significant. This may be due to the fact that cross-border acquisitions, on average, are larger than domestic acquisitions (see Agyei-Boapeah, 2014), thus, cross-border acquirers require more debt capacity to be able to complete these acquisitions.

Second, β_3 (i.e. the parameter estimate for *post*-acquisition period) is positive and statistically significant throughout the models. This implies that acquisitions generally occur in periods of credit availability in the macro-economy which then leads to increased borrowing to undertake those investments. Thus, subsequent to acquisitions, firms on average, experience increases in their leverage ratios. This is consistent with the findings in Ghosh and Jain (2000) and Bruner (1988).

Furthermore, as in prior studies (e.g. Mittoo and Zhang, 2008; Antoniou et al., 2008; Uysal, 2011; Agyei-Boapeah, 2014), debt usage is negatively and significantly related to cash flow volatility, growth opportunities, and profitability. Moreover, there is an expected positive and significant relationship between leverage and asset tangibility and firm size. However, the estimated co-efficient for non-debt tax shields was not significant, though it had the expected negative sign.

Finally, the parameter estimates for some of the dummies for industry and year fixed effects were significant. For example, in the baseline model (Model 1), four of the year effects (for 1988, 1993, 1999, and 2007) were statistically significant at conventional levels. Interestingly, these periods seem to coincide with some of the periods with the lowest Bank of England interest rate.[9] Specifically, average bank rates were lowest in 1987 and 1988 during the period 1980-1989. Similarly, between 1990-1999, the years with the lowest bank rate were 1993 and 1999. Thus, it seems that most of the years with statistically significant year effects had low levels of interest rate which could indicate capital availability in the macro-economy, which, in turn, led to increased

[9] See link: http://www.bankofengland.co.uk/boeapps/iadb/repo.asp

acquisition activities. The results for the industry and year fixed effects are not reported in order to conserve space. They are, however, available upon request.

5. Conclusion and implications

Using a dataset of UK non-financial publicly listed firms, this paper provides new empirical insights into the link between cross-border acquisitions and financial leverage. Drawing on the international business literature and a sample of cross-border and domestic acquisitions, the present paper examines how the decision by a firm to increase its international operations may impact its financial leverage in the context of a country with rising cross-border acquisitions. The findings indicate that relative to domestic acquisitions, cross-border acquisitions (increasing levels of internationalisation), on average, result in declines (weakly significant) in acquiring firms' debt usage. However, the negative and significant cross-border impact on corporate leverage is primarily associated with acquirers that expand their operations into less developed economies, and those that do not have previous experience in foreign market operations (i.e. domestic corporations that become new entrants into foreign markets).

The study's results have several important implications on both corporate theory and practice. First, the decline in the debt levels of cross-border acquirers suggests that lenders perceive increasing levels of internationalisation to be more risky and costly, thus, they are less willing to provide debt capital to firms that diversify internationally via mergers and acquisitions. Another plausible interpretation is that managers themselves perceive internationalisation strategy to be risky, and therefore attempt to limit corporate risk by avoiding debt financing. Both implications are inconsistent with the traditional view that international diversification reduces corporate risk because it offers an opportunity for the firm to diversify its cash flows from imperfectly correlated foreign markets (see Fatemi, 1984). Rather, the results support the view that international diversification is associated with higher risks and agency and information asymmetry costs (e.g. Burgman, 1996; Reeb *et al.*, 1998). It is also possible that increasing levels of internationalisation is associated with both benefits and costs; however, the costs outweigh the benefits. Hence, the net effect of conducting business in a global environment (i.e. internationalisation) is a reduction in corporate debt usage.

Second, the study's findings imply that the increased complexities (risks and costs) associated with internationalisation is not symmetric for all cross-border deals and for all acquiring firms. It appears that the increased risks/costs of internationalisation is present only for those firms that choose to enter developing and less stable foreign markets, consistent with Kwok and Reeb (2000). Specifically, since leverage ratios do not significantly reduce following acquisitions with target firms from developed countries, it seems international firms that locate in developed countries do not face the general borrowing difficulties associated with internationalisation. However, the current article's findings imply that lenders may demand more compensation from corporate borrowers that operate in less stable global environments, which results in lower debt ratios for such firms. Collectively, it appears that the cost of doing business in a global context, in terms of debt usage, is asymmetrically higher in developing foreign markets than in developed foreign markets.

Finally, the paper's findings suggest that a firm's experience in foreign markets is crucial in managing the increased risks/costs associated with internationalisation. Lenders appear to be more willing to lend to international firms that increase their international operations than domestic firms that are new to foreign business. A more direct research approach to this issue is recommended. In particular, future research can employ corporate bond data to examine lenders' behaviour towards firms with or without foreign market experience. Another promising area for research is how the other foreign market entry modes (e.g. greenfield investments, joint ventures, exporting, etc.) may impact corporate risks and leverage.

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Figure 1: Conceptual Framework

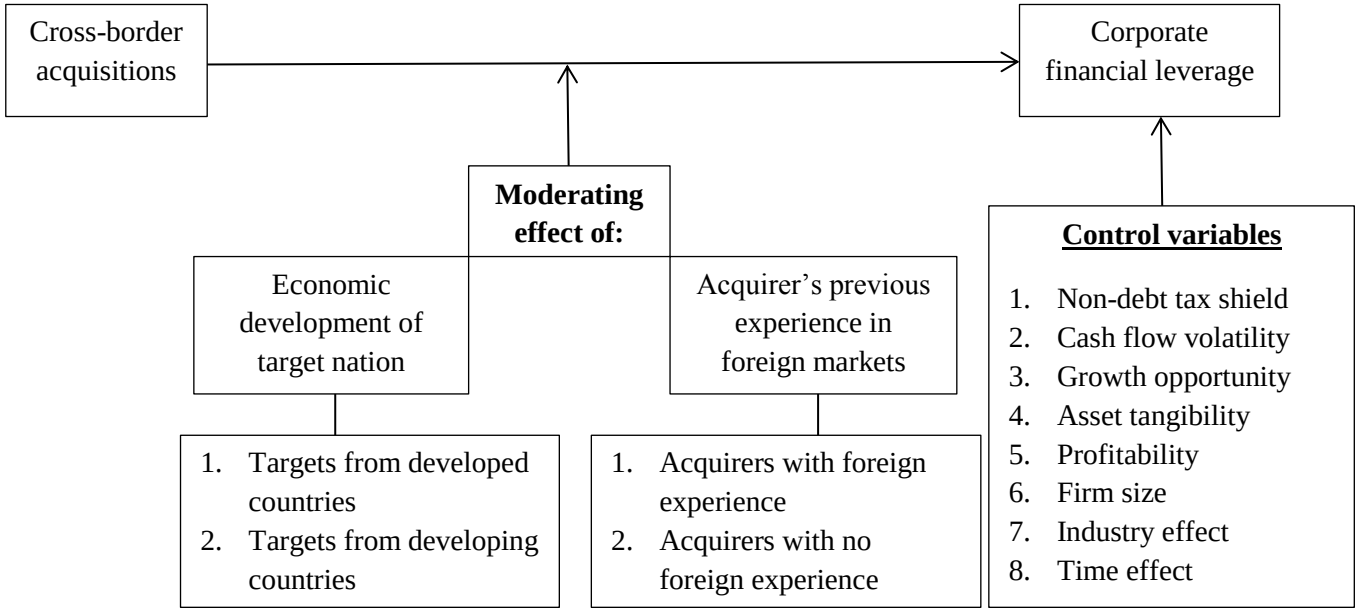

Table 1: Domestic and cross-border acquisitions by UK firms during 1982-2009

Number of deals by target countries, type of acquiring firm, and year of acquisition

Type of acquisition / Target country	All	Type of firm		Year of acquisition		
		MNC	DC	1982-1990	1991-2000	2001-2009
Domestic deals						
UK	455	142	109	105	240	110
Cross-border deals						
Advanced countries						
Australia	20	11	1	2	5	13
Austria	1	1	0	0	0	1
Belgium	2	1	0	0	2	0
Canada	32	16	4	8	9	15
Denmark	1	0	0	1	0	0
Finland	4	1	0	1	2	1
France	13	10	0	0	8	5
Germany	10	7	0	2	6	2
Greece	4	3	1	0	0	4

Ireland	2	0	0	0	2	0
Japan	6	6	0	0	1	5
Netherlands	10	6	0	2	5	3
New Zealand	2	2	0	0	1	1
Norway	4	2	1	0	3	1
Portugal	2	2	0	0	0	2
Spain	7	6	0	2	1	4
Sweden	9	7	0	0	6	3
United States	150	71	5	51	58	41
Developing countries						
Argentina	1	1	0	0	0	1
Bolivia	1	1	0	0	0	1
Brazil	1	1	0	0	0	1
Chile	1	1	0	0	1	0
Columbia	4	4	0	0	0	4
Ecuador	2	0	0	0	0	2
Hong Kong	2	0	0	2	0	0

Hungary	1	0	1	0	1	0
India	6	6	0	0	0	6
Indonesia	2	2	0	0	0	2
Isle of Man	1	1	0	0	0	1
Israel	1	1	0	0	0	1
Malaysia	1	1	0	0	0	1
Nigeria	1	1	0	0	1	0
Peru	4	4	0	0	0	4
Philippines	3	3	0	0	3	0
South Africa	15	12	2	0	5	10
Thailand	1	0	1	0	0	1
Total	**782**	**333**	**125**	**176**	**360**	**246**

This table summarises the sample of completed acquisitions made by publicly listed non-financial firms from the UK during 1982-2009. A cross-border (domestic) acquisition is one with a target firm from outside the UK (within the UK). Grouping of countries into developed and developing is based on IMF's classification. MNCs (DCs) have (have no) reported values of foreign assets on Datastream.

Table 2: Descriptive statistics and correlation matrix

No.	Variables	Mean	Std. dev.	Min.	Max.	1	2	3	4	5	6	7
1	Financial leverage *t*-1	0.16	0.14	0.00	0.81							
2	Financial leverage *t*+1	0.24	0.18	0.00	0.98	0.672						
3	Bankruptcy risk	0.06	0.59	0.00	20.78	-0.276	-0.246					
4	Growth opportunities	3.49	5.29	0.00	97.60	-0.290	-0.217	0.009				
5	Firm size	13.15	2.22	6.03	18.96	0.347	0.180	-0.008	-0.039			
6	Tangible asset ratio	0.33	0.23	0.00	0.96	0.362	0.284	0.000	-0.092	-0.009		
7	Profitability	0.13	0.12	-0.72	0.66	-0.076	-0.019	-0.090	0.149	-0.031	0.125	
8	Non-debt tax shelters	0.18	0.14	0.00	0.96	0.198	0.142	-0.034	0.027	-0.031	0.386	0.222

This table summarises the descriptive statistics and the correlation matrix for the study's sample. All the statistics (except for financial leverage) are based on pooled observations of data on the acquiring firms for the years immediately before and after (*t*-1 and *t*+1) the effective year of the acquisition (*t*).

Table 3: The average impact of cross-border acquisitions on the financial leverage of acquiring firms

Models	**Dependent variable: Leverage (Debt to capital ratio)**				
	I	**II**	**III**	**IV**	**V**
	All firms	**Target country**		**Acquirer type**	
Explanatory variables		**Developed**	**Developing**	**MNC**	**DC**
Cross-border effect (β_4)	**-0.018***	**-0.003**	**-0.049*****	**-0.014**	**-0.075*****
	(0.100)	*(0.775)*	*(0.012)*	*(0.216)*	*(0.007)*
Cross-border dummy (β_2)	-0.014	-0.022**	-0.020**	-0.020**	-0.021**
	(0.164)	*(0.037)*	*(0.043)*	*(0.050)*	*(0.037)*
Post-acquisition year dummy (β_3)	0.065***	0.058***	0.060***	0.061***	0.059***
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	*(0.000)*
Non-debt tax shelter	-0.002	-0.001	-0.001	-0.001	-0.001
	(0.958)	*(0.979)*	*(0.973)*	*(0.984)*	*(0.989)*
Bankruptcy risk	-0.011***	-0.011***	-0.011***	-0.011***	-0.011***
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	*(0.000)*
Growth opportunities	-0.002*	-0.001*	-0.001*	-0.001*	-0.001*

	(0.054)	*(0.065)*	*(0.066)*	*(0.059)*	*(0.062)*
Asset tangibility	0.194***	0.195***	0.197***	0.193***	0.196***
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	*(0.000)*
Profitability	-0.310***	-0.310***	-0.312***	-0.310***	-0.314***
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	*(0.000)*
Firm size	0.017***	0.018***	0.017***	0.018***	0.017***
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	*(0.000)*
Industry dummies	Yes	Yes	Yes	Yes	Yes
	..	..	..	..	..
Year dummies	Yes	Yes	Yes	Yes	Yes
	..	..	..	..	..
Intercept (β_1)	0.053	-0.140***	-0.143***	-0.146***	-0.127**
	(0.294)	*(0.007)*	*(0.005)*	*(0.005)*	*(0.020)*
Regression statistics					
Number of observations	1474	1474	1474	1474	1474
Number of acquiring firms	782	782	782	782	782

Wald Chi-squared statistic	3101.96	3113.66	3206.84	3117.89	3142.50
R-squared: within	0.265	0.262	0.266	0.263	0.262
between	0.382	0.382	0.384	0.382	0.387
overall	0.353	0.352	0.355	0.352	0.355

This table presents results for the average cross-border impact on acquiring firms' financial leverage. The dependent variable in all models is market leverage. Classification of the target firms' countries as advanced and developing is based on an IMF report. MNCs have non-zero pre-acquisition reported values of foreign assets on Datastream. DCs have zero reported foreign asset values in the pre-acquisition period on Datastream. All specifications include year dummies and industry dummies. Figures in parenthesis are *p*-values. The standard errors are allowed to cluster by firm. ***, **, and * denote that the coefficient is statistically significant at 1%, 5% and 10%, respectively.