

Easing Financing and M&A Investment Constraints: The Role of Corporate Industrial Diversification

Henry Agyei-Boapeah

*Accounting & Finance Group, The York Management School, University of York
Freboys Lane, York, YO10 5GD, UK*

E-mail: Henry.Agyei-Boapeah@york.ac.uk

This article examines how corporate industrial diversification could ease, or even eliminate firms' financing and investment constraints. Drawing from the trade-off theory of capital structure, the paper argues and finds that overleveraged firms do face significant investment constraints in the form of a reduced ability to initiate and complete M&As. Furthermore, the paper shows that the financing and investment constraints are reduced when firms undertake diversifying acquisitions compared to when they pursue related acquisitions. Overall, the findings improve our understanding of how the perceived risks/benefits associated with planned investments do influence ex-ante corporate financing/investment constraints.

Key Words: Corporate industrial diversification; Leverage deficit; Overleverage; Financing constraint; M&As.

JEL Classification Numbers: G32, G34.

1. INTRODUCTION

The finance literature pays considerable attention to the link between corporate diversification strategy and leverage (see Lewellen, 1971; Mansi and Reeb, 2002; Hann, Ogneva, and Ozbas, 2013). In theory, corporate diversification may enhance acquirers' ability to raise debt capital because diversification should reduce the volatility of firms' earnings (see Lewellen, 1971). However, the empirical evidence in this area is mixed (see Reeb, Kwok, and Baek, 1998; Mattoo and Zhang, 2008). This paper adds to the literature by proposing and testing hypotheses regarding the significance of corporate industrial diversification in determining the relationship between the probability of undertaking an acquisition and leverage. The existing empirical literature on the link between leverage and corporate diversification is primarily based upon cross-sectional variations among di-

versified and focused firms (see e.g. Mansi and Reeb, 2002; Singhal and Zhu, 2013). This approach relies on segmental data to measure the extent of diversification, and has been the subject of recent criticism (see Agyei-Boapeah, 2015; Hyland and Diltz, 2002). For instance, Hyland and Diltz (2002) argue that many changes in the number of reported segments do not necessarily represent an increase or decrease in the level of diversification. Thus, Agyei-Boapeah (2015) argues that the mergers and acquisitions (M&As) environment offers the unique setting for corporate diversification studies since some types of acquisitions do increase the firm's level of diversification. Accordingly, this paper examines the link between leverage and diversification based upon M&A data that may actually result in changes in the extent of corporate diversification. Specifically, the empirical analysis adopted in this article is based on the link between the probability of undertaking diversifying and non-diversifying acquisitions and firms' ex-ante borrowing ability.

The current article extends the work of Harford, Klasa and Walcott (2009) and Uysal (2011) who show that firms' deviations from their target leverage (i.e. leverage deficit) reduce the probability of undertaking debt- and cash-financed acquisitions. However, an important gap in these studies is the lack of distinction between diversifying and non-diversifying acquisitions. This paper fills this gap. The empirical analysis which is based on a sample of 10,951 acquisitions completed by British firms during 1997-2011 suggests that a firm's leverage deficit in year t is, on average, associated with a 12.7% lower probability of undertaking an acquisition in future (i.e. the next 5 years, $t + 5$). Throughout this paper, the term "investment constraint" is used to describe this reduced ability to undertake acquisitions which is associated with firms' leverage deficit (i.e. difference between actual and target leverage). The paper also provides evidence to suggest that corporate industrial diversification eliminates, or at least, reduces the investment constraints faced by overleveraged firms.

These findings have at least two important implications for both theory and practice in corporate policy. First, the results provide support for the relevance of the target leverage ratio and the trade-off theory of capital structure by suggesting that ignoring the target leverage may hinder firms' ability to undertake some investment projects. Second, the findings imply that overleveraged firm have better prospects of successfully completing investments (M&As) when they select acquisition deals that have the potential to diversify their cash flows across other industries.

2. RELEVANT LITERATURE AND HYPOTHESES

2.1. Financing and investment constraints

Recent research links the financing and investment constraints faced by firms to their deviations from the target leverage ratio. The trade-off theory of capital structure predicts that firms should maintain target leverage ratios because deviations from the target leverage ratios (i.e. leverage deficits) are costly (see, e.g. Byoun, 2008; Uysal, 2011). It can be argued that when firms keep their leverage levels close to the target level, investors would consider such firms to be better performers since Myers (1977) describes the target leverage ratio as the level of leverage that maximizes the market value of the firm. Thus, investors may be unwillingly to lend to firms that substantially deviate from this target leverage since such firms may be deemed as too risky. As noted by Kayhan and Titman (2007), firms with leverage deficit (i.e. overleveraged firms — those that go beyond the target leverage) do face significant debt financing constraints since they face a higher bankruptcy risk. Uysal (2011) directly links the debt financing constraints faced by firms with leverage deficits to their investment activities. Based on his sample of US domestic acquisitions from 1990-2007, he finds that firms with leverage deficits exhibit a lower probability of undertaking an acquisition. He concludes that leverage deficit limits the ability of firms to raise debt capital, which, in turn, constrains them from bidding aggressively and successfully for acquisition targets.

Collectively, the literature suggests that investors may be reluctant to provide debt capital to firms with leverage deficits. This may create debt financing constraints for such firms and subsequently affect their investment activities. Given that over 70% of all acquisitions that require external funds are financed with new debt issues (see Martynova and Renneboog, 2009), the debt financing and investment constraints associated with leverage deficit are likely to be particularly severe for acquisition transactions (see Uysal, 2011). According, the first hypothesis (H1) is proposed for testing.

H1: Leverage deficit is negatively related to the probability of undertaking an acquisition.

2.2. The moderating role of industrial diversification

In this section, I argue that the negative relationship between leverage deficit and acquisition likelihood may be eliminated (or reduced) for diversifying acquisitions, but not for related acquisitions. Lewellen (1971) posits that M&As, especially diversifying mergers, create a combined entity that has less volatile cash flows compared to the pre-merger firm. This reduced volatility, he notes, is due to the co-insurance effect that may exist when the cash flows of acquirers and target firms are less than perfectly positively correlated. The implication is that the enhanced stability in cash flow (i.e.

reduced default risk) due to the co-insurance effect should translate into debt financing advantages for diversified firms. The empirical literature provides some evidence for the prediction of lower default risk and higher borrowing ability associated with industrial diversification. For instance, Singhal and Zhu (2013) find that diversification reduces the probability of a firm filing for bankruptcy, while Hann et al. (2013) show that industrial diversification reduces firms' cost of capital by reducing their systematic risk. In sum, industrially diversified firm may be more attractive to suppliers of debt capital than their focused counterparts.

Since investors tend to anticipate the benefits of diversification and react accordingly at the announcement of M&As (see Ghosh and Jain, 2000), acquiring firms may not need to wait until the consummation of acquisition deals in order to realise the benefits of lower default risk and lower cost of capital. It is probable that those benefits would be realised in the pre-merger years when a firm proposes and commits to undertake a diversifying acquisition. Therefore, the ex-ante debt financing constraints faced by firms with leverage deficits may be lessened, if not completely removed when such firms propose to undertake investments that have the tendency to reduce corporate risks and improve corporate debt capacity. Consequently, the final hypothesis (H2) is proposed for testing:

H2: The negative link between leverage deficit and the probability of undertaking acquisitions is less pronounced in diversifying acquisitions than in related acquisitions.

3. DATA, DEFINITION OF KEY VARIABLES AND SUBSAMPLES

3.1. Data

To examine the link between the probability of making acquisitions and leverage deficit, I follow a two-step procedure, as in Uysal (2011). In the first step, I estimate the leverage deficits for firms in year t using cross-sectional regressions as in Kayhan and Titman (2007). In the second step, I examine whether the leverage deficit of a firm in year t affects its probability of undertaking acquisitions (diversifying vs. non-diversifying) in the following five years (i.e. from year $t + 1$ to year $t + 5$).

I obtained the study's data from two publicly available databases. The first dataset is the financial and accounting data for all publicly listed British firms for the period 1996-2006 from Datastream. The pre-1996 firms were excluded because they had several missing data on Datastream (e.g. R&D expenses), making it impossible to compute important variables for the empirical analyses. The cut-off year was chosen because of the requirement to observe the M&A activities of firms for the next 5 years. For example, for firms in 2006, I needed to observe their acquisitions from

years 2007 till 2011.¹ Since leverage deficit is a key variable of the study, I only keep those sample firms for which there is available data required to calculate leverage deficit. Following the extant corporate finance literature (e.g. Kayhan and Titman, 2007; Mittoo and Zhang, 2008), I also exclude financial firms and firms in the regulated utilities industries. The final sample consists of 11,206 firm-year observations for 1,993 firms. In order to relate the future M&A activities of each firm-year in the sample to its leverage deficit, I also obtain data on all completed M&As by the sample firms during 1997-2011 from Thomson ONE Banker M&A database.

Over half (52%) of the firm-years in the sample had made at least one acquisition during the period their acquisitions were observed. These firm-years are classified as acquirers, while the remaining 48% of the firm-years in the sample were classified as non-acquirers. In terms of the types of acquisitions, over 45% of all completed deals are purely cash-financed whereas only about 5% of the deals are purely equity-financed. The remaining half is either financed by a mixture of cash and equity or by some other means. Since most cash-financed deals are financed with external debt (see Harford et al., 2009), these statistics suggest the importance of leverage deficit in financing acquisitions. The total number of completed M&As are roughly evenly split between related (51%) and diversifying deals (49%). We define acquisitions as diversifying (related) when the acquirer and the target firm have different (the same) 2-digit SIC codes. In terms of the size of the transactions, the average value of M&As completed by the sample firms was around £71 million, with a typical related acquisition being over twice the size of a typical diversifying acquisition (£100 million vs. £38 million). The difference is statistically significant.

3.2. Definition of leverage deficit and constrained firms

A crucial variable in the empirical analysis is leverage deficit. Following prior studies (e.g. Kayhan and Titman, 2007; and Uysal, 2011), I define this variable as the difference between a firm's actual leverage ratio and its target leverage ratio. Thus, positive values denote overleveraging while negative values imply underleveraging. Based on the estimated leverage deficit variable, I divide the sample firms into quartiles. The fourth (first) quartile firms are classified as extremely overleveraged (extremely underleveraged) and are considered to be at high risk of facing financial and investment constraints, since they are far away from the target leverage ratio. In contrast, the third (second) quartile firms are classified as moderately overleveraged (moderately underleveraged) and are deemed not to face substantial risk of financial and investment constraints since they are

¹As at the time of data collection (in early 2012), it was only possible to observe acquisitions up to 2011 and this influenced the cut-off point of the main sample (British firms) to be set at 2006.

relatively closer to the target leverage levels. Therefore, when I come to examine the link between leverage deficit and acquisition probability, the unconstrained firms (i.e. Q2 and Q3 firms) are used as benchmarks against which to measure the acquisition probability of the constrained firms (Q1 and Q4 firms).

It is important to note that the extremely underleveraged (Q1) firms may not be financially constrained, as suggested above, since underleveraging could be representative of the presence of unused/spare debt capacity (Ghosh and Jain, 2000). However, with the advantages that debt financing brings, it may seem perverse for profit-maximizing firms to systematically remain extremely underleveraged. It is plausible that such extremely underleveraged firms may be those firms that seem undesirable to suppliers of debt capital, and are thus financially constrained. Fortunately, the empirical procedures adopted in the current article allow us to test whether extreme underleveraging represents the presence of unused debt capacity or financial constraint. Specifically, a positive (negative) link between extreme underleveraging and acquisition likelihood may suggest the presence of unused debt capacity (financial constraint).

3.3. Estimation of the target leverage ratio

As noted above, defining leverage deficit involves estimating firms' actual and target leverage ratios. While the actual leverage ratio can be readily computed from the publicly available financial data, the target leverage ratio is unobservable and needs to be estimated. Based on the tradition in this field of research (see Harford et al., 2009; Uysal, 2011), I estimate the target leverage ratio of a firm by its fitted value of a market leverage regression. In specifying the regression equation, I utilised the determinants of capital structure documented in prior studies (e.g. Rajan and Zingales, 1995). Specifically, the explanatory variables included in the target leverage ratio are non-debt tax shelter, growth opportunities, asset tangibility, bankruptcy cost, profitability, research and development (R&D) expense ratio, missing R&D dummy, firm size, stock return, past levels of market leverage, and 13 dummy variables to capture the industry fixed-effect.

4. EMPIRICAL TESTS AND RESULTS

4.1. The univariate tests

The first test investigates whether leverage deficit (particularly extreme overleveraging) constrains firms from undertaking future acquisitions (H1). This test is conducted by comparing the M&A activities using the acquisition rates for the subsamples of constrained (Q1 and Q4) and unconstrained (Q2 and Q3) firms. For each subsample, the acquisition rate is defined as the number of acquirers divided by the total number of firms in that

subsample. The differences between the acquisition rates for the relevant subsamples are then tested for statistical significance using the two-sample equality of proportion tests. Table 1 presents the results which generally support the assertion that substantial deviations from target leverage ratios are associated with a reduced probability of undertaking acquisitions (H1). In Column (a) of Table 1, for example, the observed acquisition rate is lowest among the constrained (Q1 and Q4) firms (i.e. 13.0% and 11.0%). As expected, unconstrained (Q2 and Q3) firms seem to be more active in the market for corporate control, having acquisition rates of approximately 14%. The differences between the acquisition rates for constrained and unconstrained firms are statistically significant at 1% level.

TABLE 1.

The proportion of acquisitions across the main subsamples and the acquisition types

No.	Sample/subsamples	(a)	(b)	(c)
		H1	Industrial diversification (H2)	
		All deals	Diversifying deals	Related deals
1	Ratio of extremely underleveraged acquirers (Q1)	0.130	0.063	0.060
2	Ratio of moderately underleveraged acquirers (Q2)	0.139	0.067	0.067
3	Ratio of moderately overleveraged acquirers (Q3)	0.143	0.067	0.067
4	Ratio of extremely overleveraged acquirers (Q4)	0.110	0.053	0.048
5	Difference (1 - 4)	0.020 ^a	0.010 ^a	0.012 ^a
6	Difference (2 - 4)	0.029 ^a	0.014 ^a	0.019 ^a
7	Difference (3 - 4)	0.033 ^a	0.014 ^a	0.018 ^a

Q1 firms have large negative leverage deficits, Q2 firms have small negative leverage deficits, Q3 firms have small positive leverage deficits, and Q4 firms have large positive leverage deficits. a, b, and c represent statistical significance at 1%, 5%, and 10%, respectively.

The results in Columns (b) and (c) largely provide evidence in support of hypothesis H2. Specifically, the acquisition rates among the constrained (Q1 and Q4) firms are higher in diversifying acquisitions (6.3% and 5.3%) than those of related acquisitions (6.0% and 4.8%), suggesting that leverage deficit constrains related acquisitions more than it constrains diversifying acquisitions. In fact, among the diversifying acquisitions, the acquisition rates are relatively similar for the constrained (Q1 and Q4) and unconstrained (Q2 and Q3) firms. However, when we consider the related acquisitions, we find a relatively wider gap between the acquisition rates for the constrained (Q1 and Q4) and unconstrained (Q2 and Q3) firms. Overall, the univariate tests support both hypotheses H1 and H2; i.e. leverage deficits constrain M&A activities. However, the leverage deficit constraints on corporate acquisitions seem relaxed in diversifying acquisitions.

4.2. The multivariate regression tests

The univariate analysis above fails to account for several important factors that may be related to the probability of undertaking acquisitions (e.g. growth opportunities, firm size, etc.). Therefore, in this section, I incorporate control variables into the analysis of the relationship between leverage deficit and the probability of undertaking different types of acquisitions. The baseline model is a probit regression specified in Eq. (1) below:

$$P_{it+1,t+5}(\text{Acquirer} = 1) = \beta_1 + \beta_2 \text{Deficit}_{it} + \sum_{k=1}^k X_{kit}^1 \beta_k + u_{it} \quad (1)$$

In the above equation, $P_{it+1,t+5}$ refers to the probability of firm i making at least one acquisition during the 5 years after determining its leverage deficit. When testing the industrial diversification hypothesis (H2), the definition of $P_{it+1,t+5}$ is slightly modified to reflect the probability of undertaking the specific type of acquisition (i.e. diversifying or related acquisition). The β s represent the intercept (β_1), the coefficient for the leverage deficit variable (β_2), and for the control variables (β_k). The u_{it} is the random error term assumed to be serially uncorrelated and homoscedastic. Deficit_{it} represents the leverage deficit variable. When analysing the specific effect of extreme overleveraging and extreme underleveraging, Deficit_{it} in Eq. (1) then becomes an indicator variable of one for the constrained (Q1 and Q4) firms and zero for the unconstrained (Q2 and Q3) firms.

Finally, X_{ki} in Eq. (1) represents one of the following k control variables that may affect the acquisition probability. I control for long-term leverage, since Uysal (2011) reports a negative association between a firm's long-term leverage and its acquisition activities. Long-term leverage ratio is defined as the average of a firm's leverage for the last 3 years. Also, I control for firm size (proxied as the natural log of net sales) because large firms may find it easier to raise funds for acquisitions. Since Harford (1999) suggests that better performing firms tend to be acquirers, I account for this effect by including the ratio of earnings before interest, tax, depreciation and amortization (EBITDA) to total asset in the model. Jensen's (1986) free cash flow hypothesis implies that high free-cash flow firms are more likely to make acquisitions. Accordingly, the ratio of cash and cash equivalents to total assets is included to control for this effect. Further, I include the average annual stock return to account for two effects, i.e., the performance effect and the misvaluation effect posited by Shleifer and Vishny (2003). Firms with high stock return may be deemed as better performing/overvalued and hence are more likely to make acquisitions. In addition, high growth firms may be more likely to undertake acquisitions. Thus, the market-to-book ratio is included in the model to control for growth opportunities. Since M&As tend to come in waves (see

Martynova and Renneboog, 2008), I capture this effect on the acquisition probability by including the industry M&A liquidity variable. Following Uysal (2011), I measure this variable as the sum of the transaction values of all acquisitions made in a year by all firms in a particular industry divided by the total sales of the industry in that year. Also, Uysal (2011) argues that firms in highly concentrated industries have fewer targets available for acquisition within the industry. I therefore include the industry Herfindahl index in the regression to capture the extent of industry concentration. In testing the industrial diversification hypothesis (H2), I also include the pre-acquisition Herfindahl diversification index of the firms to account for the effect of firms' existing diversification strategies. I expect diversified (focused) firms to have higher propensity for diversifying (related) acquisitions. Finally, in all the models, I include year dummies in order to account for changes in macroeconomic conditions over the sample period. The year dummies are expected to capture the effects of factors like interest rates and inflation rates which could impact the level of M&A activity in the macro-economy.

In Eq. (1) above, I am particularly interested in the sign, magnitude, and significance of β_2 (i.e. the coefficient on the leverage deficit variable) as it represents the extent of association between leverage deficit and the probability of undertaking acquisitions. I interpret this to mean the extent of financing and investment constraints associated with leverage deficit. The results are presented in Table 2. In order to interpret the coefficients as probabilities, the average marginal effects are reported as in Uysal (2011).

Columns (a) and (b) of Table 2 display the result for the test of H1 which are largely consistent with the univariate results and strongly support the view that leverage deficit (particularly overleveraging) reduces firms' ability to undertake new investments. Specifically, Column (a) shows that the coefficient of the leverage deficit variable is negative (-0.127) and statistically significant at 1% level. This suggests that a unit of leverage deficit is, on average, associated with a 12.7% reduction in the probability of making an acquisition in the future (i.e. within the next 5 years). An important implication of this finding is that the target leverage ratio is important, in that, deviating from it creates financing and investment constraints in the form of a reduced ability to undertake future acquisitions.

The finding presented in Column (a), however, does not distinguish between the investment constraint associated with extreme overleveraging and extreme underleveraging. As a result, the leverage deficit effect is further examined, with special attention given to the constrained (Q4 and Q1) firms. The results in Column (b) suggest that the investment constraint is limited to extremely overleveraged (Q4) firms. To be specific, the dummy variable for extremely overleveraged firms is negative (-0.051) and statistically significant (p -value of 0.000), while the extremely under-

TABLE 2.

Leverage deficit and the probability of undertaking different types of acquisitions

Variables	(a)	(b)	(c)	(d)	(e)	(f)
	All deals		Diversifying deals		Related deals	
Leverage deficit	-0.127 ^a (0.003)	-0.052 (0.215)	-0.168 ^a (0.000)
Overleverage effect (Q4)	..	-0.051 ^a (0.000)	..	-0.023 ^c (0.075)	..	-0.056 ^a (0.000)
Underleverage effect (Q1)	..	-0.014 (0.280)	..	-0.001 (0.962)	..	-0.011 (0.394)
Long-term leverage	-0.271 ^a (0.000)	-0.245 ^a (0.000)	-0.184 ^a (0.001)	-0.170 ^a (0.003)	-0.203 ^a (0.001)	-0.177 ^a (0.004)
Growth opportunities	0.020 ^a (0.000)	0.019 ^a (0.000)	0.017 ^a (0.001)	0.017 ^a (0.001)	0.019 ^a (0.001)	0.018 ^a (0.001)
Firm size	0.063 ^a (0.000)	0.063 ^a (0.000)	0.048 ^a (0.000)	0.048 ^a (0.000)	0.055 ^a (0.000)	0.055 ^a (0.000)
Profitability	0.036 (0.224)	0.033 (0.263)	0.001 (0.981)	-0.001 (0.973)	0.039 (0.227)	0.036 (0.266)
Stock return	0.846 ^a (0.000)	0.862 ^a (0.000)	0.567 ^a (0.000)	0.560 ^a (0.000)	0.857 ^a (0.000)	0.885 ^a (0.000)
Cash ratio	0.105 ^c (0.060)	0.100 ^c (0.072)	0.068 (0.239)	0.066 (0.254)	0.065 (0.241)	0.062 (0.263)
Industry M&A liquidity	0.190 ^a (0.004)	0.191 ^a (0.004)	0.163 ^a (0.008)	0.164 ^a (0.008)	0.088 (0.173)	0.088 (0.176)
Industry concentration	0.001 (0.990)	-0.002 (0.984)	-0.389 ^a (0.000)	-0.389 ^a (0.000)	0.356 ^a (0.000)	0.355 ^a (0.000)
Diversification index	0.204 ^a (0.000)	0.204 ^a (0.000)	-0.079 ^b (0.033)	-0.078 ^b (0.034)
No. of observations	11,117	11,117	9,865	9,865	9,865	9,865
Wald Chi-squared	312.41	312.68	242.43	243.09	271.46	275.76
P-value>Chi-squared	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R-squared	0.064	0.065	0.071	0.071	0.056	0.057

This table presents results from a probit analysis. The reported parameter estimates are average marginal effects. In Columns (a) and (b), the dependent variable takes a value of one if the firm undertakes an acquisition in the next 5 years following the determination of the leverage deficit variable. In Columns (c)-(f), the dependent variable takes a value of one if the firm undertakes a diversifying acquisition (or related acquisition) in the 5 years following the determination of the leverage deficit variable. All the models from Columns (a)-(f) generally summarise results from the estimation of Eqs. (1). The p-values are reported in italics and parentheses and are adjusted for standard errors clustered by firm. All models include 10 year dummies. a, b, and c represent statistical significance at 1%, 5%, and 10%, respectively.

leveraged dummy is negative (-0.014) but lacks statistical significance at conventional levels (*p*-value of 0.280). This finding is consistent with the

view that the cost of being overleveraged is greater than the cost of being underleveraged (see Byoun, 2008) because extreme overleveraging appears to constrain acquisitions more than extremely underleveraging. These findings also seem to suggest that extreme underleveraging is more likely to represent the presence of financing constraint than unused spare capacity.

In general, the findings are largely consistent with the US study by Uysal (2011). However, the current article's results indicate that the leverage deficit/overleverage effect is stronger for British firms than for US firms. For instance, for the overleverage effect, I report a marginal effect of 5.1% compared with the 0.9% documented by Uysal (2011). This suggests that a British overleveraged firm is almost 6 times less likely to make an acquisition compared with a US overleveraged firm. It is important to point out that the difference in the magnitude of the overleverage effect may be due to the choice of the sample period. The sample period for the present study includes acquisitions during the period 2006-2011, which coincides with the recent credit crunch brought about by the financial crisis of 2008. It must also be emphasised that the difference in the research designs and the sample compositions of the two studies might contribute to explaining the difference in the magnitude of the overleveraged effect.

I now turn attention to the results for the industrial diversification (H2) tests presented in Columns (c)-(f) of Table 2. These results suggest that the investment constraint associated with leverage deficit is smaller in diversifying acquisitions compared to non-diversifying (related) acquisitions. Specifically, the negative association between leverage deficit and the probability of making a diversifying acquisition is small (-5.2%) and insignificant (p -value of 0.215). In comparison, the association between leverage deficit and the probability of undertaking related acquisitions is larger (-16.8%) and statistically significant at 1% level. This suggests that the financing and investment constraints associated with leverage deficit are restricted to firms undertaking related acquisitions. In other words, firms with leverage deficit that choose to undertake diversifying acquisitions do not face any significant financing and investment constraints. These results imply that by committing to undertake new projects that have the potential to diversify corporate cash flows across different industries, firms with leverage deficit are able to undo, at least, part of the costs associated with leverage deficit.

Finally, the analysis based on the indicator variable for extreme overleveraging supports hypothesis H1. Specifically, overleveraging reduces the probability of undertaking a diversifying acquisition (-2.3%, significant at 10% level) less than the probability of undertaking a related acquisition (-5.6%, significant at 1% level). I interpret these findings to be consistent with the notion that lenders view diversifying (related) acquisitions as carrying greater (little) potential to reduce the default risk associated with

overleveraged acquirers (Lewellen, 1971). Consequently, the lenders are more (less) willing to supply funds for diversifying (related) acquisitions. These results are also economically significant because they suggest that an overleveraged firm attempting to undertake an acquisition is more likely to be successful in its attempts to secure funds from investors if it chooses to pursue a diversifying acquisition rather than a related acquisition.

5. CONCLUSIONS AND MANAGERIAL IMPLICATIONS

This paper contributes to the literature on the relations between capital structure and investment decisions by documenting a negative association between a firm's leverage deficit (excess of actual leverage over target leverage) and its ability to initiate and successfully complete acquisitions. I find the association between leverage deficit and the probability of undertaking an acquisition to be over twice larger than that reported in a related US study by Uysal (2011). This suggests that the cost for extremely exceeding a firm's target leverage (in terms of forgone acquisition deals) is much higher than was previously suggested in the literature. Another plausible interpretation of the finding is that the cost associated with leverage deficit is greater for British acquiring firms than for American acquiring firms. These results also suggest that it is not sufficient for firms to have target leverage ratios, but corporate managers must strive to keep their leverage levels close to their leverage targets. Thus, the current article provides evidence in support of the existence and relevance of the trade-off theory of capital structure. More importantly, the paper shows that acquiring firms that have leverage deficits do face different levels of financing and investment constraints depending on the type of acquisitions they choose to undertake. Specifically, firms with leverage deficit (especially those that extremely go beyond their leverage targets) tend to face lower (greater) constraints when they pursue diversifying (related) acquisitions. This implies that corporate industrial diversification mitigates the financing and investment constraints associated with leverage deficit. Moreover, it suggests that investors foresee the co-insurance benefits of reduced cash flow volatility associated with diversification, and thus act favourably towards financially-constrained firms proposing to undertake diversifying investments.

Although this paper contributes to the literature in this area by suggesting that the diversification characteristics of a proposed merger deal influences the financing and investment constraints associated with leverage deficit, it does not consider how the pre-acquisition level of diversification of the acquiring firm itself could influence the financing and investment constraints related to leverage deficit. Future studies can inquire into this matter. It may also be interesting to investigate the link between leverage

deficit and investments in emerging economies with less developed capital markets.

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