


# Minority versus majority: The choice of acquisition in Asia-Pacific countries

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## Abstract

This paper examines the relationship between the financial constraints of the acquiring firms and their choice of a minority over a majority acquisition. Our findings show that the likelihood of bidders undertaking a minority acquisition increases with financial constraints, including the deviation from target capital structure, and overleverage deficit. We also find that the impacts of leverage deviation on the likelihood of bidders engaging in a minority or majority acquisition is asymmetric for underleveraged and overleveraged firms. In addition, international bidders are less likely to take a minority acquisition if the target is operating in (i) countries with a higher degree of Political Stability and Absence of Violence/Terrorism, (ii) countries with higher degree to which individuals are able to participate in selecting their government, as well as having more freedom of expression, freedom of association, and a free media. Lastly, minority acquisitions are more common in a country with a more developed market. As such, in a fluid social order it looks like acquirers really need majority control.

## KEYWORDS

Asia-Pacific, financial constraints, majority acquisition, minority acquisition, political stability, voice and accountability

## 1 | INTRODUCTION

In the context of corporate mergers and acquisitions, what factors drive acquirers' bidding decision is of increasing interest. Uysal (2011) shows that managers take deviations from their target capital structures into account when planning and structuring acquisitions. Ouimet (2013) finds that efficient allocation of incentives is an important motivation behind minority or minority acquisition. Agyei-Boapeah et al. (2019) provide evidence to suggest that a firm's deviation from its optimal financial leverage may impede its ability to undertake future expansions. We extend the literature by examining the impacts of financial

constraints, political stability, voice and accountability on the probability of the bidders undertaking a minority interest in the target firm. We analyse the impacts of financial constraints on the minority acquisition decision using a sample of 1776 acquisitions announced during the period 2000–2015 in 13 Asia-Pacific countries. Our study provides new evidence on the interdependent relationship between the financial constraints of the acquiring firms and the decision between majority and minority acquisitions. Furthermore, we find that political stability as well as voice and accountability in target countries have significant impacts on the probability of minor acquisition decisions among the international bidders.

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Our study contributes to the literature in several ways. First, it is one of the few studies to explore the impact of the financial conditions of the acquirer on different levels of ownership in the target firm. Specifically, we add to the study by Liao (2014) and Ouimet (2013) who investigates the characteristics of target minority acquisitions and finds that they are financially constrained. Secondly, while most previous studies focus on U.S. transactions, our study is among very few to study to covers a broader sample of firms in 13 Asia-Pacific countries (Erel et al., 2012; Gregoriou et al., 2021). Determinants of cross-border mergers and acquisitions. This should draw a specific interest since the Asia Pacific is one of the fastest-growing markets for mergers and acquisitions in the world. The share of global acquisition transactions increases from 11.30% in 2000 to 35% in 2021 (Statista, 2022). The differences in the development of financial markets and corporate financing patterns suggest that more attention should be paid to the analysis of acquisition activities (Claessens et al., 2000). Furthermore, while most prior studies were restricted to only domestic acquisitions made by US firms, we add to the Agyei-Boapeah et al. (2019) study to examine the link between leverage deviation and minority acquisition probability within a framework that incorporates both domestic and cross-border acquisitions. In this respect, we examine the impacts of the likelihood of political instability and/or politically-motivated violence, including terrorism, and the freedom of expression, freedom of association, and free media in target countries on minor acquisition decisions of the international bidders.

The results presented in our study strongly suggest that firms with a higher debt ratio, deviation from target capital structure, and leverage deficit have a greater probability of minority acquisitions. Moreover, while the effect of overleverage on the probability of undertaking a minority acquisition is statistically significant, the impacts of underleverage on the probability of undertaking a majority acquisition is insignificant. A basic trade-off the bidder faces in launching a bid is getting control at the cost of funding that grasp for control. The trade-off is between being pushed around by the target management versus being pushed around by the newly formed joint entity's creditors who await re-payment of their funds. Once the bidder has 50% of the target they can do what they will with its assets. Similarly, post-acquisition, creditors can take control of the post-acquisition firm that fails to meet its debt re-payments by falling into default on its debts. So, the downside risk is conditional but potentially high, while the upside is unconditional. This is reflected here in what our results report. Collectively, these three findings are consistent with the view

that high levels of debt finance constrain a firm's ability to undertake major investment projects as majority acquisitions. More debt means bidder managers are also more subject to 'market discipline' and thus find it hard to pursue a majority acquisition.

The remainder of our paper is organized as follows. Section 2 reviews literature. Section 3 presents sample selection, data summary statistics and research methodology. Section 4 provides empirical results and findings of the analysis. Finally, Section 5 concludes and remarks.

## 2 | LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

### 2.1 | The choice between minority and majority acquisitions

The advantages of majority acquisitions are well known (see Fee & Thomas, 2004; Maksimovic & Phillips, 2001 among others). However, less is known about transactions involved in acquiring minority equity stakes which do not allow the bidders to control the target (Liao, 2014; Ouimet, 2013). Nevertheless, minority acquisitions may be expected to have some advantages over majority acquisitions, for a number of reasons.

First, a bidder may be more likely to take a minority stake if integration through a majority merger and acquisition is expected to be inefficient (Maksimovic & Phillips, 2001). Jensen and Murphy (1990) suggests that agency conflicts can be mitigated if managers are provided with an equity ownership as far as managers and shareholders' incentives are aligned, and the stock price is a good source of information to evaluate managerial performance. However, the efficiency of the above equity-based incentives will be affected after a majority equity stake is sold and the stock is delisted. After majority acquisition, an important source of information for assessing managers' performance is lost, leading to a decrease in managerial efforts and a potential increase of agency conflicts at the target firms. As such, bidders may prefer to take a minority position in order to retain managerial incentives in the target firm.

Second, minority acquisition may also be preferred over majority the when firms are financial constrained (Fee et al., 2006; Liao, 2014; Ouimet, 2013 among others). Bidders are typically affected by financial leverage because it limits their ability to acquire the assets of the target company. Further, financial leverage is a natural brake on bidders' capacity to borrow further if good investment opportunities arrive. They would need to retain some liquidity from their own shareholding to start succession plans.

Finally, bidders may prefer a minority share in the target firm if they believe that there is uncertainty in the values of the targets and in the benefits of full synergies in a majority acquisition (Ouimet, 2013). Minority acquisition limits financial exposure to a business, and allows them to creep further into the target company over time. A small stake unlocks information to detect if a larger stake should be purchased in the long term. Bidders will obtain representation in the board and have power to demand financial information. They will more competently assess the potential gains of the target before deciding whether and how to take a majority stake in the acquired firm. For this reason, involving in a minority acquisition position is a necessary step in the real options strategy of acquirers.

## 2.2 | Financial constraint and the option of minority or majority acquisition

Capital structure is documented significantly affects the acquisition decision of bidders (Myers, 1984; Myers & Majluf, 1984; Ouimet, 2013; Stulz, 1990; Uysal, 2011) When internal funds are exhausted, bidders will access external financing sources to fund their acquisition projects. The information asymmetry problem makes equity financing more expensive than debt, therefore, managers prefer debt to external equity as long as they are able to borrow. Thus, debt capacity is an important factor that affects merger and acquisition decisions.

In comparison to a minority acquisition, a majority acquisition activity demands a large amount of additional cash beyond the direct cost of the target equity stake: costs of advice, marketing and communications (Cartwright & Cooper, 1990); and human resource redundancies (Chatterjee et al., 1992). This may lead companies with a high debt ratio to be more likely to acquire minority than majority stakes. Empirically, Kim (2012) provides evidence that if firms have a financing barrier, they choose to purchase below 50% of the target equity in order to exercise effective control. In the same vein, Ouimet (2013) shows that minority acquisitions are preferable when bidders face financial constraints.

Firms with an identical debt ratio, are likely to have different risk profiles if they have very different target capital structures (Zhou et al., 2016). The difference in risk profiles potentially creates the differences in ability of borrowing among the firms and their costs of capital. As such, it is critical to emphasize the role of the target capital structure in corporate decisions (Flannery & Rangan, 2006), hence the important role of leverage deficit in making merger and acquisition decisions (Harford et al., 2009 and Uysal, 2011).

Motivated by the above discussions, we formulate the first hypothesis in the relationship between financial constraints and the choice of minority and majority merger and acquisition decisions as follows:

**Hypothesis 1.** *Firms with higher financial constraints are more likely to undertake minority acquisitions than firms with lower financial constraints.*

We measure financial constraints using three different variables: (1) Acquirers' market leverage, that is, total debt in the year to the total market value of the firm, (2) the deviation from target capital structure, and (3) the level of leverage deficit (overleveraged).

## 2.3 | Political stability, voice and creditability, and market development

Due to the increasing value of cross-border mergers and acquisitions in the last several decades (Statista, 2022), many countries conduct reviews of merger and acquisition activities involving foreign companies with significant revenue or assets within their jurisdiction. As of 2019, 135 jurisdictions have enacted merger control laws that mandate competition authorities to review certain transactions (White and Case, 2022). By means of merger control laws and their implementation, politicians frequently alter the environment in which firms operate, which creates a significant amount of uncertainty for acquisition decisions. Rossi and Volpin (2004) finds that the volume of M&A activity is significantly larger in countries with stronger shareholder protection. Bonaimea et al. (2018) report that political and regulatory uncertainty is strongly negatively associated with merger and acquisition activity at firm levels. Gregoriou et al. (2021) report that the percentage of full control cross-border M&A deals is negatively correlated to the level of policy uncertainty. Motivated by those studies, as part of our analysis, we investigated the impacts of political stability, voice and accountability, and market development in target countries on major/minor acquisition decisions of the international bidders. We propose the following hypotheses.

**Hypothesis 2.** *International bidders are more (or less) likely to take a minority position in countries with a high degree of Political Stability and Absence of Violence/Terrorism.*

**Hypothesis 3.** *International bidders are more (or less) likely to take a minority position in countries with a high degree to which individuals*

are able to participate in selecting their government, as well as having more freedom of expression, freedom of association, and a free media.

### 3 | DATA AND METHODOLOGY

#### 3.1 | Data and sample selection

The 2000 s marked the renaissance of mergers and acquisitions around the world as well as in the Asia-Pacific with the pressure on executives to find growth after the 2008 financial crisis increasing as investors constantly searched for higher returns (Statista, 2022). Our sample contains merger and acquisition activities in 13 Asia-Pacific countries during the period 2000–2015: Australia, China, Hong Kong, India, Indonesia, Malaysia, New Zealand, Philippines, Singapore, South Korea, Taiwan, Thailand and Vietnam. We limit our sample set to those countries as they are the top-performing countries by number and deal value in intra-Asia-Pacific merger and acquisition.<sup>1</sup>

We initially collected a dataset of 95,164 merger and acquisition transactions over the studied period from Mergers and Acquisitions Deals Database in Refinitiv Eikon (2018). Following mainstream literature (Erel et al., 2012; Ouimet, 2013; Uysal, 2011), we exclude mergers and acquisition transactions of financial and utilities firms since they are highly regulated. Furthermore, we exclude deals where the bidder and target have the same DataStream code. Finally, we only keep the deals in our sample if all the following criteria are met:

1. The transaction has to be complete.
2. The value of transaction is at least \$1 million.
3. The acquirer owns less than 50% of the target firm stake before the date of the announcement.
4. If multiple firms acquire the target on the same day, observations will be excluded.
5. Financial information must be available in DataStream Advance Database for both acquirers and target firms.

Transactions are classified as minority acquisition if the bidder acquires less than 50% of the target's ownership, and a majority acquisition if the bidders end up with more than 50% of the target's ownership. In the situation where the bidders sought to purchase more than 50% but eventually own less than 50% share of the target, we classify their transaction as majority deals to consider the bidders' motivation behind the deals. The whole screening process results in a final sample consisting of 1776 transactions, of which 444 transactions are majority deals and 1332 transactions are minority deals.

TABLE 1 Acquisition activities across Asia-Pacific countries

Nation	Total N	Majority		Minority	
		N	%	N	%
Australia	372	149	40.05	223	59.95
China	180	38	21.11	142	78.89
Hong Kong	135	39	28.89	96	71.11
India	25	10	40	15	60
Indonesia	26	8	30.77	18	69.23
Korea	621	108	17.39	513	82.61
Malaysia	95	23	24.21	72	75.79
New Zealand	14	3	21.43	11	78.57
Philippines	20	5	25	15	75
Singapore	142	32	22.54	110	77.46
Taiwan	24	5	20.83	19	79.17
Thailand	107	20	18.69	87	81.31
Vietnam	15	4	26.67	11	73.33
TOTAL	1776	444	25	1332	75

Finally, we collect the financial variables from Refinitiv DataStream Advance (2018). *Voice and accountability* and *political stability* variables are obtained from World Bank's Worldwide Governance Indicators, measured as percentile rank among all countries (ranges from 0 (lowest) to 100 (highest) rank) (World Bank, 2021).

#### 3.2 | Descriptive statistics

Table 1 summarizes acquisition activities across the 13 studied countries during the studied period 2000–2015. South Korea had the highest number of acquisitions followed by Australia, and China, with 621, 372, and 180 deals correspondently. In addition, there are significant differences in the minority and majority acquisition groups. For example, 82% of the acquisitions in South Korea are minority, while less than 20% of the acquisitions are majority. China, New Zealand, Taiwan, and Thailand show almost the same proportions. Australia and India, are the two countries where 60% of the acquisitions are minority, 40% of the acquisitions are majority. The rest of the sample has more than 70% of transactions being minority deals and less than 30% of transactions being majority deals.

Table 2 describes the characteristics of the deals in two groups, majority and minority transactions. We compare the difference in two sample means for each presented characteristic. The majority transaction involves a larger transfer of the target equity stake with a 77.97% share on average, while the minority transactions on average acquire only around 18.89% of equity share in

TABLE 2 Firm and deal characteristics for majority and minority acquisitions

Variable	Majority acquisitions				Minority acquisitions				Difference (means)
	N	Mean	Median	SD	N	Mean	Median	SD	
Tangible assets	444	0.363	0.339	0.231	1332	0.328	0.308	0.224	***
Percentage of acquired shares (%)	444	77.97	80.31	28.61	1332	18.89	11.87	10.71	***
Percentage of owed shares after transaction (%)	444	83.72	100	20.7	1332	20.14	18.48	12.39	***
Value of transaction (million)	444	482.28	54.06	1680.73	1332	132.36	13.09	546.34	***
Acquirer market capitalization (MC, million)	444	3086.77	336.28	12,000	1332	3317.97	222.96	15,800	
Acquirer total assets (TA, million)	444	4230.51	570.51	13,200	1332	4096.53	374.59	14,300	
Acquirer Market Leverage (MarketLEV, %)	444	45.9	40.9	30.4	1332	63.7	52.1	10.6	***
Acquirer market to book ratio (MTBV)	444	2.08	1.25	20.25	1332	2.59	1.2	49.58	
Target market capitalization (TMC, million)	444	398.99	61.08	1261.19	1332	682.76	71.86	2791.86	***
Target total assets (TTA, million)	444	565.99	110.06	27.22	1332	1097.76	92.54	5133.36	***
Target market to book ratio (TMTBV)	444	2.06	1.33	2.45	1332	1.84	1.21	2.31	***
Relative size of the deal	444	0.34	0.12	0.7	1332	0.16	0.04	0.48	***
Voice and accountability percentile rank (ranges from 0 (lowest) to 100 (highest) rank)	444	69.99	69.66	26.49	1332	66.04	66.23	27.96	***
Political stability percentile rank (ranges from 0 (lowest) to 100 (highest) rank)	444	64.36	70.21	23.53	1332	61.77	64.89	24.35	***

Note: A deal is classified as minority acquisition if the bidder seeks to acquire less than 50% of the target ownership stake and own less than 50% of the target share after the transaction. A deal is classified as majority acquisition if the bidder seeks to acquire more than or equal 50% of the target ownership stake or own more than or equals 50% of the target share after the deal. Difference in means is calculated using *t*-test.

\*\*\*, \*\*, \* Significant at the 1%, 5% and 10% levels, respectively.

the target firms. The value of majority transactions is approximately four times as large as minority transactions. The size of acquirers seems not to be relevant as the difference in means of market value and total asset are not statistically significant. In addition, the acquirers' financial leverage in majority acquisitions is significantly lower than in minority transactions suggesting that acquirers are likely to undertake a minority acquisition if they have a high debt ratio. Meanwhile, the targets' market-to-book ratio appears to be significantly different between the two groups of minority and majority acquisition. *Relative size of the deal*, which is measured as transaction value divided by the market capitalization of the acquirer, shows a lower ratio in minority transactions. Lastly, voice and accountability and political stability percentile ranks are lower in minority acquisitions with significant levels of difference between minority and majority acquisition deals.

### 3.3 | Methodology

Following mainstream literature, we perform a two-step estimation procedure to investigate the impacts of

financial constraints on the decision to undertake minor acquisition. In the first step, we regress the observed debt ratios on the traditional explanatory variables of capital structure suggested in previous studies to obtain the target capital structure (e.g., Goyal et al., 2022; Rajan & Zingales, 1995). The deviation from the target capital structure then is measured as the difference between a firm's fitted values of capital structure in the above regression and its actual observations. Firms are grouped into overleveraged, or underleveraged where target leverage deviation is in the fourth, or first quartile of the distribution of regression residuals accordingly. In the second step, the market leverage and the deviations from the target capital structure are used to predict the probability of the bidders engaging in minority acquisitions.

#### 3.3.1 | Measurement of the leverage deficit

This section describes the process of predicting firms' financial constraints. Following the literature (see Hovakimian et al., 2001; Kayhan & Titman, 2007), we regress firms' financial leverage on a set of traditional determinants of capital structure to estimate the fitted



TABLE 3 Definition of variables

<b>Panel A: Variables in the estimation of leverage deviation (Equation (1))</b>	
Firm size	The natural logarithm of total assets.
MTB	The ratio of market value to total asset value.
Tang	Tangible assets divided by total assets.
NDTS	Non-debt tax shields, depreciation expense scaled by total assets.
Sale	Total sale divided by total assets.
SE	Selling expenses divided by sales.
R&D	Research and development expenses divided by total assets.
R&DDummy	A dummy variable that equals 1 if the R&D expenses of firms are not recorded on DataStream Advance, 0 otherwise.
MLev	Market leverage, total debt in the year to market value of the firm.
Lev	Leverage, long term debt to total asset.
<b>Panel B: Variables in the minority acquisition model (Equation (3))</b>	
MinorityAcq	A dummy variable equals 1 if the acquirer seeks to acquire less than 50% of the target share and own less than 50% of the target share after the deal, 0 otherwise.
MarLev	Total debt to market value of the firm.
LevDev	The leverage deviation in Equation (2)
Underleveraged	A dummy variable that equal 1 if the firm's leverage deviation level is in the first quartile of all firms in the sample, 0 otherwise.
Overleveraged	A dummy variable that equal 1 if the firm's leverage deviation level is in the fourth quartile of all firms in the sample, 0 otherwise.
Relative size of the deal	The natural logarithm of ratio of the transaction value to the market capitalization of acquirers.
Acquirer slow growth	A dummy variable that equal 1 if the acquirer's market-to-book ratio is in the lower quartile of all firms in the sample, 0 otherwise.
Acquirer high free CF	A dummy variable that equals 1 if the acquirer's free cash flow is in the upper quartile of all firms in the sample, 0 otherwise.
Acquirer MTB	The value of the acquirer's market to book ratio (MTB)
Target ROA	The target's return on assets
GDP per capita	The gross domestic product (US\$) per mid-year population of the country in which the acquirer is located
Capitalization per GDP	The sum of share price multiplies the number of shares outstanding for all listed domestic companies in the country of the acquirer (excluding mutual funds, investment companies or other collective investment vehicles) divided by gross domestic product in the year.
Cross-border dummy	A dummy variable that equals 1 if both acquirer and target are in two difference countries, 0 otherwise.
Interaction term	Acquirer Slow Growth * Acquirer High Free CF
Same industry dummy	A dummy variable that equals 1 if both acquirer and target are in the same industry sector as measured by 2-digit SIC, and 0 otherwise.
Voice and accountability	This variable is measured by World Bank as percentile rank among all countries (ranges from 0 (lowest) to 100 (highest) rank). Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as having more freedom of expression, freedom of association, and a free media.
Political Stability and Absence of Violence/Terrorism	This variable is measured by World Bank as percentile rank among all countries (ranges from 0 (lowest) to 100 (highest) rank). Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.

target capital structure for each firm. To avoid potential endogeneity problems caused by omitted variables and potential two-way correlation between the dependent

variable and the hypothesized determinants, that was exogenously determined by previous financing and investment policies, the explanatory variables in the

model will be measured at prior periods,  $t - 1$  or  $t - 2$ , as suggested by Harford et al. (2009). In addition, we apply different model specifications with market leverage and book leverage to predict the target capital structure of the acquirers to check the robustness of our estimations.

In all regressions, we add industry dummies, country dummies, and year dummies to control for other confounding effects relating to industry and country characteristics, the time trend, the impact of global financial crises and re-estimate the models. Optimal capital structures are different for different industries; therefore, the standard errors in our regression analysis are clustered by industry to capture any remaining industry specifics that the industry-fixed effects cannot detect. Our regression equation is given below, and the variable definitions are given in Table 3: Panel A.

$$\begin{aligned} Lev_{it} = & \alpha + \beta_1 Size_{t-1} + \beta_2 MTB_{t-1} + \beta_3 PROF_{t-1} \\ & + \beta_4 NDTS_{t-1} + \beta_5 SE_{t-1} + \beta_6 Tang_{t-1} + \beta_7 R\&D_{t-1} \\ & + \beta_8 R\&DDummy_{t-1} + \beta_9 LEV_{t-1} + \beta_9 Industry FE \\ & + \varepsilon_{it}. \end{aligned} \quad (1)$$

The list of traditional determinants of capital structure that have been documented in the capital structure literature are presented in Panel A of Table 3. Size is expected to be positively associated with debt ratio as larger firms have cash flow stability (Rajan & Zingales, 1995), a greater degree of financial flexibility, and better access to external funds resulting from their diversification in geographies, product lines, and so forth. Tangible assets are expected to be positively related to leverage because they are less risky and easy to collateralise, thus firms with a higher level of tangible assets can borrow at cheaper cost (Titman & Wessels, 1988). Non-debt tax shields are expected to be indirectly associated with financial leverage, as firms can enjoy tax savings without costs of bankruptcy. In addition, firms with higher growth opportunities (proxied by higher

market to book value) need to lower their debt ratios to eliminate the underinvestment problem (Myers, 1977). As such, growth opportunity is expected to be indirectly associated with financial leverage. Further, according to pecking-order theory, managers prefer retained earnings to debt and equity in financing new investment projects, thus we expect a negative relationship between financial leverage and profitability (Myers & Majluf, 1984). Moreover, selling expenses and research and development expenses (proxy for product unique) are expected to have a negative relationship with debt ratios, and bankruptcy costs (Titman, 1984). Finally, as suggested by Lemmon et al. (2008), we include a lagged value of financial leverage and industry dummies to control firm fixed effects and industry effects.

The estimates from regression model in Equation (1) are used to predict the target capital structure which then will be used to calculate the deviation from the target capital structure. We subtract the target capital structure from their observed leverage ratios.

$$Leverage\ Deviation_{it} = Leverage_{it} - Target\ Leverage_{it} \quad (2)$$

Using leverage deviation, we define overleveraged and underleveraged status of the acquiring firms, the former (latter) being when the target leverage is small (large) and the latter being when the target leverage is large relative to that observed in practice.

### 3.3.2 | The determinants of minor acquisition decision

This section presents the empirical models to explain the relationship between financial constraints and the choice of minor acquisitions. We estimate the probability of bidders undertaking minority mergers and acquisitions using the probit regression method. The definitions of our variable are given in Panel B of Table 3. Our model has the following characteristics.

$$\begin{aligned} Prob(MinorityAcq = 1)_{ij} = & \alpha_1 + \alpha_2 MarLev_{ij} \\ & + \alpha_3 LevDev_{ij} + \alpha_4 UnderLev_{ij} \\ & + \alpha_5 OverLev_{ij} \\ & + \sum \alpha_m Controls_m \{Managerial\ Incentives, Slow\ Growth, High\ Free\ CF, ROA, \\ & Market\ development, Crossborder\ dummies, Same\ Industry\ Dummies\} + \varepsilon_{ij}, \end{aligned} \quad (3)$$

where 'MinorityAcq' equals 1 if the deal involves a minority acquisition, and 0 if the transaction involves a majority acquisition. We apply different model specifications with different measures of financial constraints such as financial leverage, leverage deviation, overleverage, and underleverage firm to examine the determinants of probability of minority acquisitions. Our main independent variables include market leverage (*MarLev*), leverage deviation (*LevDev*), underleverage (*UnderLev*) and overleverage (*OverLev*). In addition, we explore the factors that potentially affect the bidders' acquisitions decisions as follows:

*Managerial equity incentives (proxied by relative size of the deal)*: To avoid the inefficiency caused by majority acquisition, via the decrease in managerial equity-based incentives, firms may consider undertaking a minority over majority acquisition. Because the equity-based incentives are determined based on the firm value, the dilution level of the target managerial incentives is more likely to be higher if the target firm size is relatively smaller to the bidders. For this reason, we use Relative size of the deal, which is calculated as the value of the transaction divided by the acquirer market capitalization, to capture the impacts of dilution of managerial incentives on minority or majority acquisition decisions.

*Acquirer slow growth*: This dummy variable equals 1 if the acquirer market-to-book ratio is in the lower quartile in the sample, and 0 otherwise. Acquirers conduct mergers and acquisitions in the hope of boosting the growth of their own business or to deter competition, hence we investigate the impact of acquirer slow growth on the probability of minority vs. majority acquisitions.

The interaction between Acquirer Slow Growth and Acquirer High Free Cash Flow: Acquirer High Free Cash Flow is the dummy variable that equals 1 if the acquirer's free cash flow is in the upper quartile. Managers of acquiring firms may undertake majority acquisitions to pursue their own interests if free cash flows are substantial, for example, to increase the firm size, which can increase their compensation or enhance their prestige. We use the interaction between Acquirer Slow Growth and Acquirer High Free Cash Flow to control for agency conflict in the bidders' decision because merger and acquisition decision takes into account the acquirer's growth rates.

*Grow opportunities (proxied by Acquirer Market to Book Value)*: the acquirer's growth opportunities affect their acquisition decisions. Studies show that bidders are driven to make acquisitions by their high market valuation (Shleifer & Vishny, 2003 among others). We expect that firms with higher market valuations to purchase a larger share of targets. We use market-to-book ratio to measure the bidders' market valuation.

*Target profitability*: the target firms' profitability can affect bidders' acquisition decisions. Kim (2012)

demonstrates that when managers of the acquiring firm are interested in profit and cash flow, they will seek highly profitable targets and maximize their ownership of the targets (Kim, 2012). However, if managers seek private benefits, they will buy only a large enough share to save resources for other expenditures. We use return on assets to measure target firms' profitability.

*GDP per capita and capitalization per GDP (proxy for Market Development)*: it is understood that bidders will find it more difficult to fund takeover activities in countries with lesser developed markets. We follow Beck et al. (2012) in using those two variables to control the impacts of the market development on acquisition decisions.

*Voice and accountability*. This is the World Bank World Governance Indicator that is measured as the percentile rank among all countries (ranges from 0 (lowest) to 100 (highest) rank). It reflects the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association and free media. We expect Voice and Accountability variable to influence the majority or minority acquisition decision of the bidders.

*Political Stability and Absence of Violence/Terrorism*: Political Stability and Absence of Violence/Terrorism measures the likelihood of political instability and/or politically-motivated violence, including terrorism. This is the World Bank World Governance Indicator that is measured as the percentile rank among all countries (ranges from 0 (lowest) to 100 (highest) rank). Studies show that regulatory uncertainty is strongly negatively associated with merger and acquisition activity at firm levels (Bonaime et al., 2018). We use *Political Stability and Absence of Violence/Terrorism* variable to have impacts on the majority or minority acquisition decision of the bidders.

Table 4 shows the Pearson correlation matrix for the key variables of the target capital structure (Equation (1)). Although there are some correlations among those explanatory variables, they are not high enough to cause concern for issues related to multicollinearity. To confirm this, we perform post estimation VIF test for Equations (1) and (3), and the results came out that our max values of VIF are 1.22 and 1.45, while our mean VIF values are 1.11 and 1.16, which means that none of our variables is a problem.

## 4 | EMPIRICAL RESULTS

### 4.1 | Determinants of the target capital structure

Following the standard methodology to estimate the target capital structure in the mainstream literature, we obtain the correlation coefficients for the determinants of



**TABLE 4** Pearson correlation matrix among the key variables of the target capital structure

Variable	Size	MTB	Profitability	Non-debt tax shield	Tangible assets	Selling expense	R&D
Size	1						
MTB	0.039 (0.000)	1					
Profit	0.065 (0.000)	-0.046 (0.000)	1				
NDTS	0.016 (0.001)	0.063 (0.000)	-0.127 (0.000)	1			
Tang	0.167 (0.000)	-0.079 (0.000)	0.005 (0.327)	0.222 (0.000)	1		
SE	-0.072 (0.000)	0.006 (0.330)	-0.059 (0.000)	-0.023 (0.000)	-0.008 (0.138)	1	
R&D	-0.088 (0.000)	0.123 (0.000)	-0.025 (0.000)	0.022 (0.003)	-0.046 (0.000)	0.182 (0.000)	1

Note: Variables are defined in Table 3. *p*-values are in parentheses. We run our standard regression of the target capital structure on the key variables. We removed the variables that do not have explanatory power in our sample such as selling expenses, non-debt tax shields.

the target capital structure using the time-series means of the coefficient estimates from the yearly regressions of target leverage ratio over key financial measures in the literature. We acknowledge that capital structure from a previous year can directly affect the current year capital structure since the firm might not be able to achieve its desired capital structure in one go—for convenience and cost minimization, hence we adopted a one period lag of capital structure in our explanatory variables. We also include a one to two period lag of the independent variables among our explanatory variables due to the reason that a part of their balances is accumulated from previous financial years, and adjustment and transaction costs may prevent firms from rapidly moving to optimal capital structure (See Harford et al., 2009 and Uysal, 2011, among others).

The estimates of target capital structures are presented in Table 5. Overall, the correlation coefficients are consistent with previous literature (Ozkan, 2001; Rajan & Zingales, 1995; Titman & Wessels, 1988). Size, Market to Book value, Tangible asset, and lag of dependent variable are positively related to the leverage ratio. Other variables such as Prof, None debt tax shield, R&D, R&D dummy have negative effects upon leverage. All of the coefficients of explanatory variables, except selling expenses, are highly significant.

## 4.2 | Deviation from target capital structure and the unconditional probabilities of making minority/majority acquisitions

The results from Table 5 are used to calculate the target financial leverages which are later used to estimate

**TABLE 5** Standard target capital structures

Variable	Coef.	Standard error
MarLev <sub><i>t</i>-1</sub>	0.8733***	0.004
Size <sub><i>t</i>-1</sub>	0.0016***	0.000
MTB <sub><i>t</i>-1</sub>	0.0158***	0.001
Profit <sub><i>t</i>-1</sub>	-0.0036***	0.001
NDTS <sub><i>t</i>-1</sub>	-0.0351**	0.018
Tang <sub><i>t</i>-1</sub>	0.0193***	0.004
SE <sub><i>t</i>-1</sub>	0.0001	0.000
R&D <sub><i>t</i>-1</sub>	-0.0592***	0.019
R&DDummy <sub><i>t</i>-1</sub>	-0.0079***	0.001
Constant	0.0099	0.031
Number of observations	17,371	
Industry dummies	Yes	
Year dummies	Yes	

Note: This table presents the average coefficient estimates from the standard regressions of target market leverage ratio over key financial variables used in the literature. Variables are defined in Table 3. We add industry/year indicator variables to control for industry/year effects. Standard errors are adjusted for clusters in acquiring countries to obtain correct *p* values. \*\*\*, \*\*, \* Significant at the 1%, 5%, and 10% levels, respectively.

acquirers' leverage deviations. Following Kayhan and Titman (2007) and Uysal (2011) we estimate the acquirers' deviation from the target capital structure by subtracting the target leverage ratio from the observed leverage as in Equation (2). Then we divide the acquirers' leverage deviations into quartiles. Since the statistics show that the leverage deviation level in Quartile 1 and Quartile 4 are significantly different from zero on average, but that of

TABLE 6 Differences in the unconditional probabilities of bidders undertaking minority or majority acquisitions

	Whole sample of acquirers	Leverage deviation quartiles				Difference Q1–Q4
		Q1 (Underleveraged)	Q2	Q3	Q4 (Overleveraged)	
Ratio of majority to total acquisitions (%)	0.25	28.15	27.03	24.55	20.27	7.88***
Ratio of minority to total acquisitions (%)	0.75	71.85	72.97	75.45	79.73	−7.88***
Percentage of share acquired (%)	33.66	37.91	34.00	32.66	30.06	7.85***
Value of transaction (million)	219.84	319.69	274.06	167.47	118.15	201.54***

\*\*\*, \*\*, \* Significant at the 1%, 5%, and 10% levels, respectively.

Quartile 2 and Quartile 3 are insignificantly different from zero, we classify firms in Quartile 1 as underleveraged while firms in Quartile 4 are considered to be overleveraged.

Next step, we conduct a univariate analysis to investigate the association between acquirers' leverage deviations and their decisions on a minority position. We calculate the (unconditional) probability of bidders undertaking majority or minority acquisitions as the number of acquirers in each subsample divided by the total number of firms in this subsample. Table 6 shows the differences in the unconditional probabilities of bidders undertaking minority or majority acquisitions, the percentage of shares acquired, and the value of transaction across four leverage deviation quartiles. The average ratio of bidders acquiring a minority stake in the Quartile 1 subsample is 71.85%, whereas it is 79.73% in subsample Quartile 4. The difference between these two subsamples is statistically significant, indicating that overleverage firms are more likely to undertake minority acquisitions than underleveraged firms. In contrast, firms in the Quartile 4 subsample have the lowest probability to undertake majority acquisition (20.27%), followed by firms in Quartile 3, Quartile 2 and Quartile 1 subsamples respectively. Furthermore, the statistics show that firms with the highest leverage deviation level (Quartile 4) have the lowest average percentage of share acquired of 30.06% and an average value of transaction of 118.15 million. These observations, as shown in Table 6, are highly consistent with our hypotheses.

### 4.3 | Factors affect acquirers' choice of minority or majority acquisition decision

This section of our paper presents a multivariate analysis of the probability of taking a minority acquisition of acquiring firms. Table 7 presents the results of our probit regressions with the marginal effects being reported

alongside the coefficients. We use three different measures of financial constraints including financial leverage, leverage deviation, overleverage, and underleverage firm to examine the determinants of the probability of minority acquisitions. Standard errors are clustered by industries to account for serial correlation of errors within the industry and allow the different variances of errors between industries. Although not reported, our model includes industry and year effects.

In Table 7, Model 1 examines the impact of financial leverage on the probability of taking a minority acquisition. The effects of leverage deviation are analysed in Model 2 while the impacts of overleverage, and underleverage firms on the probability of minority acquisitions are investigated in Model 3. Our results present a strongly positive significant relationship between debt ratio and the probability of bidders engaging in a minority position. This strongly supports our Hypothesis 1, and mainstream literature, which suggests that higher financial leverage increases the likelihood of bidders taking minority positions (see for example Agyei-Boapeah et al., 2019; Fee et al., 2006; Kim, 2012; Liao, 2014). The marginal effect of leverage in Model 1 indicates that for 1% increase in the debt ratio will lead to an increase of 11.7% in the probability of making a minority acquisition. Results provide new evidence on the interdependent relationship between the financial constraints of the acquiring firms and the decision between majority and minority acquisitions. Note that there is a reasonably large drop in the number of observations as the analysis moves from absolute leverage to deviations from target leverage due to the reason that we only take the value of leverage deviation within quartile Q1 and Q4, which overall is 11,586 observations. The rest are quartile Q2 and quartile Q3 (i.e. 17,371–11,586 observations).

Overall, coefficients of leverage deviation and overleverage variables are significant, whereas those of underleverage are not. As presented in Model 2, the deviation from target capital structure and probability of bidders

**TABLE 7** Regression of probability of minority acquisitions. This table presents the results of probit regressions of the probability of bidders engaging in minority acquisitions on our interested variables. The dependent variable is a dummy variable that equals 1 if the acquirer seeks to acquire less than 50% of the target share and own less than 50% of the target share after the deal, and 0 otherwise. Financial constraints are measured by the market value

Variable	Model 1		Model 2		Model 3	
	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect
MarLev	0.295*** (0.000)	0.117				
LevDeficit			0.277*** (0.002)	0.110		
Overleveraged					0.071** (0.037)	0.028
Underleveraged					0.012 (0.703)	0.005
Relative size of the deal	0.134*** (0.000)	0.054	0.119*** (0.000)	0.047	0.130*** (0.000)	0.051
Acquirer slow growth (a)	-0.074** (0.015)	-0.029	-0.0798*** (0.000)	-0.031	-0.079** (0.019)	-0.031
Interaction of (a) and acquirer high free CF	0.266*** (0.000)	0.105	0.298*** (0.000)	0.118	0.300*** -0.000	0.119
Acquirer MTB	0.029** (0.023)	0.011	0.003 (0.825)	0.001	-0.003 (0.829)	0.001
Target ROA	-0.001* (0.064)	-0.0005	-0.011 (0.118)	-0.004	-0.001* (0.068)	-0.005
GDP per capita	0.074*** (0.002)	0.029	0.116*** (0.000)	0.046	0.695*** (0.002)	0.027
Capitalization per GDP	0.001*** (0.000)	0.0004	0.001*** (0.000)	0.004	0.001*** (0.000)	0.0004
<i>Country governance</i>						
Voice and accountability	-0.052*** (0.004)	-0.020	-0.086*** (0.000)	-0.034	-0.044** (0.015)	-0.017
Political stability	-0.265*** (0.000)	-0.104	-0.261*** (0.000)	-0.104	-0.268*** (0.000)	-0.107
Cross-border dummy	0.163*** (0.000)	0.065	0.171*** (0.000)		0.171*** (0.000)	0.068
Same industry dummy	0.135*** (0.000)	0.054	0.139*** (0.03)	0.083	0.130*** (0.000)	0.051
Constant	1.383*** (0.000)		1.000*** (0.000)		1.444*** (0.0001)	
LR Chi <sup>2</sup>	1301.63		1081.45		1367.95	
Observations	1085		724		724	

Note: Variables are defined in Table 3. Model 1 examines the effects of leverage ratio. Model (2) and model (3) examine the impacts of deviation from target capital structure and overleverage deficit respectively. Although not reported, model includes industry and year effects. Standard errors are clustered by industries. *p* values are presented in parentheses.

\*\*\*, \*\*, \* Significant at the 1%, 5% and 10% levels, respectively.

undertaking minority acquisitions are positively related to the probability of bidders undertaking minority acquisitions. An increase of 1% in target capital deviation increase the probability of minority acquisition decisions by 27.7%. Meanwhile, in Model 3 overleveraged firms increase 7% the probability of bidders undertaking minority positions in the targets as compared to target-leveraged firms. The impacts of underleverage on acquisition decisions are positive but lacks of statistical significance. The trade off the bidder faces in launching a bid is the cost of funding that grasp for control. One way to think of this is as trading off pushing the target management around versus being pushed around by the newly formed joint entity's creditors who await re-payment of their funds. Once the bidder has 50% of the target they can do what they will with its assets. Similarly, post-acquisition, creditors can take control of the post-acquisition firm that fails to meet its debt re-payments by falling into default on its debts. So, the downside risk is conditional but potentially high, while the upside is unconditional. This may be reflected here in the fact that the result reported above comes from overleveraged firms, with the underleverage effect being insignificant statistically. In this regard, our finding is consistent with Harford et al. (2009) and Uysal (2011) and Agyei-Boapeah et al. (2019).

Collectively, these empirical findings demonstrate that the impacts of financial constraints on minority acquisition decision are mainly driven by overleveraged firms rather than by underleveraged firms.

The estimated coefficients of the firm specific variables are consistent with our expectations. In particular, the correlation coefficient for *Relative size of the deal* are positively significant in all of our three models, indicating that relatively larger target deals are more likely to engage in minority acquisitions. In other words, the dilution level of the target managerial incentives, which are likely to be higher when the target firm size is relatively smaller to the bidders, is positively associated to minority acquisition, and this is consistent to Maksimovic and Phillips (2001). The interaction of *Acquirer Slow Growth* and *Acquirer High Free CF* is positive and significant, confirming the influence of bidder managerial objectives in acquisition activities. The results suggest that the likelihood of bidders engaging in a minority acquisition significantly decreases with the acquirers' slow growth rate but increases by the interaction between the bidder's high free cash flow and acquirers' slow growth opportunities. Growth opportunities (measured by market to book value) and return on assets seem unlikely to determine the probability of bidder to undertake minority, which aligns with the agency-motivated acquisition hypothesis that managers engage in acquisitions to pursue their own

interests. Lastly, the same Industry also shows a positive impact on the probability of minority acquisitions.

On another note, at country level, *Voice and Accountability* and *Political Stability and Absence of Violence/Terrorism* in the target countries are found to be negatively related to the likelihood of undertaking minor acquisitions of international bidders. The coefficients for both variables are significant at 0.001% in our model. There is a strong negative relationship between the probability of taking minor acquisitions of international bidders and the perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as having more freedom of expression, freedom of association and free media. There is also a strong negative relationship between the probability of taking minor acquisition of the bidders and the perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism in the target country. Minority stakes backed by a stable state are viable. When states are unstable, bidders need majority stakes. Surprisingly, two variables of the market development, *GDP per Capita* and *Capitalization per GDP*, are reported positively related to the likelihood of bidders undertaking minority acquisition. As such, minority acquisitions appear to be more common in countries with more developed market.

**TABLE 8** Target capital structure regression with dependent variable is book leverage

Variable	Coefficient	Standard error
Book leverage <sub>t-1</sub>	0.7584***	0.005
Size <sub>t-1</sub>	0.0047***	0.000
MTB <sub>t-1</sub>	0.0021***	0.000
Profit <sub>t-1</sub>	-0.0061***	0.000
NDTS <sub>t-1</sub>	-0.0017	0.011
Tang <sub>t-1</sub>	0.0126***	0.003
SE <sub>t-1</sub>	-4.93 e-06	0.000
R&D <sub>t-1</sub>	-0.0051	0.013
R&DDummy <sub>t-1</sub>	0.0042***	0.001
Industry dummies	Yes	
Year dummies	Yes	
Constant	0.039***	0.005
Number of observations	17,371	

*Note:* This table presents the average coefficient estimates from the standard regressions of target book leverage ratio over key financial variables used in the literature. Book leverage is the ratio of book value of debts over book value of total assets of firms. Other variables are defined in Table 3. We add industry/year indicator variables to control for industry/year effects. Standard errors are adjusted by acquiring nations.

\*\*\*, \*\*, \* Significant at the 1%, 5% and 10% levels, respectively.

**TABLE 9** Robustness test: Regression of probability of minority acquisitions—book measurement. This table present results of probit regressions of the probability of bidders' engaging in minority acquisitions on our interested variables. The dependent variable is a dummy variable that equals 1 if the acquirer seeks to acquire less than 50% of the target share and own less than 50% of the target share after the deal, and 0 otherwise. Financial constraint variables are measured by the book value

Variable	Model 1		Model 2		Model 3	
	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect
Book leverage	0.597*** (0.000)	0.238				
LevDev			0.280** (0.044)	0.111		
Overleveraged					0.070** (0.040)	0.028
Underleveraged					0.009 (0.780)	0.003
Relative size of the deal	0.135*** (0.000)	0.053	0.118*** (0.000)	0.046	0.130*** (0.000)	0.051
Acquirer slow growth (a)	-0.022 (0.446)	-0.009	-0.053*** (0.077)	-0.021	-0.071** (0.036)	-0.028
Interaction between (a) and acquirer high free CF	0.276*** (0.000)	0.110	0.297*** (0.000)	0.118	0.300*** (0.000)	0.122
Acquirer MTB	0.011 (0.365)	0.004	0.009 (0.481)	0.003	-0.011 (0.426)	-0.045
Target ROA	-0.001* (0.064)	-0.0005	-0.011 (0.119)	-0.0004	-0.001* (0.061)	-0.0005
GDP per capita	0.073*** (0.002)	0.029	0.114*** (0.000)	0.045	0.067*** (0.003)	0.026
Capitalization per GDP	0.001*** (0.000)	0.003	0.001** (0.000)	0.0004	0.001*** (0.000)	0.0004
Cross-border dummy	0.157*** (0.000)	0.062	0.169*** (0.000)	0.067	0.174*** (0.000)	0.069
<i>Country governance</i>						
Voice and accountability	-0.058*** (0.002)	-0.023	-0.087*** (0.000)	-0.034	-0.047*** (0.010)	-0.018
Political stability	-0.57*** (0.000)	-0.100	-0.255*** (0.000)	-0.101	-0.261*** (0.000)	-0.104
Same industry dummy	0.125*** (0.000)	0.074	0.140*** (0.000)	0.055	0.128*** (0.000)	0.051
Constant	1.381*** (0.000)		0.988*** (0.000)		1.444 (0.000)	
LR Chi <sup>2</sup>	1306		1071		1362	
Observations	1085		647		647	

Note: Book leverage is the ratio of book value of debts over book value of total assets of firms. Other variables are defined in Table 3. Model 1 examines the effects of leverage ratio. Model 2 and Model 3 examine the impacts of deviation form target capital structure and overleverage deficit, respectively. Although not reported, model includes industry and year effects. Standard errors are clustered by industries. *p* values are presented in parentheses.

\*\*\*, \*\*, \* Significant at the 1%, 5% and 10% levels, respectively.



#### 4.4 | Book leverage measurement of capital structure, deviation, and over-levered

In the previous section, we used market leverage (denoted MarLev), defined as the book value of debts in the year over the market value of firms as a measure of leverage, in all of our three models of analysis. This market value approach has been used in many previous studies on capital structure (Ouimet, 2013; Uysal, 2011 among others). Nevertheless, Sunder and Myers (1999) argue that some managers prefer using book leverage when calculating the leverage ratio of firms in practice. The reason is that market values are volatile and it difficult to obtain the market value of the debt. In this section, we use book leverage, which is calculated as acquirers' book value of debts over the book value of total assets in the firms. Particularly, we use this variable to perform the robust check for the calculation of the target capital structure in Table 5, the deviations from the target capital structure, and the relationship between our main independent variables and the probability of bidders undertaking minority acquisition. (Table 7). The two-stage estimation procedure remains as described in Section 3.3. The regression results for target capital structure estimates are presented in Table 8 and the estimates of the factors that have impact on the probability of bidders undertaking minority acquisitions are shown in Table 9.

Overall, all of the determinant coefficients of target capital structures in regression for book leverage in Table 8 are consistent with the determinants of target capital structures for market leverage in Table 5. More importantly, the results obtained for Table 9 are consistent with Table 7. Similar to Table 7, in Table 9 we measure financial constraints that include three dimensions (i) capital structure variable in Model 1, (ii) leverage deviation variable in Model 2, and (ii) over-levered variable in Model 3. We notice that the magnitude of coefficients and the marginal effects of variables are changed. Especially in Model 1, the book value of leverage still has a positive significant relationship with the probability of bidders engaging in minority positions but the coefficient is higher. In addition, some other variables in regression on book leverage are only slightly less statistically significant, compared to the determinant coefficients in the regression on market leverage presented in Table 7. For example, in Model 2, and Model 3 the leverage deviation, and Overleverage variables are significant at a 5% level whereas the significant level in regression on market leverage is 1%. Briefly, the signs and significant levels of our key variables reported in Table 7 are maintained in Table 9.

The financial variables correlation coefficients of Table 9 are consistent with Table 7. Managerial incentives

(measured by *Relative size of the deal*) are positively significant in all of our three models in Table 9, indicating that relatively larger target deals are more likely to engage in minority acquisitions. The dilution level of the target managerial incentives (which are likely to be higher when the transaction is relatively smaller to the bidders) is positively associated to minority acquisition, (Maksimovic & Phillips, 2001). Further, the interaction of Acquirer Slow Growth and Acquirer High Free CF is positive and significant, confirming the influence of bidder managerial objectives in acquisition activities. It suggests that the likelihood of bidders engaging in a minority acquisition significantly decreases with the acquirers' slow growth rate but increases by the interaction between the bidder's high free cash flow and acquirers' slow growth opportunities. Market to book value or growth opportunities and Target ROA seems unlikely to determine the probability of bidder to undertake minority, which suggest that managers engage in acquisitions to pursue their own interests rather than grow opportunity.

Repeating the above results in Table 7, two variables Voice and Accountability and Political Stability and Absence of Violence/Terrorism in the target countries remain strongly negatively related to the likelihood of undertaking minor acquisitions of the bidders. This again confirms the impact of the perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as having more freedom of expression, freedom of association, and free media and the perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism in the target country on the probability of taking minor acquisitions of international bidders.

The variables that measure market development, GDP per Capita and Capitalization per GDP, in Table 9 are also reported positively related to the likelihood of bidders undertaking minority acquisition. This confirm that minority acquisitions appear to be more common in countries with more developed market.

Lastly, the same Industry also shows a positive impact on the probability of minority acquisitions.

As such, the findings of our study are robust not only to different measures of financial constraints in Models 1, 2 and 3, but also to both market and book value measurements of financial leverage. Again, there is a reasonably large drop in the number of observations as the analysis moves from absolute leverage to deviations from target leverage due to the reason that we only take values of leverage deviation within quartile Q1 and Q4, which overall is 11,586 observations. The rest are quartile Q2 and quartile Q3 (i.e., 17,371–11,586 observations) are dropped from this section of our analysis.

## 5 | CONCLUSION

This study investigates the relationship between financial constraints and the probability of bidders undertaking a minority rather than majority acquisition. We find that the likelihood of bidders undertaking a minority position increases with a higher level of financial constraints, including financial leverage ratio, the deviation from their target capital structure, and overleverage deficit. However, we also find that the effect of leverage deviation and overleverage deficit on the likelihood of bidders engaging in a minority or majority acquisition is asymmetric for underleveraged and overleveraged bidders. While the estimated coefficients of the effect of overleverage acquirers are positively statistically significant, that of underleverage is insignificant. As such, firms with more financial constraints are more likely to involve in minority acquisitions in comparison to firms with lower leverage; and firms that are overleveraged relative to their target capital structure are more likely to engage in minority acquisitions than underleveraged firms.

In addition, our findings suggest that the probability of bidders undertaking a minority acquisition significantly decreases with the acquirers' slow growth rate but increases by the interaction between the bidder's high free cash flow and slow growth rate or low growth opportunities. Bidders are also less likely to take a minority position if the target is operating in countries with a high degree of Political Stability and Absence of Violence/Terrorism. This is also shown in countries where individuals are highly able to participate in selecting their government, as well as having more freedom of expression, freedom of association, and free media. Surprisingly the likelihood of undertaking a minority acquisition increases with the *relative size of the deal*. We also find that minority acquisitions are more common in the same industry and a country with a more developed market.

Finally, several questions arise. First, our results suggest that the relationship between firms' leverage deviation and the probability of bidders undertaking a minority acquisition is significantly positive. However, firms with a high debt ratio may prefer undertaking minority acquisitions to majority acquisitions to diversify their risk. Therefore, future research could further examine the risk diversification behaviour of acquirers in their acquisition activities. Moreover, the fact that the deviation from the target capital structure negatively affects the investment behaviour suggests managers will attempt to mitigate these effects by minimizing the deviation between actual and target debt ratios. Harford et al. (2009) explains that bidders tend to adjust their capital structure in advance to build up

more financial slack for financing future acquisition. As such, a question raised is whether the changes in capital structure in the pre-acquisition period affect the bidders' equity ownership choices. Additionally, we document that the effects of underleverage on acquirers' decisions are not significant. A future research will need to explain why the effect of leverage is not symmetrical. Finally, how do bidders with a high level of target leverage deviation choose between acquiring a minority stake or adjusting their capital structure to pursue a majority acquisition? We leave these questions for future research.

### ACKNOWLEDGEMENT

We would like to thank the Editor and two anonymous reviewers for their valuable feedback and constructive criticism that have helped us to revise the manuscript. We also acknowledge the valuable comments and contributions of Len Skerratt, Richard Jones, John Fletcher, Ngoc Vuong, and participants at British Accounting and Finance Association Workshop on quantitative research 2018.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon request.

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### ENDNOTE

<sup>1</sup> Source: Our data are collected from Refinitiv Eikon and Data-Stream Advance.

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**How to cite this article:** Nguyen, A.-N., Kernohan, D., & Nguyen, T. (2024). Minority versus majority: The choice of acquisition in Asia-Pacific countries. *International Journal of Finance & Economics*, 29(1), 1125–1140. <https://doi.org/10.1002/ijfe.2726>