The Impact of Cross-border M&A Deals on Firm-level Profitability

Research Article

Yupu Lin[1*]

[1] Jing He Limited, Oxford, OX2 7JJ, UK.

Abstract

This paper exploits hitherto unused data to compare the returns to completed takeovers, with the returns generated by firms that explored the possibility of merger but subsequently did not follow through. We find evidence that cross-border M&A sare motivated by efficiency rather than resource seeking. We also find that firms involved in completed M&A shave a lower level of profitability one year after the merger compared with those with uncompleted deals. Firms are less likely to obtain both synergy and managerial disciplinary effects post-merger.

Keywords: M&A; Profitability; Cross-border Investment; Rumours.

Introduction

The large literature shows an inconclusive relationship between cross-border M&A and firm's profitability [10, 22, 23, 33]. Foreign acquisitions can lower the extent of competition due to a number reduction of firms in the host market, providing the acquirer with strong monopoly power and abnormal returns [62]. Most positive findings about profitability are supported by using cash flow measure [5, 8, 11, 18, 31, 38, 44, 58]. However, potential gains may be offset by high costs, through coordination problems, or unforeseen costs managing resources internationally [24]. This leads to a decline in profitability after M&A especially when examining other profitability measures such as ROE, ROA, sales and profit margin [14, 21, 34, 50, 52, 53][5]. Accordingly, the findings concerning the effects of international takeover on profitability varied [49].

A common problem in the M&A performance literature is to establish the counterfactual position - what the performance of the firms would had been had they not merged. The most common approach to this is to employ an econometric approach that seeks to control for the "sample selection problem" (that performance may be related to the propensity to engage in M&A), see for example [17, 32].

This paper offers an alternative to this using a unique takeover rumour[6] dataset to build an M&A likelihood model and assess the post-M&A firm performance from a different perspective. With comparing deals that went ahead with those explored but subsequently abandoned in the period of 2002 to 2011, the paper examines the impact of M&A on firm performance in terms of profitability. Our analysis seeks to distinguish synergy effects and disciplinary effects of M&A by differentiating the pre-acquisition profitability of targets, and exam our findings in the context of both acquirer and target firms. The standard way of approaching this problem is to compare the profitability of M&A via comparing pre- and post-acquisition operating performance.

The further contribution of this paper is developed from this type of comparative group. We extend the existing empirical evidence about rumoured deals in the context of cross-border M&A and explore the likelihood of M&A from a deal perspective rather than predicting a likely target. Previous research only focuses on the factors which initiate M&A activity, while we identify what

[5] The mixed results on abnormal return in event studies and on operating profitability in accounting studies are shown in table 1a of Appendix.
[6] This is a deal status indicating that there is an unconfirmed report, or an announced deal but the identity of one of the parties is not known, e.g. Company A is to buy a German engineering firm for GBP 5 million. (Source from Zephyr user guide).In this paper, we reference rumoured but uncompleted M&A as rumoured M&A or deals and rumoured and completed M&A as completed M&A or deals.

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factors determine an M&A deal carry out and complete finally. Furthermore, we prove the difficulty in achieving synergy effect for M&As by comparing the completed deals with uncompleted ones.

The paper is organised as follows. Section 2 reviews the theory on the determinants of cross-border M&A. Section 3 summarises the wide range of theories explaining post-merger performance and derives a number of testable hypotheses. Section 4 outlines our empirical methodology based on the use of rumoured data. Section 5 describes the data and provides summary statistics. Section 6 presents and discusses our results. Finally, a brief conclusion follows in section 7.

The Determinants Of Cross-Border M&A

Before turning to an examination of pre- and post-performance, it is necessary first to consider the motives for mergers, and the importance of these motives in explaining subsequent performance. Previous empirical studies have exploited takeover likelihood through predicting potential takeover targets [6, 58, 60]. Studies have identified the factors that influence the likelihood of a takeover target [6, 20, 36, 55, 59]. The problem with estimating the likelihood of a takeover is that whilst we observe takeovers that are completed, there is a large unobserved number of others that could have taken place but did not. The problem is therefore obtaining a suitable comparative group. Previous literature has solved this problem by defining non-target firms via propensity matching score. In contrast, we compare the completed cross-border M&As and those deals which are uncompleted in the end after experiencing the takeover rumours.

The existing theoretical literature provides a guide to the firm-level factors that we should consider when examining the determinants of cross-border M&As. Firstly, high profitability in acquirers is argued to impede the completion of cross border M&A due to the potential managerial resistance from targets and acquirer's reluctance on risk exposure in potentially losing existing profitability when acquiring a new firm [42]. Secondly, according to [41] free cash flow (FCF) hypothesis, high liquidity will indulge acquirer's managements in managerial discretion, which causes wayward selection on M&A deals [46]. Such deals may be less likely to be completed in the end due to opposition by shareholders and disapproval by boards.

The existing literature introduces motives of cross board M&A from the resource based view (RBV) which states that the competitive advantage of a firm lies primarily in a bundle of valuable intangible assets [2, 16, 64].The complimentary intangible assets possessed by targets may therefore attract acquirers to attempt takeovers [54]. However, according to transaction costs theory, these deals may not ultimately be completed due to lack of consensus between both targets and acquirers on the value of assets and transaction price [19]. Given these obstructive factors, it is interesting to investigate their effect on performance of M&A in terms of firm's profitability.

Explanations for Post-acquisition Performance

The Impact of MNEs on Post-M&A Profitability

Our first contribution is to discuss the difference between M&As involving MNEs, and those involving purely domestic firms, whether they are cross border or not. Theoretically, we expect there to be a significant difference, though typically the literature explores either only international M&A, or foreign takeovers, without considering whether this involves pre-existing multinationals. The existence of multinational firms is typically founded on the basis of ownership advantages, which facilitates successful internationalisation [35]. The essential argument here concerns the likely impacts on a host country firm of foreign takeover. This suggests that the international M&A are found to be affected by the pre-acquisition performance of firms. Some literature finds that foreign acquirers choose more profitable domestic targets [27], for Korea in the post-liberalization period [45], for the US;[28], for Japanese manufacturing sector; [11], for the US with emerging markets investors). It is necessary to distinguish whether the improvement of post-acquisition profitability results from the effect of takeovers or other reasons such as firm growth per se. For example,[5] argue that the growth in profitability is more significant for buying unprofitable targets than buying profitable ones. Given such evidence, most research adopts the difference-in-difference matching approach to control the potential selectivity bias[11, 29]. However, this literature pre-supposes that the foreign firm possesses the necessary ownership advantages, which in turn are transferred through knowledge transfer or other mechanisms into the acquired firm, thus improving its performance. However, as we discuss above, there are many motives for FDI, and also for foreign acquisition, including access to markets, resources or technology, all of which can be independent of ownership advantages. Our first hypothesis concerns the importance of pre-existing multi-nationality.

Multinational enterprises (MNEs) are generally found to show superior performance than their domestic counterparts. This performance advantage stems from MNE theory which defines that MNEs are endowed with specific comparative advantages such as a superior production technology or organizational superiority [10, 25, 9]. As also, foreign MNEs often bring domestic targets with their ownership advantages such as higher capital intensity, which results in a rise in post-M&A profit margins via growth in (labour) productivity [4]. Therefore, the argument could bring the first hypothesis.

H1 Ownership advantage is a key driver of performance in international M&As

Post-M&A Profitability of Acquirers in International Takeovers

Our second hypothesis concerns the potential for success of international M&A in the absence of pre-existing multinationality. From a theoretical perspective, the traditional international business and finance literature suggests that the global diversification of business and increased market power of the MNEs stemming from M&A will increase profitability [26]. Alternatively, the rumour of a merger may be enough to discipline underperforming firms[7] since this acts as a threat to the management of targeted firm, which can stimulate managerial performance [39, 56]. Regardless of the source of gains, these results offer supports for the potency of takeover rumour and thus for the beneficial effect of the market for corporate control.

The literature also provides a number of possible explanations for why the firm's profitability may decline following a completed acquisition. Firstly, the complexity of M&A operation could make the profitability decline during the implementation of actual acquisition [50]. Secondly, the benefit of tax burden curtailment attracts the foreign owners often to be willing to accept lower profit margins [4]. Thirdly, overpaying for complementary assets will compress the acquirer's profit margin because a high level of complementarities in assets between acquirers and targets will increase the acquisition price when thet arget's assets become more strategically valuable for acquirers [37, 47, 63].

H2 In the absence of any pre-existing multi-nationality, cross border MA perform worse than if the two firms had not merged together.

The Difficulty in Realising Synergy Effect on Post-acquisition Profitability

There is a synergy effect if the combined value of the new venture created by M&A exceeds the sum of the values of the individual firms. Thus, profitable firms are more likely to be acquired due to the benefit of a further synergistic improvement in the firm performance [45]. If these effects are realised then post-merger performance can be improved [11]. In the literature on multinational firms, technological knowledge, brand name capital and organisational capabilities are frequently listed as advanced intangible assets through which synergy effects can arise [28]. Following [25] internalisation theory of multinational expansion, firms are endowed with firm-level specific advantages (FSA) [40], such as a superior production technology or organisational superiority, can then result in improved post-merger performance [48]. The possession of intangible assets may facilitate firms to achieve the superior earning ability [9, 10]. If these profitable firms are acquired as the targets, they may benefit from the positive synergy effects together with their acquirers. However, there are a number of reasons why perceived synergy effects may not be realised. Firstly, it is problematic in transferring technological knowledge and brand name recognition or reputation across foreign firms [10]. For example, the restructuration of target assets frequently damage its capabilities, which leads to a deteriorated post-acquisition performance (Capron, 1999). Secondly, the licensing of brand name exposes a danger of negative externalities due to sharing intangible assets(e.g. reputation and distribution channels) and simultaneously cultivating of potential rivals [30]. Thirdly, the difficulty in transferring some competitive intangible advantage such as superior organisational routines and practices makes the success rate of international M&A integration lower [3, 7]. The high costs on training and executing such organisational routines and practices reduce the firm's profit margin after M&A. Furthermore, some inadaptability is revealed when applying certain intangible advantages in the different countries especially under a distant culture context [8]. These all result in a reduced post-merger performance.

H3 The difficulty in assimilating intangible assets and generating synergy leads to a worse completed M&A performance when FSA is driven by intangible assets

Rumoured M&A Deals as A Comparative Group

In the pre- versus post-M&A performance approach, there is usually a selection bias. The focus of concern is whether an acquired firm would have had a lower firm's profitability, if it had not been acquired by other foreign firms. This is so called unobservable counterfactual situation. It is hard to assess the imponderable counterfactual situations of firm's profitability where M&A is inexistent. Specifically, the post-acquisition firm performance may be a feature of observable firm's characteristics, related to either pre-acquisition performance or the prospects for future growth [5]. Thus, the performance of the non-acquirers or non-targets does not offer a good estimate of the counterfactual case in non-experimental settings.

Given the evidence generally found that foreign firms buy profitable targets, most recent studies have addressed the selectivity bias by adopting a difference-in-difference approach in conjunction with propensity score matching techniques [29, 51]. However, one potential concern with propensity matching estimation is that the control group of non-target population generated by matching approach just provides the suspected targets. These suspected targets are plausible but fallacious cases because they only have certain similar range of observable characteristics with the actual target firms. They are even irrelevant firms who are never selected into the consideration of the M&A. In other words, when considering whether firms conduct takeover, the control group selected from the non-targets population with matching technique is either the firm which satisfies the conditions of M&A but is not acquired or other irrelevant firm. Whether a target is acquired or not might subject to other factors which do not necessarily determine M&A. Thus, the matching approach in the previous literature can only identify the factors which differentiate whether a firm is the target or not in the research of M&A.

The use of takeover rumour data overcomes the aforementioned limitation of propensity matching techniques. In terms of takeover rumour data, the existing literature primarily explores the effects of takeover rumours date and announcement date on predicting likely targets in M&A activities [13, 61]. Alternatively, they assess the effect of takeover rumours on the shareholder wealth [1, 15, 43, 65]. Although not all of takeover rumours end in an actual acquisition [15], the takeover rumours provide a potential pool of M&A deals with a linkage between potential acquirers and targets. Not only the data from rumoured deals provides comparable sense in identifying the similarity of in range of completed deals characteristics, but also they are ever potential involving firms who just did not complete the deals due to some reasons. Whether or not the cross-border M&A is completed comprises a comparison between the actual international takeover and the situation had the takeover not taken place after experiencing takeover rumours. As a potential but abandoned international M&A, rumoured deals naturally provide a feature of counterfactual population, which can overcome the potential selective bias. Therefore, this control group will facilitate to test what factors may influence the completion of M&A and how the M&A affects firm's profitability.

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[7] Research on the issues raised by rumoured M&A tend to have been conducted with event study methodology and share price data (Antweiler and Frank, 2004; Clarkson et al., 2006; Lachapelle, 2011; Wortche and Nguyen, 2011). Their results show abandoned targets making and sustaining positive returns, with rather more mixed results for acquirers after a rumour.

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Data and Method

Data Source and Data Description

This research has utilized two large databases provided by Bureau van Dijk[8] which are Zephyr and Orbis. Zephyr contains widely domestic and cross-border M&A deals. Orbis contains comprehensive and rich firm-level information. Both databases are provided by Bureau van Dijk, a leading electronic publisher of annual account information on private and public firms. The cross-border M&A deals are selected to compose a large dataset spanning the period 2002-2011. The firm information of both targets and acquirers has been incorporated into the dataset of cross-border M&A deals. According to the definition in Zephyr, the research selects the M&A deal with the criteria at least £1 million or equivalent in deal value or at least 2 percent of a stake acquisition.

Furthermore, this research also uses a dataset of GDP growth rate for each country which is extracted from the International Country Risk Guide (ICRG) historical database. This is a wide selection of data from specific tables as published monthly in International Country Risk Guide from 1984 until the present, including all countries or their predecessors monitored by ICRG. These data include Political, Economic, Financial and Composite Risk Ratings, which are sets of data with the risk components used to calculate each rating and other sets with the actual monthly data variable used to calculate either the Economic Risk Rating or the Financial Risk Rating, as recorded contemporaneously for every country monitored by ICRG in each particular month.

Following [24], horizontal, vertical and conglomerate M&A are defined with 2 digit NACE industry code. The distribution of population which includes 19,685 cross-border M&A deals is listed in table 1. Conglomerate M&A[9] account for a large proportion of total cross-border M&A deals. There are 1,044 rumoured conglomerate deals and 11,095 completed conglomerate deals. The second largest number of M&A type is horizontal M&A which is consist of 798 rumoured deals and 6,155 completed deals. Vertical M&A is consist of 52 rumoured deals and 541 completed deals.

From table 2, during this decade, there are 11,280 acquirers and 19,685 targets in total from 164 countries across the world. The US is the biggest cross-border M&A home country which conducts 2,418 international M&A attempts and accounts for 21.44% of total international deals. As for the target side, the UK becomes the biggest cross-border M&A host country which receives 2,798 bids and accounts for 14.21% of total international deals. The majority of involving firms is located in the North American area and West European area. Other acquirers and targets mainly come from OECD countries, Enlarged EU area, East Asian area and Oceania area. Generally, it shows that the developed countries consist of main outward and inward FDI countries. Whereas, less developed countries primarily import capital from more developed countries. Most of cross-border M&A activities take place in North American and Western European countries.

In order to detect the synergetic and disciplinary effects, this study will investigate the post-M&A performance by differentiating the deals between acquiring high and low profit targets. The bench mark of pre-M&A target profitability level is set to be the average value (4.99%) of target's profit margin in the one year prior to the takeovers. Therefore, this study will divide the main sample into two subsamples based on the bench mark of pre-M&A target profitability level, which are high pre-profit target subsample and low pre-profit target subsample. Table 3 below will show the distributions of frequency and percentage about cross-border M&A status in the deals across the pre-M&A target subsamples. From table 3, 9.62% (1,894) of international deals are rumoured but uncompleted, 90.38% (17,791) of them are rumoured and completed finally. Most international deals were rumoured and then followed with completion. More specifically, in the deals with high profit or low profit targets, both completed international M&A (87.44% and 87.40%) also overwhelm the uncompleted ones (12.56% and 12.60%) in numbers of deals. Whilst, the number of deals with high profit targets (4,157) are slightly less than those with low profit firms (4,341), which are account for 21.12% and 22.05% respectively. Similarly, the numbers of high profit targeted international M&A (27.56% and 20.43%) are slightly less than that of low profit targeted ones (28.88% and 21.33%) respectively

Table 1. The distribution of cross-border M&A types and deal status.

	Status	Value
All	Completed	17,791 (90.38 %)
	Rumoured	1,894 (9.62%)
	Total	19,685
Horizontal	Completed	6,155 (88.5%)
	Rumoured	798 (11.5%)
	Total	6,953
Vertical	Completed	541 (91.2%)
	Rumoured	52 (8.8%)
	Total	593
Conglomerate	Completed	11,095 (91.4%)
	Rumoured	1,044 (8.6%)
	Total	12,139

Source: Authors' calculations from Orbis and Zephyr data set.

8 Bureau van Dijk has wide range of company information products that include databases of company information and business intelligence for individual countries, regions and the world. Orbis, combines information from around 100 sources and covers over 100 million companies. Zephyr, contains information on M&A, IPO, private equity and venture capital deals and rumours, where there is no minimum deal value for a transaction to be included.
9 Conglomerate M&A is one form of M&A process which deals happened between two companies in irrelevant industries respectively. The objective may be diversification of capital investment (DePamphilis, 2009).

Table 2 The distributions of acquirer and target across main countries.

	US	UK	Germany	Canada	France	Sweden	Switzerland	Italy	Spain	Russia	Others	Total
Acquirer	2,418	1,164	796	646	643	466	367	337	320	213	3910	11,280
Proportion	21.44%	10.32%	7.06%	5.73%	5.70%	4.13%	3.25%	2.99%	2.84%	1.89%	34.66%	100%
Target	2,575	2,798	1,768	844	1,210	663	489	596	755	495	7492	19,685
Proportion	13.08%	14.21%	8.98%	4.29%	6.15%	3.37%	2.48%	3.03%	3.84%	2.51%	38.06%	100%
Source: Authors' calculations from Orbis and Zephyr data set.												

Table 3. Distribution of cross-border M&A and pre-M&A target feature.

Pre-M&A target	Uncompleted MA		Completed MA		Total	
No profit value	825	7.37%	10362	92.63%	11187	100%
	43.56%		58.24%		56.83%	
High profit	522	12.56%	3635	87.44%	4157	100%
	27.56%		20.43%		21.12%	
Low profit	547	12.60%	3794	87.40%	4341	100%
	28.88%		21.33%		22.05%	
Total	1894	9.62%	17791	90.38%	19685	100%
	100%		100%		100%	
Source: Author's calculations from Orbis and Zephyr dataset.						

in terms of both uncompleted deals and completed ones.

Variables

Many measures, such as cash flow, net income, sales, return on assets or equity, EPS, firm liquidity and profit margins, are used to assess the firm's profitability, particularly in the examination of operating gains of takeovers by accounting studies. Nevertheless, it is doubtful that the profitability of post-M&A could be reflected truly underlain by cash flows because the increase in cash flow may not result from the improvement of profit sometimes [12]. It could result from the disposal of some unwanted assets within the company or written off on the previous non-receivable credit.

The firm's information was picked to proxy a number of attributes or dimensions of economic performance, financial position and deal status, including: profitability, cash flow, corporate financial leverage, intangible asset, firm size, multinational status and completion of M&A. In this research, gearing ratio is used to measure corporate financial leverage. The profitability is measured by profit margin. Total assets of firms are employed to measure firm size. In this research, several control variables will be used such as cross-border M&A type, GDP growth for host country, year and industry. The descriptions for all variables are listed in table 4 below.

Modelling the Likelihood of M&A

In order to identify the determinants of cross-border M&A, a probit model will be employed because there are two parts of observations in the dependent variable. This research will construct takeover rumour and actual takeover into the dependent variable, which is different from using probability of target as a dependent variable in previous literature. Thus, an M&A likelihood model will be developed to explore the determinants of completed deals, using a vector of firm-level factors for both the target and acquiring firm. The estimation models will be examined with using below equations. The equation includes all independent variables and control variables. They are listed as follow:

$$y(1/0)_{it} = \beta_0 + \beta_1 T_{it} + \beta_2 A_{it} + \beta_3 Listed_{it} + \beta_4 GDP_{it} + \beta_5 MAtype_{it} + v_t + v_c + \varepsilon_{it} \quad (1)$$

where $y_1(1/0)it$ is a binary variable, capturing the M&A's status in the year of takeover rumour or completion, which takes value 1 if the M&A's status of testing firm is completed, and takes value 0 if its M&A's status is rumoured. The vector T_{it} and A_{it} respectively capture a set of target's and acquirer's characteristics such as profit margin, cash flow, gearing ratio, intangible asset and total asset. These variables are also observed in the acquisition event period (t) to capture acquirer's profitability, liquidity, corporate financial leverage, intangible resource and firm size. Finally, the error term is made up of a time-specific component (v_t), an encoded 2-digit country-specific component (v_c), and an idiosyncratic error term ε_{it}.

Modelling Post-acquisition Profitability

This research applies the dataset with pooling cross-section firms within time period. The baseline model is used for assessing impacts of cross-border M&A on acquirer's profitability, takes the following form:

$$APM_{it} +1 = \beta_0 + \beta_1 MA_{it} + \beta_2 APM_{it-1} + \beta_3 Y_{it-1} + \beta_4 MAtype_{it} + v_t + v_j + \varepsilon_{it} \quad (2)$$

Where APM_{it+1} refer to the profit margin of acquirers one year after cross-border M&A being completed or rumoured. This ensures that the firm's financial information is complete for a whole financial year. For acquirer's profitability, the model uses all variables from acquirer side information. The key variable is MA_{it} which refers to the dummy of cross-border M&A completions or not. It is a binary variable, capturing the M&A's status, which takes value 1 if the M&A's status of testing firm is rumoured and completed, and takes value 0 if its M&A's status is rumoured but uncompleted. Testing if this dummy is statistically significant in

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Table 4. Definition of independent and dependent variables.

	Variable	Note
Target and Acquirer	Profit Margin$_{t+1}$	(Profit before tax / Operating revenue) * 100% in one year after M&A or rumour
	Profit Margin$_{t-1}$	(Profit before tax / Operating revenue) * 100% in one year prior to M&A
	Cash flow$_{t-1}$	Profit for period + Depreciation prior to M&A
	Gearing Ratio$_{t-1}$	((Non-current liabilities + Loans) / Shareholders funds) * 100% prior to M&A
	Total Asset$_{t-1}$	Fixed assets+ Current assets prior to M&A
	Intangible Asset$_{t-1}$	All intangible assets such as formation expenses, research expenses, goodwill, development expenses and all other expenses with a long term effect prior to M&A
	Listed$_{it}$	Whether targets or acquirers are listed companies or not
	MNE status(T_mne or A_mne)	Whether firm is MNE or not
	MA$_{it}$	Dummy of whether the M&A is completed or just rumoured one.
	GDP_growth$_{it}$	The GDP growth rate of the host country where the target firm is located in the relevant year.
	MAtype$_{it}$	Dummy of horizontal, vertical and conglomerate M&A
	Year Dummies	Year from 2002 to 2011
	Industry Dummies	2-digit NACE code
	Country Dummies	2-digit ISO country code

Source from Orbis and Zephyr

affecting firm's profitability will show the evidence for the role of cross-border M&A completions, controlling for other factors and firm unobserved heterogeneity. The main interest of this research is whether firm's profitability will be influenced after the completion of a cross-border M&A deal comparing with the rumoured but uncompleted deal.

APM_{it-1} refers to the profit margin of targets and acquirers one year before M&A being completed or rumoured. If a firm is ever in a profitable position, it is likely that it possesses firm specificity that is related to the factors of high profitability, and hence may help the firm become profitable again in the future. This lagged profit margin variable in the model captures the firm's profitability situation prior to the M&A. It makes the estimation become a dynamic model controlling for the past position of firm's earning ability. Furthermore, Yi_{t-1} are the vectors of acquirer's characteristics respectively in terms of leverage, liquidity, intangible resources and size measure. Sometimes, the firm's financial information is incomplete during the year of M&A announcement or completion because the M&A event may occur in the middle of the firm's financial year. Thus, all variables in these vectors are lagged by one year in order to obtain the firm's complete information for a whole financial year. The control variable is MA type$_{it}$. It stands for the type of M&A which includes vertical, horizontal and conglomerate M&A. Finally, the error term is made up of a time-specific component (v_t), a 2-digit industry-specific component (v_j), and an idiosyncratic error term ε_{it}. These terms control for year and industry respectively.

Conditional on effects of M&A completions on the post-M&A profitability level, the research further searches for the potential moderating roles of M&A completions dummy on other explanatory variables in shaping the firm's profitability level. To this end, equation 4 is modified by allowing parameter heterogeneity in M&A completion:

$$APM_{it+1} = \beta_0 + \beta_1 MA_{it} + \beta_2 APM_{it-1} + \beta_3 Y_{it-1} + \beta_4 APM_{it-1}*MA_{it} + \beta_5 Y_{it-1}*MA_{it} + \beta_6 MAtype_{it} + v_t + v_j + \varepsilon_{it} \quad (4)$$

By interacting MA_{it} with firm characteristics, equation 4 examines the profitability effects due to completion of M&A indirectly through various firm characteristics differences. This research also looks at the subsample of deals with acquirers having high profit targets and deals with acquirers having low profit targets. This separation will answer the effect of M&A event on firms' profitability in the deals where an acquirer firm wishes to acquire a profitable target for synergetic gains and in the deals where an acquirer firm wishes to acquire an unprofitable target for the discipline of bad management.

In order to assess whether there is a difference in ownership advantage between MNEs and non-MNEs, this research will also estimate the impact of firm MNE status on target's post-M&A profitability level by modelling four groups of completed cross-border M&A deals. They are four types of deals with MNE acquirer, non-MNE acquirer, MNE target and non-MNE target respectively. The specifications are constructed as follow:

$$TPM_{it+1} = \beta_0 + \beta_1 T\_mne + \beta_2 TPM_{it-1} + \beta_3 X_{it-1} + \beta_4 MAtype_{it} + v_t + v_j + \varepsilon_{it} \quad (5)$$

$$TPM_{it+1} = \beta_0 + \beta_1 A\_mne + \beta_2 TPM_{it-1} + \beta_3 X_{it-1} + \beta_4 MAtype_{it} + v_t + v_j + \varepsilon_{it} \quad (6)$$

T_mne stands for the target's MNE status dummy, while A_mne stands for the acquirer's MNE status dummy. Value of 1 denotes MNE firm and value of 0 denotes non-MNE firm. Other variables keep the same. The four types of deals are constructed by dividing A_mne = 1 or 0 in equation 5 and T_mne = 1 or 0 in equation 6.

Results

Descriptive Statistics for Determinants of Cross-border M&A

The sample information for the probit model with using the relative firm size variable is summarised in table 5. All variables show positive mean value in the sample of 4,149 cross border M&A and some of them have negative values for specific observations.

Results for Determinants of Cross-border M&A

The parameter estimates of the probit M&A likelihood models and the associated marginal effects for independent variables are presented in table 6. Model 1 uses the absolute value of acquirer and target's size measures, while Model 2 employs the logarithm of relative size measure between acquirer and target. The control variables control acquirer's listed status, target's listed status, GDP growth for each host country, M&A types, year and country.

In model 1, the coefficient sign of variable target's intangible asset is significant and negative. This implies that the target with low level of intangible assets will increase the likelihood of cross-border M&A completions. It can be explained that the competitive advantage based on a complex technology will reduce the likelihood of cross-border M&A completions due to the high transfer cost. Additionally, high proportion of intangible assets, to some extent, brings in an overvalued firm's value. Therefore, targets sometimes ask for higher takeover prices resulting in the deals not being completed. The coefficient sign of target's total asset is consistent with previous literature, which means that a smaller firm will increase the chance of a cross-border M&A being completed. Besides, smaller firms may be more likely to be chosen as targets. Moreover, the finding for other significant variables of the acquirer shows that the acquiring firm with high profitability and sufficient cash flow will reduce the chance of a cross-border M&A completion after experiencing a takeover rumour. Although high cash flow is argued to increase the possibility of potential M&A deals because managers can afford to buy more firms, it doesn't mean all of them become completed ones. The high amount of free cash flow gives managers more discretionary power and encourages management hubris. This results in the deals not easy to be completed successfully because acquirers carelessly choose the investment projects. This finding is different from the previous literature which argues that the more cash flow the more M&A. In addition, the result about the profitability from the acquirer side is also different from previous literature which argues that the acquirer with high profitability will be more likely to initiate the takeovers. The finding could be explained that acquirers with high earning ability will cautiously choose targets to acquire or merge. They prefer to maintain their existing superiority in profitability and try to avoid the risk of losing profit when acquiring a new firm. Besides, the large integration cost makes acquirers unprofitable to some extent. Thus, high profitability reduces the chance of an M&A deal completion.

As for the control variables, the coefficient of target listed status is negative and statistically significant in model 1, and the listed status of acquirer and target firms has a significant and negative sign in model 2. This indicates that the unlisted firms in the sample will increase the likelihood of cross-border M&A completions. In terms of listed status, the listed firm is usually a large corporation in market value and is under surveillance by the stock exchange regulators. Large firms are not easily integrated and usually involve complicated transaction procedures. Moreover, the listed firm is usually required to disclose more M&A proposal information than unlisted ones. This requirement of financial disclosure in the stock exchange institutes reduces the discretionary power of managers to attempt all possible M&A projects. Thus, listed firms are not easy to complete an M&A deal due to sophisticated integration progress and strict surveillance by regulators. Together with considering the control of country variable, the variable of GDP growth shows a significant and positive sign. This means that the healthy economic environment and good market opportunity in the host country will encourage the completion of cross-border M&A. The firm's listed status variables and the control for the host country interfere with the significance of a firm's intangible resource, profitability and GDP growth in affecting the completion of cross-border M&A after experiencing takeover rumours.

Table 5. Descriptive statistics for the model with relative firm size.

	Variable	Obs	Mean	Std. Dev.	Min	Max
	completed_MA	4149	0.870	0.337	0	1
Target	Profit Margin	4149	3.903	21.360	-98.25	100
	Intangible Asset	4149	10718.02	10365.69	29	31327
	Listed	4149	0.095	0.293	0	1
Acquirer	Profit Margin	4149	8.194	14.542	-97.99	95.06
	Cash Flow	4149	1143345	3524604	-2.10E+7	5.09E+7
	Gearing Ratio	4149	105.713	118.258	0	997.68
	Intangible Asset	4149	29531.14	19343.35	163	63487
	Listed	4149	0.686	0.464	0	1
	Relative Size	4149	3.854	2.309	-7.985	16.485
	GDP_growth	4149	7.340	1.773	0.5	10
	MAtype	4149	1.839	0.965	1	3
	year	4149	2006.302	2.268	2002	2011
	Tcountry_id	4149	71.941	38.872	8	162
The descriptive statistics is analysed by using the full model with control variables.						

Table 6. Estimates of probitcross-border M&A likelihood models.

	Variables	model 1 with absolute firm size					model 2 with relative firm size				
		Coef.	Std. Err.	dy/dx	Std. Err.	Sig.	Coef.	Std. Err.	dy/dx	Std. Err.	Sig.
Target	Profit Margin	-7.02E-5	1.35E-3	-1.12E-5	2.17E-4		-2.14E-4	1.36E-3	-3.43E-5	2.17E-4	
	Intangible Asset	-6.54E-6	2.83E-6	-1.05E-6	4.54E-7	**	-5.31E-6	2.87E-6	-8.50E-7	4.59E-7	*
	Total Asset	-2.31E-8	6.34E-9	-3.70E-9	1.02E-9	***					
	Listed	-1.29E+0	9.30E-2	-2.07E-1	1.43E-2	***	-1.31E+0	9.19E-2	-2.09E-1	1.40E-2	***
Acquirer	Profit Margin	-5.07E-3	2.03E-3	-8.12E-4	3.25E-4	**	-5.40E-3	2.01E-3	-8.64E-4	3.23E-4	***
	Cash Flow	-3.99E-8	1.32E-8	-6.38E-9	2.11E-9	***	-5.24E-8	7.28E-9	-8.39E-9	1.16E-9	***
	Gearing Ratio	-2.51E-4	2.43E-4	-4.02E-5	3.90E-5		-3.62E-4	2.36E-4	-5.79E-5	3.78E-5	
	Intangible Asset	3.22E-7	1.47E-6	5.15E-8	2.35E-7		6.57E-8	1.47E-6	1.05E-8	2.35E-7	
	Total Asset	1.55E-10	1.19E-9	2.48E-11	1.91E-10						
	Listed	-9.56E-2	6.67E-2	-1.53E-2	1.07E-2		-1.74E-1	6.96E-2	-2.78E-2	1.12E-2	**
	Relative Size						5.49E-2	1.39E-2	8.79E-3	2.22E-3	***
	GDP Growth	6.71E-2	3.45E-2	1.07E-2	5.53E-3	*	7.03E-2	3.46E-2	1.13E-2	5.54E-3	**
	Vertical	-9.85E-2	1.41E-1	-1.58E-2	2.36E-2		-9.02E-2	1.41E-1	-1.45E-2	2.35E-2	
	Horizontal	-1.06E-1	5.98E-2	-1.71E-2	9.75E-3	*	-1.02E-1	5.99E-2	-1.65E-2	9.75E-3	*
	Year	controlled					controlled				
	Country_id	controlled					controlled				
	Constant term	8.24E-1	4.06E-1			***	6.72E-1	4.10E-1			***
	Pseudo R2	0.237					0.236				
	LR chi2	759.08				***	758.03				***
	No. of Obs.	4150					4149				
***, **, * denotes significance at the 1, 5, and 10 per cent level, respectively.											

As for the control variable of cross-border M&A type, the coefficient of horizontal M&A is negative with significance. It means that horizontal international M&A deals are less likely to be completed compared with vertical international M&A. Horizontal M&A are usually consistent with diversification of corporate strategy under certain relatedness of corporate operation in order to seek for risk diversification and economy of scope. Furthermore, horizontal M&A is often involved in acquiring the firms with similar or homogeneous products. This provides the acquirer firm with new product markets or enlarged economy of scale, but this also makes the duplicated investments and resources redundant. Therefore, firms may more carefully consider horizontal takeovers. Especially, in consideration of the high cost due to job cut in the workforce and repeated construction, this kind of international M&A has less chance to be completed eventually.

In model 2, the relative size measure exhibits high significance and is consistent with the positive expected sign. The result shows that relative size of acquirer and target has more influential power than their absolute sizes in explaining the completion of a rumoured cross-border M&A deal. It suggests that the larger the extent of relative difference between acquirer and target is, the more likely the cross-border M&A deal will be completed. In other words, large firms usually acquire small ones. Based on the diagnostics of AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion), the relative firm size model has better explanatory power for the likelihood of international takeover completion. Actually, table 6 shows that only small firms increase the likelihood of M&A completions. However, there is no unique criterion to define a small firm. Compared with the absolute firm size measure, the relative firm size provides the comparability between acquirers and targets. It can facilitate researchers easily to identify effects of small firms or large firms.

Apart from these above differences, the coefficients of all other variables in model 2 are consistent with those in model 1. Generally, those efficiency variables show significant and negative results and are associated with rumoured but not completed deals. This may suggest a bias in the previous results, in which the firms are strongly more likely to consider these efficiency factors in considering international M&A attempts. However, these factors appear to be unrelated to the completion of M&A, the evidence from this research also suggests that strategic resources impede completion of takeovers rather than motivate them. Therefore, overall results suggest that the cross-border M&A activity is oriented by efficiency seeking rather than technological sourcing.

Effects of Cross-border M&A on Firm's Profitability

The sample information for the M&A's impact on acquirer's post-acquisition profitability is summarised in table 7.

Table 8 report the effects of cross-border M&A and use the cross-border M&A completions dummy interacted with key acquirer's characteristics. In column (1), the key variable M&A completions dummy shows significant and negative coefficients. This suggests that the completion of M&A will reduce the acquirer's post-M&A profitability level compared within the abandoned takeover rumours, which is consistent with hypothesis 2. Furthermore, controlling for other factors, column (3) confirms that acquirers cannot achieve high profitability level after cross-border M&A completing in the short term, even though they acquire profitable targets. The uncertainty and information asymmetry in overseas markets weaken the acquirer's ability of exploiting target's previous profitability in the actual M&A.

Table 7. Descriptive statistics for the dynamic model of acquirer's profitability.

Variable	Obs	Mean	Std. Dev.	Min	Max
A Profit Margin$_{t+1}$	3862	6.120	17.529	-99.27	99.38
Completed_MA$_t$	3862	0.909	0.288	0	1
A Profit Margin$_{t-1}$	3862	8.726	16.251	-94.46	99.05
A Gearing Ratio$_{t-1}$	3862	85.981	118.042	0	994.36
A CashFlow$_{t-1}$	3862	429745.8	2070744	-3231600	4.64E+7
A Intangible Asset$_{t-1}$	3862	28210.64	19945.24	16	63480
A Total Asset$_{t-1}$	3862	4404697	1.91E+7	94	5.75E+8
MAtype	3862	1.734	0.943	1	3
The descriptive statistics is analysed by using the full model with control variables.					

Table 8. The impact of cross-border M&A on acquirer's profitability.

	All cross border deals						high profitable targets						low profitable targets					
	(1)			(2)			(3)			(4)			(5)			(6)		
APM$_{t+1}$	Coef.	Std. Err.	sig.	Coef.	Std. Err.	sig.	Coef.	Std. Err.	sig.	Coef.	Std. Err.	sig.	Coef.	Std. Err.	sig.	Coef.	Std. Err.	sig.
MA$_t$	-2.29E+0	9.18E-1	**	-1.25E+0	1.76E+0		-3.43E+0	1.84E+0	*	-2.94E+0	3.52E+0		-2.31E+0	1.55E+0		-1.42E+0	3.39E+0	
APM$_{t-1}$	4.06E-1	1.65E-2	***	4.81E-1	5.04E-2	***	4.73E-1	3.68E-2	***	3.80E-1	8.75E-2	***	4.09E-1	3.53E-2	***	4.37E-1	1.12E-1	***
APM_MA$_{t-1}$				-8.47E-2	5.31E-2					1.12E-1	9.61E-2					-3.12E-2	1.18E-1	
AGEAR$_{t-1}$	-3.01E-3	2.29E-3		-6.57E-3	9.00E-3		-9.49E-3	5.01E-3	*	1.03E-2	2.16E-2		-2.40E-3	4.30E-3		-8.56E-3	1.20E-2	
AGEAR_MA$_{t-1}$				3.65E-3	9.27E-3					-2.03E-2	2.21E-2					7.08E-3	1.28E-2	
ACF$_{t-1}$	1.36E-7	2.52E-7		-2.31E-8	3.28E-7		-3.49E-7	8.83E-7		1.77E-6	1.58E-6		2.40E-7	4.25E-7		7.85E-7	7.33E-7	
ACF_MA$_{t-1}$				3.51E-7	4.92E-7					-2.94E-6	1.91E-6					-1.01E-7	9.66E-7	
AIA$_{t-1}$	-2.70E-5	1.30E-5	**	1.56E-6	4.29E-5		-5.03E-5	2.93E-5	*	-3.36E-5	8.50E-5		-1.01E-5	2.47E-5		5.06E-5	7.30E-5	
AIA_MA t-1				-3.20E-5	4.50E-5					-1.91E-5	9.05E-5					-7.22E-5	7.80E-5	
ATA$_{t-1}$	-8.67E-9	2.62E-8		-7.63E-9	3.60E-8		4.53E-8	1.07E-7		-2.06E-7	1.87E-7		-4.79E-8	5.22E-8		-1.58E-7	1.15E-7	
ATA_MA$_{t-1}$				-1.17E-9	5.37E-8					3.48E-7	2.32E-7					1.02E-7	1.30E-7	
Vertical_MA	-1.14E+0	1.44E+0		-1.09E+0	1.44E+0		-9.55E-1	3.29E+0		-1.17E+0	3.30E+0		1.30E+0	2.37E+0		1.42E+0	2.38E+0	
Horizon-tal_MA	-6.67E-2	5.67E-1		-9.50E-2	5.68E-1		7.21E-1	1.28E+0		8.06E-1	1.28E+0		2.07E+0	1.10E+0	*	2.02E+0	1.11E+0	*
Constant term	5.94E+0	5.12E+0		4.90E+0	5.31E+0		-3.00E+1	1.72E+1	*	-3.13E+1	1.74E+1	*	2.24E+1	1.49E+1		1.92E+1	1.53E+1	
Adj. R-squared	0.177			0.177			0.252			0.250			0.187			0.185		
No. of obs.	3862			3862			780			780			948			948		
Note: 1. All regressions have controlled year dummy and NACE 2-digit industrial sector dummies.																		
2. ***, **, * denotes significance at the 1, 5, and 10 percent level, respectively.																		

In columns from (1) to (6) of table 8, the variable of acquirer's pre-acquisition profitability shows positive and significant coefficients. This implies that the acquirer's post-acquisition profit level extends from its pre-acquisition profitability levels after takeovers. More specifically, in columns (3) and (4), acquirers will benefit from their previous earning abilities and achieve the high post-acquisition profitability when they acquire more profitable targets. This confirms the synergetic effect. Furthermore, the significant and positive coefficients for the previous level of acquirer's profit margin in columns (5) and (6) suggest that the previous acquirer's profitability is positively related to its post-M&A profitability in the deals which have low profit targets. Therefore, there is no firm evidence to prove the effect of managerial discipline. In column (3), there is a significant and negative coefficient of gearing ratio for acquirers. This means that the acquirer who has previous high financial risk will reduce its profitability after takeovers when it acquires a profitable target. It can be explained that a firm is less likely to achieve high profit itself in the acquisition with excessive debt financing. This leads to large interest payments and operating loss.

From columns (1) and (3) of table 8, the coefficients of acquirer's intangible assets show significant and negative sign in both all cross-border M&A sample and the high profit targets subsample. The evidence demonstrates that an acquirer with a high volume of intangible asset will make itself less profitable after M&A. This can be explained by the fact that the transfers of technological and managerial advantages from acquirers to overseas targets will increase the operational costs for acquirers. For example, it takes time to train the employees in newly acquired firms, or establish brand reputation in the host country. Du, et al. (2014) argue that some advantages of acquirer's intangible resources are unable to exert properly in the short term after takeovers because such advantages as research and development brand reputation may be damaged due to the M&A process. Even if the acquirer purchases a high profit target, the synergy effect may not be explicit in the short run. It needs time to restore these advantages and generate synergistic gains. Additionally, acquirers sometimes write off the value of certain intangible assets during the integration after the takeovers. This will decrease the book value of acquirer's total assets, which creates a better book profit in terms of return on assets (ROA) or return on capital employed (ROCE) in their financial reports. However, this research employs profit margin to measure firm's profitability. Firm's profit margin is calculated by profit before tax over operating revenue. Thus, there is no significant influence on acquirer's profit margin if it writes off intangible assets.

In table 8, columns (5) and (6) show that horizontal M&A has a positive impact on acquirer's post-acquisition profit margin in cross-border deals if a firm acquires a low profit target. This means acquirers can purchase unprofitable targets at a low transaction cost in order to explore overseas markets. The host markets in the same industry provide the acquirer with enlargements in economy of scale and scope of product. The fast increase in sales with a slow increase in costs results in the acquirer's high profitability level after takeovers.

The Impact of MNE Status on Target's Profitability

The impact of MNE status on target's post-acquisition profitability is reported in table 9. All these models include the pre-M&A target's characteristics such as profitability, cash flow, corporate financial leverage, intangible assets and firm size. Four models also include the target MNE status dummy and acquirer MNE status dummy respectively. The year and industry dummies are controlled in all the four models.

In model (1) of table 9, when the acquirer is an MNE in the international M&A, target's MNE status shows a significant and positive sign. This means MNE target's profit margin will be improved when it is acquired by another MNE firm. The significant and positive sign of acquirer's MNE status in model (3) suggests the same argument to model (1). The MNE status in models (2) and (4) is not found to be significant. This means that only the cross-border M&A between multinational corporations can bring target firms with an improvement in profitability. No significant evidence is found for the ownership advantage transfer from MNEs to non-MNEs in international takeovers. It can be interpreted that the synergy effect can only be created in the integration between MNEs.

The coefficients in columns from (1) to (4) of table 9 show significant and positive signs. This means that the target's pre-M&A profitability is positively related to its post-M&A profitability regardless of firm's MNE status. The significant and negative coefficient of the target's gearing ratio in column (1) suggests that a high level of the target's leverage will reduce its profitability if it is acquired by an MNE. This can be explained that the sales generated are used to pay off the debt of targets, which leads to a low profitability in the balance sheets. In terms of the target's cash flow, the significant and negative coefficients in columns (1) and (3) imply that the large cash holdings of targets reduce their profitability either when they are acquired by MNEs or when they are MNEs per se. This could be caused by a wayward expenditure of the target's management on the large cash holdings.

In model (2) of table 9, horizontal M&A shows a significant and negative sign. This suggests that when a non-MNE firm acquires another overseas MNE target firm within the same industry, the acquired MNE target cannot achieve high post-acquisition profitability level. It can be explained by a substitution effect on domestic exporting activity. The horizontal cross-border M&A replaces exporting activities of targets, which reduces the domestic production of acquired targets. Targets lose their advantage in the scale economy of production and accordingly compress their profit. Apart from these differences, the coefficient signs of other variables remain unchanged.

Conclusions

This research assesses the impacts of cross-border M&A on targets' and acquirers' performance in terms of profitability by employing the firm's information and M&A status in the period of 2002-2011. Before examining the performance of takeovers, we developed a takeover likelihood model to identify the determinants of M&A completion. Many studies have developed statistical models to either predict takeover targets or investigate the influence factors of M&A. The factors are identified due to their influence on M&A activity such as firm size, profitability, liquidity, corporate financial leverage level, and intangible assets from the firm level. In spite of the mixed empirical evidence of these factors, previous research only focuses on the factors which initiate M&A activity. Nevertheless, it is unanswered that what factors determine an M&A deal carry out and complete finally.

This study employs the rumoured but uncompleted and completed cross-border M&A deals to create a binary probit model which finds a better way to address the sample selection issue. The use of rumoured deals identify the deals which satisfy the conditions of M&A but do not exist in the end. We stimulate the counterfactual situation and provide a better control group because the rumoured data provides the similarity in range of actual completed deals characteristics. Thus, we exploited the likelihood of M&A from a deal perspective rather than predicting a likely target.

Table 9. The impact of MNE status on target's post-M&A profitability.

	(1)			(2)			(3)			(4)		
	MNE acquirer			**Non-MNE acquirer**			**MNE target**			**Non-MNE target**		
TPM_{t+1}	Coef.	Std. Err.	Sig.	Coef.	Std. Err.	Sig.	Coef.	Std. Err.	Sig.	Coef.	Std. Err.	Sig.
T_mne	2.58E+0	1.23E+0	**	-2.41E+0	2.14E+0							
A_mne							3.82E+0	1.81E+0	**	-9.46E-1	1.07E+0	
TPM_{t-1}	4.31E-1	3.20E-2	***	5.59E-1	5.33E-2	***	4.56E-1	4.86E-2	***	4.69E-1	3.22E-2	***
$TGEAR_{t-1}$	-5.30E-3	3.15E-3	*	2.19E-3	5.19E-3		-6.82E-3	5.74E-3		-2.65E-3	3.01E-3	
TCF_{t-1}	-5.34E-5	2.82E-5	*	-6.24E-5	4.67E-5		-1.30E-4	4.91E-5	***	-4.22E-5	2.74E-5	
TIA_{t-1}	-4.76E-6	4.63E-5		-2.34E-5	8.00E-5		-1.68E-5	7.86E-5		6.82E-6	4.59E-5	
TTA_{t-1}	2.41E-7	2.09E-7		2.00E-6	2.07E-6		2.01E-7	2.02E-7		1.78E-7	5.42E-7	
MAtype												
Vertical_MA	5.53E-1	2.54E+0		-2.90E+0	5.07E+0		1.84E+0	4.28E+0		-2.46E-1	2.60E+0	
Horizontal_MA	-5.75E-1	1.07E+0		-4.43E+0	1.84E+0	**	6.57E-1	1.83E+0		-1.50E+0	1.05E+0	
Constant term	2.72E+0	9.68E+0		5.40E+1	1.76E+1	***	-5.96E+0	1.19E+1		3.44E+0	1.56E+1	
Adj R-squared	0.119		***	0.179		***	0.277		***	0.110		***
No. of obs.	1845			666			482			2029		
Note: 1. All regressions include year dummy and NACE 2-digit industrial sector dummies.												
2. ***, **, * denotes significance at the 1, 5, and 10 percent level, respectively.												

Due to the different focal point on M&A likelihood, this paper finds some results which are different from the previous literature. Traditionally, it is believed that the large amount of target's intangible asset (RBV), sufficient acquirer's liquidity (FCF hypothesis), and high acquirer's profitability (efficiency theory) will increase M&A activity. However, in this research, the acquirer's liquidity, its profitability and target's intangible asset are found as an obstruction to the completion of cross-border M&A. This research also found that acquirer's cash flow and its profitability, target's intangible asset and absolute size measure, the relative size of acquirer over target, the listed status of both involving firms and GDP growth for the host country are important determinants of international takeover completion. Overall finding suggests that the cross-border M&A is the efficiency seeking activity rather than resource seeking one. Therefore, cross-border M&A deals are impeded by the potential managerial resistance, managerial discretion and high transaction costs in integration or the unachievable consensus between both firms on the transaction price.

The impacts of cross-border M&A are exploited from the aspects of both the target side and acquirer side respectively. Generally, we find that the firm's profitability level reduces once cross-border M&A is completed for acquirers. The takeover rumour can be regarded as a type of threat to replace the incumbent management, which motivates the incumbent management to improve their firm's profitability. However, when the rumoured deals are completed, firms may not make high profit due to considerable costs of transaction and integration. Therefore, completed deals are found to have a low firm's profitability level compared with rumoured but uncompleted deals.

Firms with different earning ability levels are acquired in cross border M&A. Therefore, we investigate the firm's post-M&A profitability level with two subsamples of previously high and low profit targets to test the synergetic effect and managerial disciplinary effect respectively. Some firms acquire profitable targets because managers think the profitability of acquired firms will contribute to the financial performance for both firms. Especially, we find that the lower an acquirer firm's profitability, the higher the likelihood that a cross border M&A is completed. Unprofitable acquirers wish to improve their financial positions through acquiring profitable targets, which is consistent with the motive of synergy effect. However, high earning ability of profitable target firms is root in their competitive advantages. Uncertainty across countries due to high market risk increases the probability of failure in transferring the advantages about the high earning ability across markets. Thus, in spite of a good intention to achieve synergy gains, it is less likely to obtain a high profitability level due to the difficulty in integration of competitive advantages. Furthermore, we find that only when MNE firms acquire MNE targets via takeovers, target's profitability is improved. It is concluded that the synergy effect can only be created in the integration between MNEs. However, there is no significant evidence to show a transfer of the MNE's ownership advantages.

In contrast, other firms acquire unprofitable targets because managers believe in their ability of improving target's financial performance. Based on the motive of managerial disciplinary effect with developed from the market for corporate control, firms tend to acquire unprofitable targets to replace the poor management. However, we find that profitable acquirers do not indiscreetly overtake unprofitable targets in order to avoid losing their existing earning advantages. Furthermore, we find that such type of takeovers generates the lower firm's profitability once deals are completed. It is explained that some competitive advantages such as superior organisational routine cannot be easily adopted by targets. Besides, some international M&A are just conducted because discretional managers waywardly choose targets for expansion. This will increase the likelihood of failure during the M&A integration. More specially, comparing with vertical M&A, horizontal deals will be less likely to complete in the overseas market in consideration of the job cut and duplicated construction. However, acquirers are expected to increase post-M&A profitability level when acquiring a foreign target with low profit in the same industry.

It is summarised that the abuse of managerial power from agency problem, the incautiousness of managements and high level of intangible assets in target firms will impede the completion of international M&A. Furthermore, the managerial discretion and the potential high transaction costs are concluded to have negative impacts on performance of cross border M&A. Therefore, although there are various motives to initiate cross border M&A, they are less likely to complete in the end due to the aforementioned reasons. Furthermore, with such reasons, the completed cross border M&A result in the negative effects on firm performance compared with the rumoured but uncompleted deals.

There are also some limitations and implications for future research. First, there are ample profitability studies in the literature which report a positive or negative impact of M&A on ex-post profitability. Nevertheless, it is required to be cautious when drawing inferences from this body of research evidence. The accounting profit has inherent defect in measuring post-M&A performance improvement, particularly under the scenario where M&A can prompt market power. It is argued to be somehow problematic by using accounting data. For instance, the corporate management teams might manipulate or varnish accounting profits. Second, this research has not assessed other measures for firm's profitability, for example, ROCE, ROC and so on. These measures perhaps will generate different results.

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Appendix

Table 1a. Lists of previous research on M&A performance.

Panel A Shareholder wealth effect around M&A announcements				
Author (Year), Sample country	**Sample period**	**Event window**	**Sample size**	**Abnormal Returns**
Sudarsanam and Mahate (2003), UK	1983-1995	(-1, +1D)	519	acquirer↓
Bradley and Sundaram (2004), US	1990-2000	(-2, +2D)	12476	acquirer↑
Moeller et al. (2005), US	1980-2001	(-1, +1D)	1967	acquirer↑
Ang and Cheng (2006), US	1984-2001	(-1D, close)	848	target↑; acquirer↓
Martynova and Renneboog (2006), Europe	1993-2001	(-5, +5D)	1659	target↑; acquirer↑
Sudarsanam and Mahate (2003), UK	1983-1995	(+2, +36M)	519	acquirer↓
Moeller et al. (2004), US	1981-2001	(0, +36M)	12023	acquirer↑
Bradley and Sundaram (2004), US	1990-2000	(+1, +24M)	12476	acquirer↓
Croci (2007), West Europe	1990-2001	(0, +12M)	83	acquirer↓
Panel B Post-acquisition operating performance				
Author (Year), Sample country	Sample period	Event window	Sample size	Performance measure	Results
Meeks (1977) [52], UK	1964-1972	(0, +5Y)	161	EBIT	acquirer↓
Mueller (1980) [53], US	1962-1972	(0, +3Y)	247	ROE, ROA	acquirer↓
Clark and Ofek (1994) [14], US	1981-1988	(0, +3Y)	25	EBIT	acquirer↓
Dickerson et al. (1997) [21], US	1948-1977	(0, +5Y)	2914	ROA	acquirer↓
Lee and Caves (1998), US	1980-1990	(+2, +5Y)	125	ROS	acquirer↓
Martynova et al. (2007) [50], Europe	1997-2001	(0, +3Y)	155	EBIT	acquirer =
Cosh et al. (1980) [18], UK	1967-1969	(0, +5Y)	225	Net income	acquirer↑
Healy et al. (1992) [38], US	1979-1984	(0, +5Y)	50	CF	acquirer↑
Powell and Stark (2005) [57], UK	1985-1993	(0, +3Y)	na	CF	acquirer↑
Bellak et al. (2006) [5], Austria	1994-2002	(-1, +5Y)	na	Profit, margin	acquirer↑
Chari et al. (2009) [11], US	1980-2007	(0, +5Y)	na	ROA	target↑
Result: "↓", "↑", "=" - performance measure decreases, increases, and is not significant respectively.					
Event window: 0 - the day or year of M&A announcement; (0, +nY) – The period of n years from the announcement; Close – The day of acquisition completion; (0, +nD) – The period of n days from the announcement; (0, +nM) – The period of n Months from the announcement.					