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DIVIDEND POLICY FOLLOWING MERGERS AND ACQUISITIONS: CASE STUDY IN VIETNAM

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Abstract

The objective of the study is to investigate the change of dividend policy in terms of M&A. In particular, the paper analyzed deliberately about the dividend status and dividend payout of both target and acquirer firms in Vietnam. In spite of the development of M&A, Vietnam had an insignificant number of papers which were in search of this case. Therefore, the paper tries to fill this gap to conduct a research on the change of dividend policy following M&A activities. Total firms included 74 target firms and 44 acquirer firms, which are listed in Vietnamese stock market from 2007 to 2017. The methodology approached 3 main methods. Firstly, probit model only tested dividend status between pre and post merger. Secondly, regression models with a panel data approaching tested the correlation between post- dividend payout ratio and 3 main variables: pre- dividend status, pre- dividend payout ratio and firms' characteristics. In particular, firms' characteristics include Size, Growth, Profit and Leverage. Finally, paired t-test could be seen as the alternative method that made a direct comparison between the dividend payout ratio in pre and post merger. The paper finds that dividend status and dividend payout ratio after 2 years were significantly impacted by the pre dividend status, pre dividend payout ratio and even the current profit and growth factors of firms' characteristics following M&A.

Keywords: dividend status, dividend payout ratio, M&A, acquirer, target

CHAPTER 1

INTRODUCTION

In the section, general information about M&A is introduced to give the overall background about the determination. Besides, the paper also presents the “Problem statement” and “Research objective” to indicate clearly about the issue of the paper. In turn, “The Scope and the Limitation” and “Significance and Implementation” are discussed in detail to arouse main questions for paper to do the research. Finally, “Research Framework” is essential for summarizing the structure of the dissertation.

1.1 Overview of M&A

Following Eduprستine in Empowering Professionals, M&A creates the opportunities for companies to join in the potential market. Meanwhile, dividend policy was often used as the main factor to test in M&A (Brahler et al., 2011, Jeon et al 2010, and Tanna Nnamdi 2010 and Olson Pagano 2003) . Companies would like to gain the highest return ratio after consolidating (Eduprستine 2015). Nevertheless, in prior papers, after conducting research on stock-return in M&A, scholars concluded that there was a negative correlation between firm’s performance and M&A (Langetieg (1978), Asquith (1983), and Magenheim and Mueller (1988)).

Dividends were seen as an informative signal that the earnings’ change of firms was sent outside in the extent of dividend behaviour ((Marsh and Merton, 1987; Kao and Wu, 1994). It made concern about the future earnings when signals were transferred from internal firms to outside the market (Modigliani and Miller (1959)). Higher dividends could convey a good signal about the well-being of a company. Regarding Baker and Wurgler (2004a), following “catering theory”, dividend payment was decided based on current investors who were served through their favorable needs by managers. Otherwise, “clientele effect” is a theory which can apply in different dividend policies when tax is disparity, following different choices of shareholders (Black, 1976). Shareholders concern mostly on the issue of dividend policy after merger when applying ((Wissal Ben Letaifa (2016)) .Dividend policy is essential to make a fair interest and profit for the existing shareholders. A fair policy is necessary to help investors ,on both sides of the target and acquirer, have a sense of satisfaction and contentment about policy of dividend payment after consolidating. ((Black and Scholes (1974)).

M&A has become common increasingly in Vietnam recently, because the government has already opened the door to attract the foreign investors all over the world without strict obstacles (Stiglitz 2008). However, M&A topics in Vietnam are still new and rare when searching about it. So the paper would like to approach the new aspect of M&A. More detail, the analytical purpose is to consider dividend policy, particular in dividend status and dividend payout ratio, in Vietnam following in M&A.

1.2 Problems statement and Research objectives

In prior studies, M&A has gained popularity in the economy. It reflects the profitable firms by gaining the target following M&A activities. When coming to the transaction of M&A, the target and acquirer would like to seek their own profit. Nevertheless, M&A is also the case which is easy to cause conflicts among 2 sides of deals. Normally, target and acquirer are completely 2 different firms with 2 distinct strategies. So, after consolidating, it is difficult to make the agreement outright about the policy of the adversary. The target's shareholders are not likely suitable with the regulation of acquirer firms after consolidating, so it results in the conflict after M&A appears. Firms need to reduce a sophisticated issue in order to curb the conflicts and implement a plausible policy in the combined firm. In addition, if acquirer firms merely improved the size without balancing the sustainable growth, the turnover of shareholders probably is decreased after merger.

Further more, there are numerous studies involving in M&A activities in case of Vietnam and foreign countries. The content was related to a variety aspects of the relationship between M&A and either economy or financial issues. Basically, Dividend policy was also one of the target of the analytical purpose of scholars. They analyzed dividend indicator in the post-merger performance (JF Jaffe, GN Mandelker, 1992). Nevertheless, in Vietnam, it is difficult to find articles relating to dividend policy when firms occur consolidating. They merely concentrate on researchinh M&A in general. Following some prior articles, it solely included “gaps relating seller's point in terms of shortage capital in either debt or equity following M&A” (Vuong (1997(a), 1997(b), Vuong and Nguyen (2000) and Pham and Vuong (2009). It lacks papers finding gap of dividend policy, particularly in dividend status and dividend payout ratio, in M&A. Understanding these aforementioned ideas, this study need to put forward the following questions:

- i. Does dividend status change after M&A ?
- ii. How do firms' characteristics affect dividend payout ratio following M&A?
- iii. How does M&A affect dividend payout ratio?

Target and Acquirer firms are included in the methodology, because some of deals were not greater than 50% of ownership, meaning that two sides of transactions did not totally and utterly combine each other. Generally, the combined effects had the positive correlation with both sides of firms about the status and the economy (Halpern (1983)). Therefore, the paper would like to consider dividend policy in both target firms and acquirer firms. It could presume as receiving additional investment from the dominant one.

1.3 Scope and Limitation of study

1.3.1 Scope

The research analyzes data by collecting manually from the secondary sources of "Vietnam data" and "M&A announcement officials". Target and Acquirer firms are listed in Ho Chi Minh Stock Exchange (HOSE) and Ha Noi Stock Exchange (HNX). All deals were occurred within the period of 10 years, between 2007 and 2017. Therefore, there were nearly 200 M&A firms which were used to analyse in the methodology part of the paper. The requirement of sorting data is mentioned in the next chapter.

1.3.2 Limitation

At the commencement, some firms participating in M&A gained the deal size less than 50%, so it was impossible to indicate the nature off M&A entity, through which the target firms were not completely deleted as the normal theory of the M&A. In addition, following Vietnam data sources, the acquirer's data had less information than the target, because acquirer firms mainly included substantially the individual owners who participate in the M&A deals.

To be honest, M & A is still a very potential concept in some research papers. The encountering problem is that the concepts of M&A had not been standardized and consistent in the relevant laws. As a result, M&A in Vietnam has not performed well the information and transparent financial information until now.

1.4 Significance and Implementation

The thesis focuses mostly on the dividend policy of the economy in Vietnam with the aim of considering its status and payout ratio following M&A. The paper expects to find any shifting of the dividend status and dividend payout ratio following M&A, which probably reflects the earning of shareholders after M&A announcements. Due to the limitation of the research paper in case of dividend policy following M&A, therefore the paper is probably the first article which analyses policy of the firms following M&A. Based on this, the paper can realize that managers of the combined firms have an appropriate strategy to make an equal interest of the previous shareholders as well as the current existing one.

In addition, paper also included firms' characteristics, such as size, growth, profit and leverage to consider the effect of them on dividend payout ratio. These factors are key in estimating a dividend payer propensity or non-dividend payer propensity. So, dividend payers had a higher profitability and size ratio than non-payers Meanwhile, non-payers had a higher asset growth rate and leverage ratio than dividend payers (E.F. Fama, K.R. French , 2001). Consequently, dividend payment could anticipate the level of future earnings (Baker et al. (1985)).

1.5 Framework of research

The thesis includes FIVE chapters. Each section takes steps to observe dividend policy in terms of M&A, particular in the dividend status and payout ratio. Regarding "Introduction" and "Literature Review" parts, there is a general information about M&A according with dividend policy theory and other implications. In the "Methodology" and "Data Analysis", the dissertation attempts to seek the correlation of dividend status, dividend payout another firms' characteristics during a period of acquisition. Then, the "Discussion" and "Conclusion" sections present the final results after conducting the Stata Additionally, the "Recommendation" part is an indispensable one that the paper makes some suggestions for the later research.

Chapter I: Introduction - shows the overview of this examination through the research background, the rationale, and objective, significance, and contributions, research scope, limitation, and outline.

Chapter II: Literature Review - gives the readers an understanding of fundamental theories and prior involving research, and be an assumption to build up the research.

Chapter III: Methodology - explains the process of data collection, the measurement of variables, model specification and statistical methods to test the hypothesis.

Chapter IV: Data Analysis and Finding Discussion - show the testing result which performs the strength and the direction of correlation between dependent and independent variables.

Chapter V: Conclusion and Recommendation - summary key finding and recommendation on the basis of finding, and eventually, solution for further research

CHAPTER 2

LITERATURE REVIEW

This section gives information about the basic theories of M&A to introduce some influence of M&A on the dividend policy in some previous articles. These papers were relevant to determinants of M&A with the modification in firm's characteristics. Beside that some prior research is also mentioned to give the reference for the main studying.

2.1 Theoretical Literature

2.1.1 Dividend and Dividend Policy

As noted by Marsh and Merton (1987), corporate dividend policy is a puzzle article to do the research. Brave proposed in a survey of Chief financial officers (CFOs) that maintenance and stability of dividends were important in deciding to change dividend policy after mergers and acquisitions. It can be seen that the fluctuation of dividend is the main cause of the volatility of the earnings in the future. Therefore, investors in both target and acquiring firms focus much on the "dividend smoothing" status of dividend policy. In some cases, the financial investment considerably concerns the sensitivity of dividend (Hoang and Hoxta, 2016). Following Lintner (1956), the author implied that past and current earnings are one of the determinants in deciding dividends. Dividends could be seen as the expectation of shareholders who desire to exchange the information or to satisfy the payout needs (Allen and Michaely (2003)). Regarding DeAngelo and DeAngelo (2006), payout policy is vital in dividend policy, which is the demand to distribute the firm's free cash flow. Payout policy is important in the financial and investment decisions firm-making (F. Allen and R. Michaely). For instance, dividends series present a significant level of smoothing, through which the firm modifies the payout policy depending on earnings (Lintner (1956)). Furthermore, smoothing dividends have a close relationship with the signaling theory, suggesting that the payment of dividend signals to the operational status of the firm. Therefore, the more fluctuation in the dividend policy, the more volatility in the operation of the organization.

2.1.3 Clientele effect

"Clientele effect" has a strong relationship with a certain period in the circle life of business. Tax impacts on owners and managers who impact on dividend payout's decisions of firms (Chetty and Saez (2005), Blouin et al. (2007), and Brown et al. (2007)). The disparity in tax regimes aimed to serve different groups of investors (Allen's perspective (2000)). Brav et al. (2005) investigated that companies were concerned to modify their dividend policies to identify the changes in tax among the main shareholders. Poterba (2004) finds a substantial correlation between dividend payouts and average marginal tax rates within a range from 1935 to 2002. Chetty and Saez (2005) realized a 20% of improvement in dividend payments along the U.S. after reducing considerably tax in the period of the year 2003. The response of decreasing tax was the most powerful among firms with strong principals whose tax incentives changed. On the other hand, authors argued that there was no change or even increase gradually in dividends when investors were the untaxed one (Timo Korkeamäki, Eva Liljeblom, Daniel Pasternack, 2009).

2.1.4 Catering theory

Different from the viewpoint of clientele theory, catering are likely based on the sentiment of investors who ask for the dividend payment. A dividend payer tends to assess in dividend premium of the stock price to cater their shareholders. The executives of a firm did not concern much on paying dividends because some of them preferred non-paying premiums (Baker and Wurgler, 2004a). The authors additionally confirm that there is a remarkable relationship between the dividend policy and the dividend payment on the basis of the catering theory. In the research the paper will identify the catering theory that after grouping into one entity, the manager of the new one may likely changes the way in serving the existing and the new shareholders in the extent to the dividend policy with the aim of making the balance and equal interests among two group of investors.

2.2 Empirical Research and Hypothesis Development

The paper based on the research idea of Deeper and Turki (2016) about dividend modification following mergers and acquisitions. In addition, many prior M&A articles as *Andrade, G., Mitchell, M., & Stafford, E. (2001)*, *Akben-Selcuk, E., & Altiok-Yilmaz, A. (2011)*, *Letaifa, W. B. (2016)*, *Fatima, T., & Shehzad, A. (2014)*, *Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992)* were considered the trends of consolidation in many years.

2.2.1 Dividend Status and Dividend Payout Ratio following M&A

Dividend policy was seen as an essential tool to evaluate the stabilize of companies (Banchit et al., 2012). Myers and Majluf (1984, p. 220) suggested that without information asymmetry, dividend status changes had the positive correlation with the value changes to set dividend policy. Basically, for non-dividend payers, they normally underwent the lower return after the announcement date (Loderer and Mauer (1992)). This confirmation was analyzed by data from 1973 to 1984 in evaluating dividend status of US firms. When a firm changed about the structure, shareholders would expect the change in dividend-paying status. For instance, when firms performed the plummeted in propensity of dividend, it illustrated the disappearing of dividend status between 1979 and 1999 (Fama and French (2001)). To the extent of M&A in the US, however, combined firms had a strongly correlation with the past dividend status, through which dividend status tested contemporarily with the stock-based deals among target and acquirer characteristics (Dereeper and Turki (2016)).

Past dividend could also play a vital role in setting the current one. Optimal payout policy played an important role in distributing the free cash flow in some past articles (DeAngelo (2006)).

Through testing 28 cases of managers in the US, Lintner (1956) confirmed that past dividend payout ratio was a significant factor in determining dividend policy of firms. Subsequently, many papers applied Lintner's model in terms of dividend payout testing to identify again the relationship between the pre and post payout ratio (Allen, 1992; McCluskey et al., 2007; Pourheidari, 2009; Tse, 2005). As a result, Baker et al. (2002) and Farrelly et al. (1986) tend to consider the past dividend payout ratio to send a smooth signal about the dividend growth of firms, with 562 firms listed in NYSE and 318 firms listed in NASDAQ respectively.

Nevertheless, there was some evidence about the insignificant correlation with past dividend

patterns in the developing market, through which the historical had no relation with the existing payout rate of dividend. Due to the flexibility of profitability factor, dividend payout ratio of firms adjusted following it instead of relying merely on the past ((Glen et al., 1995). In particular, firms did not follow a certain policy to pay dividend for shareholders in China, it would be a variant payment, which depended on the current earning of firms (Wang et.al (2002). Otherwise, there was a plummet in dividend payment due to the modification of firms' characteristics (Fama and French (2001)). Besides , Adaoglu ~ (2000) also investigated that dividend policy was independent of the historical payout ratio and it was not a kind of stable policy paying a certain rate for shareholders. In addition, the advocate from NM (1961) argues that the dividend payment negatively influenced on firm performance.

2.2.2 Target firms in the extent of Mergers and Acquisitions

From the viewpoints of Dereeper and Turki (2016), the study identified through 5734 completed deals of M&A and indicated that dividend status and dividend policy of target firms had a substantial influence on the dividend policy of the combined entity. Generally, dividend policy indicates the honest wealth of shareholders after pouring the amount of money on firms. On the other hand, dividend policy can also be considered as the strategy of managers to allocate the “profit” sources for these investors (investopedia). The relative size of target firms was a key in deciding the profitability of the bidders later (Julian, Robert, and Sheridan (1994)). This paper presumed that the larger target firms were, the higher acquirer firms were influenced on the assets performance. Another prior test illustrated the higher correlation between abnormal return of target firms and M&A, which results in the higher profit of the target firms after consolidation (Campa & Hernando 2004). Huang & Walking (1987) gave information about the form payment on M&A deals that cash acquisitions performed more significantly than stock offers due to “ the tax exemption on the capital gains earned”. Otherwise Wansley, Lane and Yang (2014) proved that the “stock payment” form was deteriorative until the stock was sold after M&A. In the wide ranges of the past articles (Jensen and Ruback (1983), Datta et al. (1992) and Bruner (2001)), these surveys proved that target firms witnessed an average positive return in many periods in the post merger. In addition, the study of Wissal Ben Letaifa (2010) determined that the dividend payment rate had not been greater than 14% due to the expansion of shareholder, for it had the transformation of the firm characteristics. At this time, by computation of payout

ratio running over 3 years in post merger, Wissal estimated that earnings per share increased gradually during the study period whereas reducing the dividend payout ratio of 26% and 14% in 2013 and by the end of 2006 respectively. In general, Lentafia also reckoned that dividend policy was an appropriate assessment in case of evaluating different time points in pre and post mergers.

2.2.3 Acquirer firms in the extent of Mergers and Acquisitions

Dereeper and Turki (2016) also had the evidence that there was a positive correlation between the dividend payout ratio of acquirer firms following M&A activity. By using the OLS regression and Probit analysis, the paper identified acquirer's dividend status and the dividend policy in many kinds of M&A deals, such as toehold, hostile, or horizontal. As a result, they found a positive result about the change of dividend policy following M&A. Julian, Robert, and Sheridan (1994) proved that the size of the previous firm in pre-merger influenced the return of firms in post-merger that made the different forms of "equity capitalization". By contrast, with the "artifact of the mean-reversion in long horizon returns on individual stocks", DeBondt and Thaler (1985, 1987) realized the cause of underperformance towards the acquiring firms. Acquirers performed poorly after mergers and acquisitions, particularly in the stock (Anup Agrawal). Ravenscraft and Scherer (1987a, b) used the "line of business" data to identify the profitable factor of firms in post-merger and then proved that profitability had a negative correlation with M&A event. As a result, they found that the stockholder's acquirer firms suffered a substantial loss about 10% during 5 years after the deals of M&A completion. Because, profitability was vital in deciding the dividend payment for firms (Wang et. al (2002)). However, in terms of bidder firms, Campa & Hernando (2004) found no evidence for the negative return of shareholders at the M&A announcement. Particularly, abnormal returns were caused by benchmarks involving dividend policy of the acquirer who suffered the over average loss after consolidation (Roll (1979)). By contrast, regarding Turki (2018), it had a positive influence of M&A on the acquirer dividend payment which made a significant abnormal return to its equity.

Therefore, from these viewpoints of analytical research, the hypothesis is formulated:

H1: There is a significant change in dividend status following M&A.

H2: There is a significant influence of firms' characteristics on dividend payout ratio after M&A.

H3: There is a significant difference between pre and post- dividend payout ratio following M&A.

CHAPTER 3

METHODOLOGY

The section shows Study design and Data description of the paper. In terms of Model specification, it indicates clearly about the variables among the models and then explains apparently about the assessment of each method.

3.1 Study Design and Data Description

3.1.1 Study design

In the dissertation, data is used for the sake of estimating the effect of M&A on firm characteristics. M&A transactions were covered from 2007 to 2017. All firms are Vietnam companies which have been listed on Ho Chi Minh Stock Exchange(HOSE) and Ha Noi Stock Exchange (HNX).

3.1.2 Data description

To test the impact of M&A on the dividend policy of firms, this study used the secondary data from “Vietnam data” source and “ M&A announcement official “ source to collect manually the relative number through ratios.

Regarding the target firms, there were a total of 74 firms from 2007 and 2017 listed in both HOSE and HNX. Otherwise, 44 acquirer firms were selected and in turn listed in both HOSE and HNX between 2007 and 2017.

3.1.3 Descriptive information

Two given tables below show information about related variable model when using to test in methodology:

Table 1A: Descriptive Statistic of Target firms

Variable	Obs	Mean	Std. Dev	Min	Max
DP_{post}	142	.5157042	1.428578	-.34	12.96
DS_{pre}	144	.7083333	.4561162	0	1

DP_{pre}	129	.2860465	.3310505	0	2.24
SIZE	137	9.338467	.6606524	7.87	11.89
GRO	138	-.0564493	2.26347	-26.13	1
PRO	140	.0800704	.1253845	-.12	.99
LEV	120	.3476667	.9950142	-2.71	5.04

Table 1A summarizes all the information of target firms over 10 years (from 2007 to 2017) through 6 main variables. The table recorded that firms paid average 0.5157 in 2 years after mergers, meanwhile firms paid average .2860 in 2 years pre mergers. Although the mean of GRO only accounted at -0.0564, average LEV gained at nearly .3477. Mean number of SIZE and PRO indicators constitute at 9.33 and 0.08 respectively.

Table 1B: Descriptive Statistic of Acquirer firms

Variable	Obs	Mean	Std. Dev	Min	Max
DP_{post}	83	.2718072	.3060055	0	1.6
DS_{pre}	84	.7738095	.4208766	0	1
DP_{pre}	82	.2826829	.315677	0	1.41
SIZE	79	9.675063	.6550179	8.2	11.45
GRO	78	.2214103	1.70374	-9.53	9.15
PRO	83	.0533735	.1030543	-.23	.74
LEV	71	1.101972	1.185179	0	6.57

Acquirer firms have the same patterns with the target through a total of 83 observations of DP_{pos} in general. In comparison with 0.2718 of mean in DP_{post}, mean in DP_{pre} has 0.2826. GRO and PRO have the mean value of 0.2214 and 0.0533 respectively. Otherwise, mean value of Size equals 9.675 and mean value of LEV is 1.10197.

3.2 Model Specification

3.2.1 Dividend status of firms

- **Probit model**

To test the hypothesis, firstly, the paper analysed the dividend status in 2 years before M&A which would impact on the dividend status after 2 years of M&A. Probit models was used in testing the correlation between dummy variables. The paper followed these steps:

Step 1: Determine the year occurred M&A event in both cases of target and acquirer firms. Subsequently, based on that merger time, 2 years before the event would be considered as status in pre-merger and similarly, 2 years after would be the post-merger. In turn, firms' data selected nearly 88 firms over a period of 10 years. Target firms and acquirers firms were separately sorted.

Step 2: After collecting all of the appropriate information, "cash dividend" factor was selected from the given "M&A announcement " and "Vietnam data" sources with the aim of computing the "dividend status" of firms.

Step 3: During 2 years in pre and post period, if the firm is a dividend payer, then the data is marked as 1. Otherwise, if the firm values at 0, it means that the dividend status of the firm is a non- dividend payer. Eventually, "Probit command" in stata will tackle in the final step to give out the influence between the previous dividend status and the recent one.

H1: There is a significant changes in dividend status following M&A

Besides, the paper probably applies the representative dividend status in a period of 2 years, called the " dividend status 2 years period" (DS_{2 years period}). In detail, during 2 years, the test will evaluate the dividend status and then if there is at least one year through 2 years in which investors received dividend, the analysis will generally consider the firm as a dividend payer. The purpose is to make certain about the uniformity of the data. As a result, the data had better show the same result to indicate clearly the true nature of dividend status of firms.

3.2.2 Accounting performance

In this study, payout ratio is chosen as the main determinant in terms of considering the measurement of dividend policy. In the past research, Brav et al. (2015) previously mentioned the nature of dividend policy and illustrated that dividend payout ratio would be a significant key when assessing the dividend policy. Therefore, the study also applies this factor.

- **Panel data**

Panel data is the integration between the time series and cross-sectional data to test the performance of data through many years with many factors from a variety of companies involved. In the paper, the analysing years are in the range from 2007 to 2017 and experienced up to 72 target firms and 42 acquirer firms. From the panel data, the test can be shown clearly about the relationship among variables through M&A time.

Firstly, panel data would test the correlation about the characteristics of firms. So, the study will include some factors such as size, growth rate, profitability and leverage or even the previous dividend payout ratio to observe any effect of them on the dividend payout ratio of firms. Based on Leary and Michaely (2011), the high correlation would confirm the constraint of the previous dividend policy. Based on above reviewed articles, we formulate the following hypothesis:

H2: There is a significant influence of firms' characteristics on payout ratio after M&A

$$DP_{post\ i,t} = \alpha_0 + \beta_1 DS_{pre\ i,t} + \beta_2 DP_{pre\ i,t} + \beta_3 SIZE_{i,t} + \beta_4 GRO_{i,t} + \beta_5 PRO_{i,t} + \beta_6 LEV_{i,t} + \epsilon_{it}$$

Where:

$DP_{post\ i,t}$: Dividend payout ratio in post merger

$DS_{pre\ i,t}$: Dividend status in pre merger

$DP_{pre\ i,t}$: Dividend payout ratio in pre merger

i : denoting as cross-sectional dimension

t*: denoting time series dimension.

Firms' characteristics: were variables in the model, namely size (SIZE), growth (GRO), leverage (LEV) and profitability (PRO).

**time is in within 2 years in pre and post M&A*

General Conceptual Framework

For the Target Firms:

$$DP_{\text{tar}(i,t)} = \alpha_0 + \beta X_{\text{tar } i,t} + \epsilon_{it}$$

For the Acquirer Firms:

$$DP_{\text{acq}(i,t)} = \alpha_0 + \beta X_{\text{acq } i,t} + \epsilon_{it}$$

Additionally, based on the provided data, M&A transactions were analysed in both sides of targets and acquirers at the same time. With the below model, the study expects to deliberate about the acquirer firms' performance when mixing both activities of target and acquirer.

For the Combined firms:

$$DP_{\text{acq } i,t} = \alpha_0 + \beta X_{\text{acq } i,t} + \beta X_{\text{tar } i,t} + \epsilon_{it}$$

Where

$\beta X_{\text{acq } i,t}$: characteristics' acquirer firms

$\beta X_{\text{tar } i,t}$: characteristics' target firms

- **Paired t-test**

E Akben-Selcuk, A Altiok-Yilmaz (2011) indicated that if the raw ratio was applied to computation about the change of dividend policy, it would be so tough that the result perhaps biased when indicating the true nature of dividend policy following mergers and acquisitions. Basically, the shifting of dividend policy is likely influenced by either market fluctuation or economic situation, which is not merely based on the raw numbers. Consequently, following the method of E Akben-Selcuk(2011), the paper will also estimate the **median (Cash Dividend) /**

(Net Income) ratio each year of other Vietnamese listed firms, which were in the same industry with the firm relating to M&A transactions. These ratios are seen as the industry median. The difference between the raw ratio and industry median ratio can be seen as adjusted industry payout ratio. The measurement will help to increase the validity of the analysis.

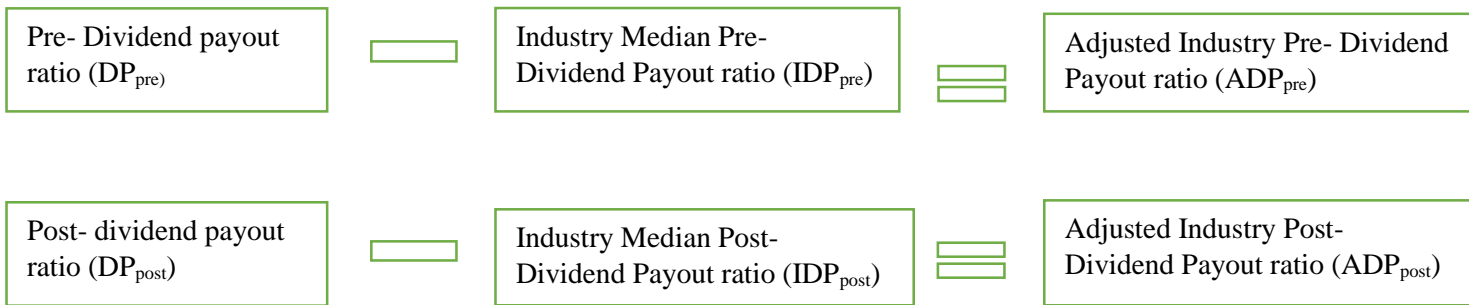


Figure 1: Industry adjusted dividend payout ratio

In the method, 2 years before M&A and 2 years after M&A would be tested separately through paired t-test. The purpose is to expect that the dividend payout ratio after merger perhaps increases gradually in both target and acquirers firms.

H3: There is a difference between pre and post- dividend payout ratio following M&A

$$ADP_{pos} = \alpha + \beta_1 \cdot ADP_{pre} + \epsilon_{it}$$

3.3.3 Variable Explanations

The table below gives detail information about the variable and the way to test in the model. In general, “DP_{post}” can be considered as dependent variable, while DS_{pre}, DP_{pre} and firms’ characteristics are independent variables to test the impact of them on the dependent factor.

Table2: Summary of variables

Variable	Definition	Reference
Dependent variable		
DP _{post}	$DP_{post} = \frac{\text{Cash Dividend}}{\text{Net income}}$	<i>Al-Twajry(2007), Brav et al. (2015), Michael S. Rozeff (1982), Winter 2016</i>
Independent variable		
DS _{pre}	It is a dummy variable Value is 1 then firms is a dividend payer. Otherwise, value is 0, firms is non-dividend payer	<i>Dereeper and Turki (2016)</i>
DP _{pre}	It is defined as the independent variable in the model , which is considered the effect on the DP _{post}	<i>Allen, 1992; McCluskey et al., 2007; Pourheidari, 2009; Tse, 2005, Baker et al. (2002) and Farrelly et al. (1986)</i>
SIZE	Firm size = log natural of total asset	<i>Eddy and Seifert, 1988, Nazir, M. S., & Afza, T. (2009), Javaid, S., Anwar, J., Zaman, K., & Gafoor, A. (2011)</i>
GRO	Growth = The ratio of change firm's asset between two consecutive years	<i>Rozeff, M. S. (1982), Grullon, G., Michaely, R., & Swaminathan, B. (2002), Balakrishnan, S., & Fox, I. (1993)</i>
PRO	$Pro = \frac{\text{Net Income}}{\text{Total Asset}}$	<i>Michael S. Rozeff (1982), Amidu and Abor(2006); Fama and French(2000)</i>
LEV	$Lev = \frac{\text{Book value of debt}}{\text{Total Asset}}$	<i>Al-Twajry(2007); Crutchley and Hansen (1989); Papadopoulos and Charalambidis(2007)</i>

CHAPTER 4

DATA ANALYSIS AND FINDING

4.1 Dividend status with probit model

Table 3: Probit model for dividend status

		z value	p value	
TARGET FIRMS	DS _{post yearly}	4.19	0.0000	***
	DS _{post-2 years period}	2.24	0.0264	**
ACQUIRER FIRMS	DS _{post yearly}	3.21	0.0011	***
	DS _{post-2 years period}	2.56	0.0009	***

*Note: * for 10%, ** for 5% and *** for 1%*

4.1.1 Target firm

- **Yearly Dividend Status**

The table above indicates the change of DS_{post yearly}. The likelihood ratio of the chi-square of 17.93 with p value of 0.000 (p-value < 0.05) indicated the statistically significant, meaning that independent variable was sufficient to predict its impact on dependent variable. At a glance, DS_{pre yearly} had positive correlation with DS_{post yearly}, through which coefficient was 1.011 with the z value was 3.21 in 95% confidence interval (Appendix 1.1). Based on this information, it can conclude that DS_{pre yearly} had a significant impact on DS_{post yearly} through M&A activity and it probably changes 1.011 times more than the previous one.

- **A Period of 2 Years Dividend Status**

In terms of average dividend status, the study aims to confirm again the uniformity of the result. It expects to see the certainty of the impact of previous status on the later one during a period of 2 years. As aforementioned, dividend status is straightforward to estimate as a dividend payer if at least one year during 2 years in both events pays dividend for shareholders.

From the picture, it illustrates the table that p-value was less than 0.05, which was sufficient to anticipate the treatment of the previous dividend status of target firms on those of 2 years later.

As a result, $DS_{\text{pre-2 years period}}$ had a significant impact on the dependent variable with 2.24 of z-value in 95% of confidence intervals and coefficient was 0.999 (Appendix 1.2). So, $DS_{\text{pre-2 years period}}$ positively correlation with $DS_{\text{post-2 years period}}$. To sum up, once again, the paper could strongly confirm that $DS_{\text{pre-2 years period}}$ had a correlation with the $DS_{\text{post-2 years period}}$. So, after M&A, non- dividend payers perhaps turn into the dividend payer firms and dividend payers possibly increased the status of dividend policy to cater their shareholders.

4.1.2 Acquirer firm

- **Yearly dividend status**

Same as the analysis of target firms, the acquirer firms also run the Probit model through dummy variables. The likelihood ratio chi-square of 10.57 with p-value of 0.0011, variables in acquirer firms was significant to give the prediction on $DS_{\text{pre yearly}}$. It had 1.097 in the coefficient with the z value nearly 3.21, meaning that $DS_{\text{pre yearly}}$ significantly impacted on the $DS_{\text{post yearly}}$ through 84 observations in the 95% confidence interval (Appendix 1.3). Consequently, acquirer firms shifted increasingly their dividend status to 1.097 times after investing an amount of money on target firms.

- **A Period of 2 Years Dividend Status**

With 42 observations through 6.82 of likelihood ratio chi-square and 0.009 of p-value, the representative dividend status of acquirer firms in pre and post merger have the correlation with each other. In particular, $DS_{\text{pre-2 years period}}$ positively affected $DS_{\text{post-2 years period}}$ through which the coefficient equaled 1.93 with 2.56 of z-value (Appendix 1.4). So, the dividend status of acquirer firms was the same as the dividend status of target firms that firms would either change non-payers into payers or raise their dividend payer status following M&A. The above results were consistent with the prior article of Sébastien Dereeper and Aymen Turki (2016) about the change positively of dividend status after M&A.

4.2 Panel data approach

4.2.1 Pearson's Correlation and Variance Inflation Factor (VIF)

It aims to test the correlation coefficient to measure the strength and the direction among variables. In this study, Person's Correlation indicates how well the data points best fit this model about the relationship between post dividend payout ratio and relative variables.

Table 4A: Pearson's Correlation of Target Firms

	DP_{post}	DS_{pre}	DP_{pre}	SIZE	GRO	PRO	LEV
DP_{post}	1.0000						
DS_{pre}	-0.0269 (0.7508)	1.0000					
DP_{pre}	0.5815 (0.0000)	0.2169 (0.0135)	1.0000				
SIZE	-0.0621 (0.474)	-0.1778 (0.0377)	-0.221 (0.0136)	1.0000			
GRO	-0.5236 (0.000)	-0.0781 (0.3625)	-0.253 (0.0046)	-0.0881 (0.3132)	1.0000		
PRO	0.4521 (0.000)	0.0362 (0.6690)	0.4641 (0.0000)	-0.2407 (0.0049)	0.0198 (0.8194)	1.000	
LEV	0.3119 (0.0006)	-0.1513 (0.0989)	0.2347 (0.0120)	-0.0102 (0.9124)	0.0152 (0.8711)	0.2704 (0.0031)	1.0000

Table 4B: VIF value for target firms

Variable	VIF	1/VIF
DPpre	1.59	0.629185
PRO	1.48	0.675374
GRO	1.14	0.879475
LEV	1.14	0.879514
SIZE	1.09	0.914220
DSpre	1.07	0.936172
Mean VIF	1.25	

Table 5A: Pearson's Correlation of Acquirer Firms

	DP _{post}	DS _{pre}	DP _{pre}	SIZE	GRO	PRO	LEV
DPpost	1.0000						
DSpre	0.3747 (0.0005)	1.0000					
DPpre	0.3961 (0.0003)	0.4736 0.0000	1.0000				
SIZE	-0.0481 (0.6759)	0.2806 (0.0123)	0.1706 (0.1379)	1.0000			
GRO	-0.4088 (0.0002)	-0.0390 (0.7346)	-0.1506 (0.1939)	0.2236 (0.0506)	1.0000		
PRO	0.0728 (0.5130)	0.0935 (0.4003)	0.1596 (0.1546)	0.2916 (0.0096)	-0.1024 (0,3756)	1.0000	
LEV	0.0611 (0.6153)	-0.0261 (0.8288)	-0.0157 (0.8974)	0.0512 (0.6714)	0.3046 (0.0109)	-0.3161 (0.0077)	1.0000

Table 5B: VIF value for acquirer firms

Variable	VIF	1/VIF
DS_{pre}	1.36	0.734855
LEV	1.34	0.748676
SIZE	1.28	0.782733
PRO	1.26	0.792623
DP_{pre}	1.24	0.808643
GRO	1.23	0.813197
Mean VIF	1.28	

Pearson's Correlation aims at analysing the strength and the correlation among variables. At a glance, these variables had the relationship, through which they could impact on each other. So, in table 3A and 3B, they satisfied the condition of analysis and showed the correlation among variables by the indicator of significance of p-value (less than 0.05)

With Variance Inflation Factor (VIF) and tolerance (1/VIF), the study would check the multicollinearity, which diagnoses the correlation between one predictor and another predictor. The higher value was, the less accurate measurement was. Following the table 3B and 4B, it could be clear that mean VIF was 1.25 and 1.28 in target and acquirer firms respectively (which was less than 2), meaning that data did not have multicollinearity.

4.2.2 Running regressions

Table 6: Regression Outcomes of Target firms

	OLS		Fixed effect		Random effect	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
DS_{pre}	-.5529596	0.013 (**)	.1974118	0.554	-.3980459	0.066
DP_{pre}	.1.563583	0.000 (***)	.1017168	0.016 (**)	1.370027	0.000 (***)
SIZE	.1815598	0.206	-.8501883	0.542	.1952578	0.238
GRO	-.2948175	0.000 (***)	-.3523219	0.000 (***)	-.3146094	0.000 (***)
PRO	3.256672	0.000 (***)	6.795613	0.000 (***)	4.12764	0.000 (***)
LEV	.2065184	0.022 (**)	.3404045	0.049 (**)	.2593047	0.007 (***)
Cons	-1.561688	0.254	7.177145	0.576	-1.854581	0.237
	R-squared	0.6750	R- sq:	0.5083	R-sq:	0.6701
	Adj R-squared	0.6561				
F-test for Fixed effect						
Ho: All fixed effect is 0 F test that all $u_i=0$: $F(57, 46) = 2.55$ Prob > F = 0.0007						
Results: reject Ho, choose FEM						
Breusch-Pagan Lagrangian multiplier (LM) test for random effects						
Ho: All random effect is 0 $\text{chibar2}(01) = 5.6$ Prob > $\text{chibar2} = 0.009$						
Results: reject Ho, choose Random						
Hausman test						
Ho: preferred REM $\text{chi2}(6) = 25.25$ Prob> $\text{chi2} = 0.0003$						
Results: reject Ho, choose FEM						
Modified Wald test for heteroskedasticity						
Ho: Homoscedasticity $\text{chi2}(68) = 3.7e+30$ Prob> $\text{chi2} = 0.0000$						
Results: reject Ho, there is heteroskedasticity						

From the table 6, there are 3 performances of model in dividend payout ratio and the involved characteristics through 3 models, namely OLS (Ordinary Least Squares), FEM (Fixed Effect

Model) and REM (Random Effect Model). Besides, the study also includes some methods to test the authentic of the final results

In the commencement, F-test was used to give the option between OLS and FEM. The striking point from the table is that p-value is less than 0.05, hence FEM was the preference for the analysis. Additionally, LM was tested between OLS and REM. In this case, the result was that $\text{Prob} > \text{chibar2} = 0.009$. As a result, it rejected null hypothesis and concluded that REM was appropriate. Eventually, the Hausman test probably took responsibility for choosing between FEM and REM. Consequently, with 0.0003 of $\text{Prob} > \text{chi2}$, H_0 was rejected because it preferred model is random effects (Green, 2008, chapter9). So FEM was chosen and seen as the main model for the dividend payout ratio of target firms following M&A. Furthermore, the study additionally tests of heteroskedasticity, which was appropriate for testing in the fixed effect model. With $\text{Prob} > \text{chi2} = 0.0000$, it had a presence of heteroskedasticity. As the above result, the study had already rejected the null hypothesis and it did not have constant variance (homoskedasticity).

The aim of hypothesis 2 is to seek any correlation between DP_{post} in M&A and the involved characteristics in the firm. It can be clear that there is an insignificant impact of the DS_{pre} on DP_{post} in 2 years following M&A . So, it was not likely to adjust the ratio paying dividend for shareholders after M&A. With p-value and coefficient was 0.016 and 1.071 respectively, DP_{pre} had a positive correlation with DP_{pos} . Besides, “GRO”, “PRO” and “LEV” had a significant impact on the post dividend payout ratio after 2 years. However, in terms of the “GRO” indicator, there was a negative relationship with the dependent variable. These changes in characteristics may imply that due to M&A, firms probably received additional funds from the acquirers, so PRO improved, GRO decreased and led to the paying more dividends (E.F. Fama, K.R. French , 2001). “SIZE” is another characteristic that had no effect on dividend payout ratio.

Table 7: Regression Outcomes of Acquirer Firms

	OLS		Fixed effect		Random effect	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
DS_{pre}	.2032109	0.028 (**)	.0172493	0.914	.2040014	0.025 (**)
DP_{pre}	.2341937	0.027 (**)	.2812998	0.118	.2282099	0.029 (**)
SIZE	-.0331624	0.557	-.1490623	0.803	-.0324386	0.574
GRO	-.0745291	0.000 (***)	-.118684	0.000 (***)	-.0761315	0.000 (***)
PRO	1.070519	0.019 (**)	1.234473	0.303 (***)	1.05834	0.020 (**)
LEV	.0824119	0.006 (***)	.2418146	0.001 (***)	.0864661	0.003 (***)
Cons	.2620423	0.613	1.461206	0.798	.2528032	0.635
	R-squared	0.4519	R-sq:	0.1145	R-sq:	0.4516
	Adj R-squared	0.3971				
F-test for Fixed effect						
Ho: All fixed effect is 0 F test that all u _i =0: F(35, 25) = 1.39 Prob > F = 0.1964						
Results: accept Ho, choose OLS						
Breusch-Pagan Lagrangian multiplier (LM) test for random effects						
Ho: All random effect is 0 chibar2(01) = 0.04 Prob > chibar2 = 0.4226						
Results: accept Ho, choose OLS						

Same as with the table 6, table 7 also illustrates some ways of regression model in testing these variables. Nevertheless, at the F-test, the result of p-value was greater than 0.05, meaning that the study had better choose OLS for the analysis. Continually, LM was used to compare between REM and OLS. So. It is no doubt that OLS is the best one with the Prob > chibar2 = 0.4226. So, there was no need to take an additional Hausman test. OLS was the appropriate model to illustrate the correlation among variables in the acquirer firms.

Unlike target firms, DS_{pre} has the impact on DP_{post} of firms after 2 years, with p-value is 0.028. In addition, it has a positive relationship with DP_{post}, therefore, it may lead to the increase in payout ratio of firms for shareholders. Same as the result of target, DP_{pre}, GRO, and PRO had a positive relationship with the dependent variable. Hence, only the “SIZE” factor also had no

effect on the dividend payout ratio of the acquirer. With the Adj R-squared was 0.3971, it means that 39.71% of variation in dependent variable could be explained by mentioned independent variables.

To conclude, from the results mentioned above, generally, the paper would accept hypothesis 2 that after M&A, some characteristics of firms gradually changed and as well impacted on the dividend payout ratio of firms after 2 years. Especially, due to the positively significant influence of pre dividend payout ratio, the paper confirmed the positive modification of dividend payout ratio after M&A from Allen, 1992; McCluskey et al., 2007; Pourheidari, 2009; Tse, 2005, Baker et al. (2002) and Farrelly et al. (1986). Besides, in case of target and acquirer, profit had positive significance and growth was negative correlation with post dividend payout ratio. So this was consistent with Baker et al. (1985); Pruitt and Gitman (1991), Rozeff (1982); Lloyd et al. (1985); Collins et al. (1996) Mohammed Amidu and Joshua Abor (2006).

- **Dividend payout ratio of acquirer firms is influenced by both target and acquirer activities.**

In this section, the study is covered M&A transactions, which includes both characteristics of target and acquirer firms. Pearson's correlation and VIF were also used to test the correlation and check multicollinearity among variables. As a result, with 1.47 of VIF, there was no multicollinearity in the model and otherwise, these variables had the influence on others (Appendix 1.5).

Through many testing about the F-test, LM test and Hausman test as in the separate part above, eventually, OLS was chosen as the main model to explain the characteristics of target and acquirer firms, which had an impact on the acquirer's dividend payout ratio after 2 years in M&A. In particular, when testing F-test, p-value was 0.208 (> 0.05), OLS was chosen. Otherwise, regarding the Hausman test, REM was the suitable one, through which Prob $>$ chi2 was 0.1920. Meanwhile, with the LM test, the result was in favour of OLS regression with 0.3983 of prob $>$ chibar2 (Appendix 1.5). Below is the table of OLS model to explain the relationship between dependent variable and independent variables.

Table 8: OLS regression of acquirer firms in combined activities

DP_{acq}	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
DS_{pre-acq}	.1633743	.0835152	1.96	0.055(*)	-.0037996	.3305483
DP_{pre-acq}	.2049064	.0931195	2.20	0.032 (**)	.0185075	.3913053
SIZE_{acq}	-.0804965	.0547526	-1.47	0.147	-.1900957	.0291027
GRO_{acq}	.0165353	.01886	0.88	0.384	-.021217	.0542877
PRO_{acq}	1.123883	.5507144	2.04	0.046(**)	.0215085	2.226258
LEV_{acq}	-.027879	.0302066	-0.92	0.360	-.088344	.032586
DP_{pre-tar}	-.1436887	.0779733	-1.84	0.070 (*)	-.2997692	.0123917
DS_{pre-tar}	.0611925	.1218999	0.50	0.618	-.1828168	.3052017
SIZE_{tar}	-.0687312	.044645	-1.54	0.129	-.1580979	.0206354
GRO_{tar}	-.0499722	.0933441	-0.54	0.594	-.2368207	.1368762
PRO_{tar}	-.1328607	.2504859	-0.53	0.598	-.6342628	.3685414
LEV_{tar}	.0384836	.0324877	1.18	0.241	-.0265477	.1035148
_cons	1.583571	.6783652	2.33	0.023	.2256757	2.941467

So, the data from the table communicates that in general, all activities of the target firm had no effect on DP_{acq}. In the case of integration, only DP_{pre-acq} and PRO_{acq} factors had a significant impact on the dependent variable and made it increase after 2 years of M&A. It made DP_{acq} increase after 2 years following M&A. While, DP_{pre-tar} had a negative correlation with DP_{post-acq}, however DP_{post-tar} had a smaller effect on the dependent variable, with p-value nearly 10%. Hence, it had a minor adjustment on DP_{post-tar}.

So, it probably concludes that in terms of M&A, the target firm would not have any effect on the payment for shareholders, while the internal characteristics of acquirers perhaps changed due to either the modification of the inside policy or external factors. The result was likely to advocate some previous papers from Julian, Robert, and Sheridan (1994), Jensen and

Ruback (1983), Datta et al. (1992) and Bruner (2001) who identify the significant influence of targets on acquirer firms in terms of M&A.

4.3 Paired t-test method

Alternatively, with the paired t-test, the study attempts to compare the difference of dividend payout ratio between pre and post merger. Regarding variables, industry adjusted dividend payout ratio is used in the paired t-test to avoid some bias from the market fluctuation.

Table 9A: Paired t-test of Target firms

	N	Mean	Std. Deviation	Diff. Mean
ADP_{Post}	125	.238	.0473093	.15704
ADP_{Pre}	125	.08096	.044013	
Ho: mean (ADP _{Post} - ADP _{Pre}) = 0				
Ha: mean(diff) < 0 Pr(T < t) = 0.9948		Ha: mean(diff) != 0 Pr(T > t) = 0.0104		Ha: mean(diff) > 0 Pr(T > t) = 0.0052
Results: Reject Ho , ADP _{Post} > ADP _{Pre}				

As a result, it can be seen that with p-value is 0.0104, meaning that Ho is rejected, so after M&A, ADP_{Post} was not the same as the previous status. In addition, in the upper-tailed of paired t-test (mean(diff) > 0), it showed that p-value was significant at the value of 0.0052. Therefore, the study can certainly conclude that the adjusted dividend payout ratio would increase after M&A. It is the same as the result from FEM which has already proved about the positive relationship between DP_{Pre} and DP_{Post} in the extent of target firms.

Table 9B: Paired t-test of Acquirer firms

	N	Mean	Std. Deviation	Diff. Mean
ADP_{Post}	82	.252561	.0533655	.1326829
ADP_{Pre}	82	.119878	.0424883	
Ho: mean (ADP _{Post} - ADP _{Pre}) =0				
Ha: mean(diff) < 0		Ha: mean(diff) != 0		Ha: mean(diff) > 0
Pr(T < t) = 0.9859		Pr(T > t) = 0.0281		Pr(T > t) = 0.0141
Results: Reject Ho , ADP _{Post} > ADP _{Pre}				

As the same result from the target firms, ADP_{Post} performs well after M&A, through which p-value was less than 0.0141. So, ADP_{Pre} is greater than ADP_{Post} in the extent of acquirer firms. These results would confirm the investigation about the significant change of past and current dividend payout ratio of Al-Twajjry(2007), Brav et al. (2015),Michael S. Rozeff (1982).

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Research summary and Finding

To summarize, the paper aims to consider the dividend policy following M&A, through which it would like to analyze the dividend status and dividend payout ratio through many firms. With different methods, paper is expected to identify the general picture of M&A in the Vietnam market. Regarding the probit model, dividend status was analyzed to find any shifting after consolidating. Additionally, in case of dividend payout ratio, regression and paired t-test method proved the change of this rate before and after 2 years. Data was provided by firms listed in HOSE and HNX over 10 years, ranging from 2007 to 2017, so as to research the M&A in Vietnam.

In detail, following probit method, the previous dividend status of target and acquirer firms are positive correlation with the recent one. As a result, the paper confirm the Hypothesis 1 and make a conclusion that dividend status in the past made the dividend in current increase following M&A event. It may lead to the general identification that shareholders still be served well after the transformation.

Nextly, in the analysis of regressions, it can easily realize that firm's characteristics' change after M&A. In particular, the previous dividend payout ratio and profit factor have a positive influence on the dependent ratio, which probably means that after M&A, firms invest less and earn more to keep the retained earnings to pay dividend for shareholders. It is appropriate for the catering theory (E.F. Fama, K.R. French, 2001). However, when the paper tends to analyse the dividend payout ratio of acquirer firms in mixing characteristics of target and acquirer, there is an insignificant effect of characteristics of target firms on the acquirer firms.

Finally, paired t-test is the alternative method to consider straight forward about the dividend payout ratio in pre and post merger. Consequently, it once again supports the idea that after M&A, post industry adjusted dividend payout ratio was increased.

In conclusion, dividend policy following M&A in Vietnam, particularly in dividend status and dividend payout ratio, changed significantly in each side of M&A transaction. Moreover, dividend payout ratio correlated positively with profit and contemporarily related negative with growth and leverage factors. Hence, the firms might earn more revenue rather than seek for the additional investment from outside. Otherwise, firms probably modified the internal policy to make factors adjust together.

5.2 Contributing and Recommendation

The study probably contributes to the research in terms of M&A, especially in dividend policy. It will provide a clear image about the consolidating between 2 firms and can be used as the basic platform for many future papers which expect to consider any change of dividend policy after M&A. Frankly, Vietnamese M & A is still a rare topic for researchers to study and favor in the topic. Therefore, we expect that the paper can be the primary contributor for subsequent topics in Vietnam. Besides, the paper provides more evidence that following M&A, profit perhaps increases and then pushes the ratio of paying dividend for shareholders better. But, in the paper, we still do not find any correlation of target's activities on dividend payout ratio of acquirer firms. Hence, we expect that we could find the significant one in the new market relating to M&A in the near future.

Nevertheless, it still includes some flawed assessments in the paper :

First, the paper can not cover all of the recent data in the case of M&A in Vietnam. Hence, data of firms' characteristics was not provided enough to present strongly about the overall factors of dividend policy in M&A

Second, regarding dividend status, data is needed to provide more information about the deal characteristics, such as toehold, hostile, or horizontal, instead of merely being provided about the prior dividend status. It will help the model become more valid and credibility when proving the change about dividend status following M&A

Lastly, some M&A deals needed more apparent information about the deal size, to facilitate in collecting data to make it appropriate as calculating and analysing.

Therefore, in the future, paper will improve considerably to develop the aspect of dividend policy in Vietnam profoundly:

- **Variable:** the next paper should include more factors relating to dividend policy, such as ownership structure, legal rules or business cycles so that the later study can confirm certainly about dividend policy following M&A.
- **Time:** data should be included in recent years, for instance either in 2018 or in 2019, to update the situation of M&A in Vietnam when analysing.
- **Sample size:** the paper needs to find more M&A deals between Vietnam firms and foreign firms to expand the viewpoint. In recent, foreign investors have increasingly focused on the local firms. Many well-known cases, such as Nguyen Kim and Central Group (in Thailand), Kinh Do and Mondelez International (US), Highland Coffee and Jollibee (Philippines) or Diana and Unicharm (Japan), should be applied in the near future so that dividend policy can be analysed and consider after changing the owner of these companies.

References

AGRAWAL, A., JAFFE, J. F., & MANDELKER, G. N. (1992). The Post-Merger Performance of Acquiring Firms: A Re-examination of an Anomaly. *The Journal of Finance*, 47(4), 1605–1621. <https://doi.org/10.1111/j.1540-6261.1992.tb04674.x>

Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992). The Post-Merger Performance of Acquiring Firms: A Re-examination of an Anomaly. In *THE JOURNAL OF FINANCE* *: Vol. XLVII (Issue 4).

Akhigbe, A., & Madura, J. (1996). Dividend Policy and Corporate Performance. *Journal of Business Finance & Accounting*, 23(9–10), 1267–1287. <https://doi.org/10.1111/1468-5957.00079>

Allen, F., & Michaely, R. (2003). Chapter 7 Payout policy. In *Handbook of the Economics of Finance* (Vol. 1, Issue SUPPL. PART A, pp. 337–429). Elsevier B.V. [https://doi.org/10.1016/S1574-0102\(03\)01011-2](https://doi.org/10.1016/S1574-0102(03)01011-2)

Amidu, M., & Abor, J. (2006). Determinants of dividend payout ratios in Ghana. *Journal of Risk Finance*, 7(2), 136–145. <https://doi.org/10.1108/15265940610648580>

Anand, M., & Singh, J. (n.d.). *RESEARCH Impact of Merger Announcements on Shareholders' Wealth: Evidence from Indian Private Sector Banks* (Vol. 33). www.insight.asiancerc.com

Andrade, G., Mitchell, M., & Stafford, E. (2001). New evidence and perspectives on mergers. *Journal of Economic Perspectives*, 15(2), 103–120. <https://doi.org/10.1257/jep.15.2.103>

Baker, M., & Wurgler, J. (2004). Appearing and disappearing dividends: The link to catering incentives. *Journal of Financial Economics*, 73(2), 271–288. <https://doi.org/10.1016/j.jfineco.2003.08.001>

Baker, M., Wurgler, J., Baker, K., Brav, A., Cohen, R., D'Avolio, G., Figlewski, S., Gabaix, X., Gompers, P., Heider, F., Hodrick, L., Jenter, D., John, K., Kaplan, S., Long, J., Martinez-Jerez, A., Mayer, C., Morck, R., Mueller, H., ... Zingales, L. (n.d.). *A Catering Theory of Dividends*. <http://ssrn.com/abstract=342640> Electronic copy available at: <http://ssrn.com/abstract=342640>

Brav, A., Graham, J. R., Harvey, C. R., Michaely, R., Allen, C., Bernhardt, D., Deangelo, H., Deangelo, L., Dittmar, A., Fama, G., Gallant, R., Ikenberry, D., Jordan, B., Koski, J., Lamont, O., Lie, E., Mannix, B., McConnell, J., O'connor, K., ... Zingales, L. (n.d.). *Payout policy in the 21st century We thank the following people for suggestions about survey and interview design: Payout policy in the 21st century*.

Denis, D. J., & Osobov, I. (2008). Why do firms pay dividends? International evidence on the determinants of dividend policy. *Journal of Financial Economics*, 89(1), 62–82. <https://doi.org/10.1016/j.jfineco.2007.06.006>

Dereeper, S., & Turki, A. (2016). Dividend policy following mergers and acquisitions: US evidence. *Managerial Finance*, 42(11), 1073–1090. <https://doi.org/10.1108/MF-10-2015-0293>

Dickerson, A. P., Gibson, H. D., & Tsakalotosj, E. (1997). THE IMPACT OF ACQUISITIONS ON COMPANY PERFORMANCE: EVIDENCE FROM A LARGE PANEL OF UK FIRMS. In *Oxford Economic Papers* (Vol. 49). <http://oep.oxfordjournals.org/>

Fama, E. F., & French, K. R. (2001). Disappearing dividends: changing firm characteristics or lower propensity to pay? In *Journal of Financial Economics* (Vol. 60).

Franks, J., Harris, R., & Titman, S. (n.d.). The postmerger share-price performance of acquiring firms*. In *Journal of Financial Economics* (Vol. 39, Issue 199). Norrh-Holland.

Fuller, K., Netter, J., Stegemoller, M., Bhagat, S., Goldstein, M., Kim, ; E Han, Lipson, M., Mauer, D., O'hara, M., Petty, B., Poulsen, A., Rau, R., & Titman, S. (2002). What Do Returns to Acquiring Firms Tell Us? Evidence from Firms That Make Many Acquisitions. In *THE JOURNAL OF FINANCE* • Vol. LVII (Issue 4).

Glabosky, M., Jory, S. R., & Ngo, T. N. (2020). The wealth effects of mergers and acquisitions by dividend payers. *Quarterly Review of Economics and Finance*. <https://doi.org/10.1016/j.qref.2020.01.013>

Goddard, J., McMillan, D. G., & Wilson, J. O. S. (2006). Dividend smoothing vs dividend signalling: evidence from UK firms. *Managerial Finance*, 32(6), 493–504. <https://doi.org/10.1108/03074350610666229>

Jabbouri, I. (2016). Determinants of corporate dividend policy in emerging markets: Evidence from MENA stock markets. *Research in International Business and Finance*, 37, 283–298. <https://doi.org/10.1016/j.ribaf.2016.01.018>

Korkeamaki, T., Liljeblom, E., & Pasternack, D. (2010). Tax reform and payout policy: Do shareholder clienteles or payout policy adjust? *Journal of Corporate Finance*, 16(4), 572–587. <https://doi.org/10.1016/j.jcorpfin.2009.12.003>

Letaifa, W. Ben. (2019). What Tells the Timing of Dividend Payment to Shareholders? The Case of French Companies. *International Journal of Accounting and Financial Reporting*, 9(1), 183. <https://doi.org/10.5296/ijafr.v9i1.14338>

Letaifa, W. Ben. (2016). STUDY OF DIVIDEND POLICIES IN PERIODS PRE AND POST-MERGER. In *Corporate Ownership & Control* (Vol. 13, Issue 2).

Loderer, C., & Martin, K. (1992). Postacquisition Performance of Acquiring Firms. In *Source: Financial Management* (Vol. 21, Issue 3).

Malik, M. F., Anuar, M. A., Khan, S., & Khan, F. (2014). Mergers and Acquisitions: A Conceptual Review. *International Journal of Accounting and Financial Reporting*, 1(1), 520. <https://doi.org/10.5296/ijafr.v4i2.6623>

Papadakis, V. M., & Thanos, I. C. (2010). Measuring the performance of acquisitions: An empirical investigation using multiple criteria. *British Journal of Management*, 21(4), 859–873. <https://doi.org/10.1111/j.1467-8551.2009.00671.x>

Quan Viet, P., & Chi Minh City, H. (2014). Some Recommendations of M&A Activity in Vietnam Today. *International Economics and Business*, 1(1). <https://doi.org/10.5296/ieb.v2i1.7893>

Rahman, M., Lambkin, M., & Hussain, D. (2016). Value creation and appropriation following M&A: A data envelopment analysis. *Journal of Business Research*, 69(12), 5628–5635. <https://doi.org/10.1016/j.jbusres.2016.03.070>

Rozeff, M. S. (1982). GROWTH, BETA AND AGENCY COSTS AS DETERMINANTS OF DIVIDEND PAYOUT RATIOS. In *The Journal of Financial Research* • (Issue 3).

Selcuk, E. A., Akben-Selcuk, E., & Altioek-Yilmaz, A. (2016). The Impact of Mergers and Acquisitions on Acquirer Performance: Evidence from Turkey. In *Business and Economics Journal* (Vol. 2011). <http://astonjournals.com/bej>

Shah, P., & Arora, P. (2014). M&A Announcements and Their Effect on Return to Shareholders: An Event Study. *Accounting and Finance Research*, 3(2). <https://doi.org/10.5430/afr.v3n2p170>

Suwanna, T. (2012). Impacts of Dividend Announcement on Stock Return. *Procedia - Social and Behavioral Sciences*, 40, 721–725. <https://doi.org/10.1016/j.sbspro.2012.03.255>

Torres-Reyna, O. (2007). *Panel Data Analysis Fixed and Random Effects using Stata (v. 4.2)*. <http://dss.princeton.edu/training/>

Turki, A. (2019). DIVIDEND POLICY AND STOCK ACQUISITION ANNOUNCEMENT RETURNS: A TEST OF ASYMMETRIC INFORMATION THEORY. *Journal of Financial Research*, 42(1), 115–145. <https://doi.org/10.1111/jfir.12164>

Vuong, Q. H., Napier, N. K., & Samson, D. E. (2013). Innovation as Determining Factor of Post-M&A Performance: The Case of Vietnam. *International Journal of Business and Management*, 8(18). <https://doi.org/10.5539/ijbm.v8n18p25>

Wansley, J. W., Lane, W. R., & Yang, H. C. (1983). Abnormal Returns to Acquired Firms by Type of Acquisition and Method of Payment. In *Management* (Vol. 12, Issue 3).

Zollo, M., & Meier, D. (n.d.). *What Is M&A Performanc*

Appendix:

Appendix 1.1: Dividend status of target firms (yearly)

. probit ds12 ds21

Iteration 0: log likelihood = -86.923764

Iteration 1: log likelihood = -77.972602

Iteration 2: log likelihood = -77.960533

Iteration 3: log likelihood = -77.960532

Probit regression

Number of obs = 144

LR chi2(1) = 17.93

Prob > chi2 = 0.0000

Pseudo R2 = 0.1031

Log likelihood = -77.960532

ds12	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ds21	1.011357	.241401	4.19	0.000	.5382196	1.484494
_cons	-.1196481	.1938944	-0.62	0.537	-.4996742	.260378

Appendix 1.2: Dividend status of target firms (A period of 2 years)

. probit ds12 ds21

Iteration 0: log likelihood = -25.115911

Iteration 1: log likelihood = -22.68879

Iteration 2: log likelihood = -22.650354

Iteration 3: log likelihood = -22.65035

Iteration 4: log likelihood = -22.65035

Probit regression

Nuber of obs = 72

LR chi2(1) = 4.93

Prob > chi2 = 0.0264

Pseudo R2 = 0.0982

Log likelihood = -22.65035

ds13	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ds31	.9900019	.441519	2.24	0.025	.1246406	1.855363
_cons	.5024022	.3640289	1.38	0.168	-.2110813	1.215886

Appendix 1.3: Dividend status of acquirer firms (yearly)

. probit ds12 ds21

Iteration 0: log likelihood = -49.308938
 Iteration 1: log likelihood = -44.027236
 Iteration 2: log likelihood = -44.022782
 Iteration 3: log likelihood = -44.022782

Probit regression	Number of obs	=	84
	LR chi2(1)	=	10.57
	Prob > chi2	=	0.0011
Log likelihood = -44.022782	Pseudo R2	=	0.1072

ds12	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ds21	1.097117	.3412664	3.21	0.001	.4282467	1.765986
_cons	-.1992013	.2896126	-0.69	0.492	-.7668317	.368429

Appendix 1.4: Dividend status of acquirer firms (A period of 2 years)

. probit ds13 ds31

Iteration 0: log likelihood = -10.807383
 Iteration 1: log likelihood = -7.4618862
 Iteration 2: log likelihood = -7.3970277
 Iteration 3: log likelihood = -7.3969
 Iteration 4: log likelihood = -7.3969

Probit regression	Number of obs	=	42
	LR chi2(1)	=	6.82
	Prob > chi2	=	0.0090
Log likelihood = -7.3969	Pseudo R2	=	0.3156

ds13	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ds31	1.937932	.7575336	2.56	0.011	.4531929	3.42267
_cons	-6.34e-17	.6266571	-0.00	1.000	-1.228225	1.228225

Appendix 1.5: Dividend payout ratio of acquirer firms in both sides of targets and acquirers

- Pearson's Correlation**

pworth adp12 ads21 adp21 asize12 agro12 apro12 alev12 ds21 dp21 size12 gro12 pro12 lev12,
sig

| adp13 ads31 adp31 asize13 agro13 apro13 alev13

-----+-----

adp13		1.0000																	
ads31		0.3326	1.0000																
		0.0006																	
adp31		0.3939	0.4332	1.0000															
		0.0001	0.0000																
asize13		0.0008	0.2648	0.2345	1.0000														
		0.9938	0.0084	0.0215															
agro13		-0.0479	0.0216	-0.0761	0.2483	1.0000													
		0.6432	0.8337	0.4636	0.0147														
apro13		0.1305	0.0551	0.1350	0.3069	-0.0875	1.0000												
		0.1933	0.5841	0.1827	0.0024	0.3990													
alev13		-0.1481	0.0469	0.1081	0.0091	0.2503	-0.3439	1.0000											
		0.1685	0.6627	0.3160	0.9328	0.0194	0.0011												
ds31		-0.0833	-0.0872	-0.2132	-0.1406	-0.0820	-0.0236	0.0246											
		0.4054	0.3812	0.0323	0.1674	0.4246	0.8151	0.8187											
dp31		0.0586	-0.0573	-0.1230	-0.1633	-0.1193	-0.0751	-0.1240											
		0.5728	0.5794	0.2351	0.1219	0.2627	0.4722	0.2639											

```

size13 | -0.0290  0.1790  0.0274  0.0519  0.1095 -0.0712  0.0182
        |  0.7757  0.0748  0.7888  0.6172  0.2933  0.4862  0.8682
gro13  | -0.1470 -0.0443  0.0207  0.0888  0.0059 -0.0063 -0.2123
        |  0.1444  0.6597  0.8392  0.3895  0.9550  0.9509  0.0484
pro13  |  0.0147 -0.0533 -0.0078 -0.0228 -0.0062  0.0196  0.0952
        |  0.8849  0.5964  0.9389  0.8258  0.9525  0.8472  0.3746
lev13  |  0.1371  0.1049  0.0514  0.0513  0.0116 -0.0396 -0.0529
        |  0.1924  0.3194  0.6282  0.6372  0.9157  0.7093  0.6433

```

. vif

```

Variable |    VIF    1/VIF
-----+-----
    dp31 |    2.11  0.473906
    pro13 |    1.91  0.524845
    alev13 |    1.63  0.612690
    apro13 |    1.59  0.628490
    adp31 |    1.42  0.705769
    ds31  |    1.38  0.724892
    lev13 |    1.37  0.730824
    ads31 |    1.36  0.737470
    asize13 |    1.35  0.741878
    agro13 |    1.21  0.827266
    gro13  |    1.21  0.828933
    size13 |    1.11  0.900326
-----+-----
Mean VIF |    1.47

```


- **Regression models**

	OLS		Fixed effect		Random effect	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
DSpre-acq	.1633743	0.055	.0536694	0.744	.1622876	0.054
DPpreacq	.2049064	0.032	.3754749	0.046	.2073837	0.027
SIZE_{acq}	-.0804965	0.147	-.4752978	0.566	-.0820244	0.149
GRO_{acq}	.0165353	0.384	-.0080922	0.765	.014303	0.449
PRO_{acq}	1.123883	0.046	.2943078	0.893	1.198706	0.034
LEV_{acq}	-.027879	0.360	.0849692	0.198	-.0219095	0.476
DS_{pre-tar}	-.1436887	0.070	-.1926451	0.250	-.1508829	0.058
DP_{pre-tar}	.0611925	0.618	.2317144	0.392	.0683192	0.584
SIZE_{tar}	-.0687312	0.129	-.070436	0.919	-.0677604	0.150
GRO_{tar}	-.0499722	0.594	.0743416	0.668	-.0436907	0.643
PRO_{tar}	-.1328607	0.598	.8122938	0.192	-.127615	0.619
LEV_{pre-acq}	.0384836	0.241	-.2456977	0.057	.0344467	0.309
cons	1.583571	0.023	5.412002	0.482	1.581679	0.026
	R-squared	0.3784	Rsqr	= 0.5018	R-sq:	= 0.3775
	Adj R-squared	0.2497				
F-test for Fixed effect						
Ho: All fixed effect is 0 F test that all $u_i=0$: $F(38, 20) = 1.28$ Prob > F = 0.2804						
Results: accept Ho, choose OLS						

Breusch-Pagan Lagrangian multiplier (LM) test for random effects		
Ho: All random effect is 0	chibar2(01) = 0.07	Prob > chibar2 = 0.3983
Results: accept Ho, choose OLS		
Hausman test		
Ho: preferred REM	chi2(12) = 15.98	Prob>chi2 = 0.1920
Results: accept Ho, choose Random		