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Mergers and Acquisitions and its Effects on Firm Performance: A New Look

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Abstract: The Philippine financial sector has experienced increased merger activity during the first merger wave in the 1990s as well as in the early 2000s (BSP, 2000). This was partly due to increased incentives provided for by regulatory bodies for mergers in the said industry. Recently, the BSP has further improved the incentive system for mergers which may be due to: (1)the large number of rural banks in proportion to the total number of banks (as shown in Figure 1) as well as (2) the upcoming ASEAN integration. The BSP believes that merger and acquisition activities shall result in stronger players in the market that will help stabilize the financial industry of the country. This was supported by Pasadilla (2004) in her study, where she provided empirical evidence supporting further consolidation activity through the herfindal index. However, the benefits of mergers and acquisitions on firm performance are not that evident. Mixed results were obtained from past studies about the effect of mergers and acquisitions on firm performance. This study examined mergers and acquisitions from 2006 to 2010 in the Philippine financial industry and its effect on firm performance using both return on asset and abnormal return on asset adopted from the framework of Ball and Brown (1968). The results show that using return on assets (ROA), financial performance significantly decreased after the merger. However, I find no significant change in the abnormal return on asset before and after the merger activity. This may indicate that the decrease in the return on assets was caused by market movement and not by the merger activity.

Key words: Merger and acquisitions; profitability; banks

1. INTRODUCTION AND RELATED LITERATURE

1.1 Introduction

Due to different factors such as globalization and technological advancements, market competition in different industries has become tighter. In order to stay ahead of the competition, management of industry players are now looking for different strategies and practices. One strategy being used by these players is through merger and acquisitions. Merger and acquisitions is one of the most important investment decision made by corporate owners (i.e. Board of Directors)(Bhabra & Huang, 2013).

The Philippine financial sector has experienced increased merger activity during the first merger wave in the 1990s as well as in the early 2000s (BSP, 2000). This was partly due to increased incentives provided for by regulatory bodies for mergers in the said industry. Recently, the BSP has further improved the incentive system for mergers which may be due to: (1)the large number of rural banks in proportion to the total number of banks as well as (2) the upcoming ASEAN integration. The BSP believes that merger and acquisition activities shall result in stronger players in the market that will help stabilize the financial industry of the country. This was supported by Pasadilla (2004) in her study, where she provided empirical evidence supporting further consolidation activity through the herfindal index.

With the increased emphasis by regulators and industry players on mergers and consolidation, I want to address the following problem: What is the effect of merger and acquisition activities on the long-term financial performance of the acquiring firms?

In order to address this question, this paper analyzes the financial performance of the acquiring companies before and after the merger and acquisition activities. This must be determined because of mixed empirical results brought about by studies on the subject matter conducted in different countries. In this study, pre- and post-merger abnormal return on asset was compared to determine any significant changes brought about by mergers and acquisitions. To estimate the abnormal return on asset, I would be adapting the framework used by Ball and Brown (1968) which would to minimize the effect of different factors (such as macro-economic factors and policy-related factors) that might influence the statistical results.

The remainder of the paper is divided into the different sections. Section 1.2 critically reviews the available literature on the topic on hand. Section 2 discusses the method of data analysis to provide empirical evidence to address the research question as well as the testable hypotheses. Section 3 provides the empirical results and the implications of such results on the acquiring firms, industry players and regulatory bodies such as BSP. Lastly, Section 4 discusses the concluding remarks as well as avenues for further research.

1.2 Review of Related Literature

In the research community, merger and acquisition is still a hot topic that sparks debate among academicians. A larger number of studies have been conducted in order to determine direction of post-acquisition performance. However, despite numerous empirical researches linking merger to financial performance, no consensus has been reached. This section discusses the motives for merger and acquisition, a brief background of merger activities in the financial industry of the Philippines, the variables used to describe the construct of profitability as well as argue the need for a new construct to try shedding light on the inconsistent results found in different studies.

1.2.1 Motives for Mergers and Acquisitions

Mergers and acquisitions revolve around the acquisition and/or combination of different existing firms. Most economic theories describing the motive for merger and acquisition activity revolve around the creation of synergy as well as economies of scale (King, Dalton, & Daily, 2004; Andrade, Mitchell, & Stafford, 2001). One such theory is the efficiency theory. Under the efficiency theory, mergers are planned and executed with the main objective of achieving synergies (i.e. financial synergies, operational synergies and managerial synergies) which in turn led to the rise of studies concerning synergy using corporate performance data or profit (Trautwein, 1990).

The two leading merger and acquisition efficiency theories are disciplinary and synergistic merger motives. Disciplinary mergers theory suggests that acquiring firms acquire other underperforming companies with the objective of improving their performance by realizing the full potential of the target. On the other hand, synergistic mergers theory suggests that acquiring firms consolidate with other complementary performing companies in order to obtain efficiency gains.

1.2.2 Mergers in the Philippine Financial Industry

The Philippine financial system is subject to significant regulation in order to protect risk of failure of one bank leading to failure of other banks and to minimize asymmetry of information (Castillo, 2009). Due to this rationale, regulatory authorities believed that having bigger players in the financial industry would help create a stable financial system. In order to achieve this, the BSP encouraged mergers and acquisitions to reduce the number of players as well as increase the average size of the banks, which lead to a merger wave in the 1990s. Circular no. 771 of the BSP (series of 2012) further provided additional incentives for banks to participate in merger and acquisitions activities. However, acquiring banks should be able to generate synergy, which may be in the form of improved financial performance, in order to be interested in consolidation. Therefore, this study tackles the effects of mergers on corporate performance of listed firms under the Philippine financial industry.

1.2.3 Measures of Corporate Performance

Several measures of profitability had been empirically used to determine the effect of mergers on corporate performance. Two of the most widely used measures of profitability are return on assets and return on equity. Other measures that are widely used include net profit margin and operating pre-tax cash flows. These measurements have been subjected to different economic, regulatory and political conditions and have yielded different results, as evidenced by table 1. For return on assets, several researchers have indicated improved post-acquisition return on assets while a number found declined return on assets. Moreover, some researchers noted no statistical evidence of change in the pre- and post-merger return on assets.

The widely inconsistent results might suggest problems in describing the construct of profitability using the traditional measures of financial performance such as return on assets, return on equity and net profit margin.

Table 1. Empirical Results of Related Studies

Variable	Direction	Supporting Studies
Return on assets	(+)	Kalra (2013); Cornett et al. (2006); Bernad et al. (2013); Fraser & Zhang (2009); Knapp et al. (2006); Vennet(1997)
	(-)	Yeh& Hoshino (2002); Ooghe et al. (2006); Ismail et al. (2009); Kemal (2011)
	No significant effect	Akinbuli&Kelilume (2013); Trivedi (2013); Abbas (2014); Bhabra& Huang (2013)
Return on Equity	(+)	Vennet (1996); Cornett et al. (2006); Fraser & Zhang (2009); Knapp et al. (2006)
	(-)	Kalra (2013); Yeh& Hoshino (2002); Ooghe et al. (2006); Kemal (2011);
	No significant effect	Akinbuli&Kelilume (2013); Trivedi (2013); Ismail et al. (2009); Abbas (2014); Bhabra& Huang (2013); Campa& Hernando (2006)
Net Profit Margin	(+)	Soegiharto (2011); Akinbuli&Kelilume (2013); Kemal (2011)
	(-)	Kalra (2013); Ooghe et al. (2006)
	No significant effect	Bhabra& Huang (2013); Campa& Hernando (2006)
Operating Pre-tax Cash Flow Return on Assets	(+)	Healy et al. (1992); Fraser & Zhang (2009); Cornett et al. (2006)
	(-)	Ismail et al. (2009)

1.2.4 Methodologies Used to Assess Post-merger Performance

Typical studies made to examine pre- and post-merger performance use an event window of three to five years before and after the merger and acquisition activity. The two most widely used methodologies in the topic to test statistical difference are t-tests (Campa & Hernando, 2006; Abbas, Hunjra, Saeed, Ul-Hassan, & Ijaz, 2014; Bhabra & Huang, 2013; Cornett, McNutt, & Tehranian, 2006; Gugler, Mueller, & Yurtoglu, 2003) and test of median (Fraser & Zhang, 2009; Heron & Lie, Operating performance and the method of payment in takeovers, 2002; Ooghe, Van Laere, & De Langhe, 2006). Post merger acquisition performance is compared to the pre-merger acquisition performance, another industry player or the industry average.

The pre-merger and post-merger acquisition performance difference may be influenced by a lot of macroeconomic factors, regulatory changes and industry-wide phenomena (Knapp, Gart, & Chaudhry, 2006). Therefore, it would be difficult to determine the true effects of mergers without adequate control of these factors. Using another industry player as a control may mitigate the effect of these factors but one cannot simply discount the possible existence of firm specific variables that may influence the results. Another way to control is through comparison with the industry average, which is already adjusted for the factors discussed above. However, simply comparing performance against an index or industry average would be risky if the data exhibits mean reversion trends.

1.2.5 Research Gap and Synthesis

Studies that relate merger activities to post-merger financial performance have erupted since the study conducted by Healy et al. (1992). However, most of these studies were mere replications of the already existing literature in somewhat different context. The mixed results of the numerous literatures indicate that we need to step back and redesign our approach for studying this area.

I argue that the usage of traditional measurement of financial performance (i.e. return on assets, return on equity, operating cash-flow and net profit margin) only would pose a lot of problems that may have contributed to the inconsistent results (i.e. omitted macro-economic and market-related factors). This is supported by Qi et al. (2014) wherein they found that lagged return on assets, and certain environmental factors (i.e. pollution emission and munificence) significantly affect return on assets. Moreover, Dietrich &Wanzenried (2014) indicated that macro-economic factors (gross domestic product and inflation) as well as market structure (i.e. concentration ratio) have a significant impact on financial performance of banks. By simply concentrating on the significant difference of the profitability measures (ROA, ROE and NPM) pre- and post-merger, one cannot simply conclude that the difference is due to merger activity and not because of time (lagged values), macro-economic factors and market-related factors.

Therefore, it is imperative to study and look for new ways to tackle the problem and provide more consistent evidence of operational synergy brought about by merger and acquisition activities through controlling macro-economic, market related and time (lagged) factors. This paper aimed to provide a starting ground for the development of a different approach on computing the measurement bases of post-merger firm performance.

2. METHODOLOGY

The objective of this paper is to determine the effects of mergers and acquisitions on the financial performance of a company. The financial performance of acquiring firms is analyzed from 3 years prior to 3 years after the acquisition and is measured using return on assets and abnormal (or unexpected) return on assets. Significance of the difference of the abnormal return on assets was estimated by using a paired t-test. The hypothesis for the pair t-test is:
Ha1: There is a significant difference between the pre- and post-merger return on assets.
Ha2: There is a significant difference between the pre- and post-merger abnormal return on assets.

First, an expected increase in income was computed using the framework used by Ball and Brown (1968). The framework is based on the premise that income of firms move together in the same direction and the same rate without any external shock (such as mergers). This framework shall allow consideration of both macro-economic factors and regulatory effects. The change in income was estimated as follows:

$$\Delta I_{j,t} = \hat{\beta}_0 + \hat{\beta}_1 \ \Delta M_{j,t} + \hat{\mu}_{j,t} \qquad \text{(Eq. 1)}$$

where:

$\Delta I_{j,t}$ = change in firm j^' s income for year t
$\Delta M_{j,t}$ = change in the average income of all firms (other than firm j)in the market

The market shall consist of all firms included in the population defined in the previous section. The expected change in income for firm j in year t is then estimated using the regression coefficients in the above model as follows:

$$\Delta I_{j,t} = \hat{\beta}_0 + \hat{\beta}_1 \ \Delta M_{j,t} \qquad \text{(Eq. 2)}$$

where:

$\Delta I_{j,t}$ = change in firm j^' s income for year t
$\Delta M_{j,t}$ = change in the average income of all firms (other than firm j)in the market

The abnormal return on asset is then estimated as follows:

$$\text{AROA}_{j,t} = [AI_{j,t} - (I_{j,t} + \Delta I_{j,t})] / A_{j,t} \qquad \text{(Eq. 2)}$$

where:

$\text{AROA}_{j,t}$ = abnormal return on assets of firm j in year t
$AI_{j,t}$ = actual income of firm j in year t
$I_{j,t}$ = income of firm j for the previous period
$A_{j,t}$ = assets of firm j for year t

Finally, the ROA and AROA of companies pre- and post-merger are analyzed using the pair t-test to determine effects of mergers and acquisitions on financial performance.

3. RESULTS AND DISCUSSION

Table 2. Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Post-merger income*	2,525,157	3,830,241	2,917	14,500,000
Pre-merger income*	1,395,079	2,090,174	2,785	6,575,000
Post-merger abnormal income*	-0.61874	0.1680474	-0.273864	0.3003079
Pre-merger abnormal income*	-0.096408	0.2015560	-0.431435	0.3003079
Post-merger return on assets	0.028356	0.0232695	0.00001	0.0662685
Pre-merger return on assets	-0.096408	0.2015560	-0.431435	0.3003079

* Income and abnormal income are presented in thousands

Looking at the results, one can see that the average post-merger financial income, as compared to pre-merger financial income, increased from 1,395,079,000 to 2,525,157,000. However, the standard deviation also increased from 2,090,174 to 3,830,241. However, looking at the return on assets, the post-merger return on assets (2.8356%) was lower than the pre-merger return on assets (3.3878%). However, the abnormal income increased from -96,408 to -61,874.Furthermore, standard deviations of both return on assets and abnormal income decreased by 0.00673 and 33.5086, respectively.

The results of the first paired t-test are shown as follows:

Table 3. T-test for return on assets

Variable	Mean	Standard Error	95% Confidence Interval Lower	Upper
Post merger ROA	0.02414	0.0039425	0.0160398	0.0322477
Pre-merger ROA	0.03388	0.0057738	0.0220097	0.0457463
Difference	-0.00973	0.0027862	-0.1546140	-0.0040071

The test statistics of the first paired t-test are shown below:

Table 4. Test statistic for t-test (return on assets)

Test statistic	Value
t-value	-3.4937
p-value	0.0017 *

**Significant at 1%*

The results show that the return on assets of acquiring financial firms significantly decreased after the merger. This is consistent with the results of Yeh & Hoshino (2002), Ooghe et al. (2006) and Ismail et al. (2009). This indicates that there is a disincentive for firms to acquire other companies because there would be a decrease in their return on assets. Furthermore, looking at the confidence intervals of the pre-merger return on asset, we can see that acquiring firms are profitable before the merger activity. This may be due to extensive use of discretionary accruals prior to acquisition. These discretionary accruals are then reversed subsequently and as such, return on assets significantly decreased. However, the decrease may also be brought about by other variables such as market movement and economic growth. Therefore, a second pair t-test was conducted. The results of the second t-test are shown below:

Table 5. T-test for abnormal return on assets

Variable	Mean	Standard Error	95% Confidence Interval Lower	Upper
Post merger AROA	-0.8739	0.0263	-0.1421	-0.0327
Pre-merger AROA	-0.0964	0.0430	-0.1858	-0.0070
Difference	0.0090	0.0304	-0.0542	0.0723

The test statistics of the second paired t-test are shown below:

Table 6. Test statistic for t-test (abnormal return on assets)

Test statistic	Value
t-value	0.2964
p-value	0.7699

In the table shown above, we can see that the AROA pre- and post-merger is not significantly different. This indicates that the merger and acquisition did not generate increased abnormal returns for the acquiring firms. This is consistent with the findings of Bhabra & Huang (2013), and Trivedi (2013). Furthermore, it can be noted from table 5.4 that acquiring firms had significantly negative abnormal return on asset indicating that acquiring firms had a lower improvement in earnings as compared to the other market players pre- and post-merger.

Interestingly, the results show that the significant decrease in the return on assets post-merger was brought about by market factors. Using abnormal return on assets, we can infer that there was no decline brought about by merger activity but rather, the decline was brought about by decrease in the market income.

The results indicate that acquiring banks in the Philippines do not generally have an improved or declined abnormal return on asset. This indicates that Philippine banks consider other motivations for acquiring target firms. As such, it would be more difficult for the financial sector to achieve the BSP’s objective of lowering the number of players in the market while improving the average asset of each player.

4. CONCLUSIONS

I believe that the present study is one of the first to apply the framework of Ball and Brown (1968) in studying the abnormal earnings brought about by mergers and acquisitions. Most previous studies simply examined the effects of mergers on financial performance pre- and post-merger or compared the post-merger to a control firm or industry average. I examined all merger deals in the Philippine financial sector from 2006 to 2010 as well as profits from 2003 to 2013. I found significant decrease in the return on assets of acquiring firms post-merger. however, consistent with some prior studies (Bhabra & Huang, 2013; Trivedi, 2013; Abbas, Hunjra, Saeed, Ul-Hassan, & Ijaz, 2014), I found no evidence of improved or decreased financial performance in terms of its abnormal performance for three years after the year of merger activity. This indicates that operational synergy was not attained by banks from recent mergers and further points that it is difficult for regulators to encourage further merger activities. Moreover, this implies that the general decrease in return on assets of acquiring banks was caused by market factors and not merger as supported by Dietrich & Wanzenried (2014). As such, the BSP has taken a step in the right direction by improving the incentives provided to acquiring firms. However, further studies must be conducted in order to test the applicability of using Ball and Brown's model in testing effects of mergers on financial performance. Furthermore, a wider study may be conducted in order to improve the power of the statistical test performed.

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