CHAPTER 5

RESULTS AND DISCUSSIONS OF MEDIATION EFFECTS OF MARKET STRUCTURE BETWEEN M&As AND BANKING SECTORS

5.1 Introduction

This chapter discusses the results on the mediating role of market structure (based on measurement of LHHI and CR) in explaining the relationship between M&As and operational performance and stability for banking sectors. The discussions are divided into sections A and section B. In contrast, Part A presents the discussions based on the Herfindahl-Hirschman Index (HHI) measurement, while Part B discusses the results based on the measurement of concentration ratio (CR). This chapter aims to answer research question 3: "Does market structure play a mediating role between M&As and operational performance and stability for Islamic and conventional banks? "

5.2 Mediation Typology

In terms of the typology of the mediation, partial mediation consists of competitive mediation and complementary mediation. Technically speaking, **competitive mediation** implies when both the indirect effect path coefficient (a x b) and direct path coefficient c are significant and multiplying all coefficients (a x b) and c gives a negative value or opposite direction. At the same time, **complementary mediation** occurs when both the indirect effect path coefficient (a x b) and direct path coefficient c are significant, multiplying all coefficients (a x b) and c gives a positive value. "Competitive" and

"complementary" mediation is likely to be involved the omission of a mediator (i.e., one or more hidden mediators from the model that match the revealed sign of direct effect). Finally, for **indirect only mediation**; this type of mediation is such that indirect effects can exist in the absence of significant total and direct effects. This implies that the indirect path coefficient (a x b) is statistically significant, but direct path coefficient c is not (Nitzl, Roldan, & Cepeda, 2016; Zhao, Lynch Jr, & Chen, 2010; and Ramli, 2014, Rucker et al., 2011).

Competitive mediation: Figure 5.1 (pooled samples, pre-M&As) shows the competitive mediation of LHHI between inflation (INF) and operational performance (ROA). Based on the figure, it is observed that based on path a (X → M), inflation (INF) negatively impacts market structure (LHHI), (i.e., β =-0.009, and p-value = 0.003 at 1% significance level). This means that for every 1 unit increase to inflation (INF), that would reduce market structure (LHHI) by 0.009 units. While path b (M → Y) implies impact of market structure (LHHI) on operational performance (ROA) (i.e., β = -0.705, and p-value = 0.109 at 10% significant level) which show negative correlation between LHHI and ROA. This means that for every 1 unit increase to the LHHI, that would reduce ROA by 0.705 units. Meanwhile, path c (X → Y) states the impact inflation (INF) on operational performance (ROA) (i.e., β = -0.126, and p-value = 0.046 at 5% significant level). This means that for every 1 unit increase to the inflation that would reduce ROA by 0.126 units. Based on the relationship, the study concludes that the sign of path coefficient (a x b) is positive while path coefficient c is negative. The mediator role of LHHI between inflation (INF) and operational performance (ROA) shows competitive mediation effects. In a nutshell, the higher the level of inflation lower the level of competition, which (lower

competition), in turn, reduces the operational performance (ROA) (e.g., INF ↓ LHHI ↓ ROA ↓).

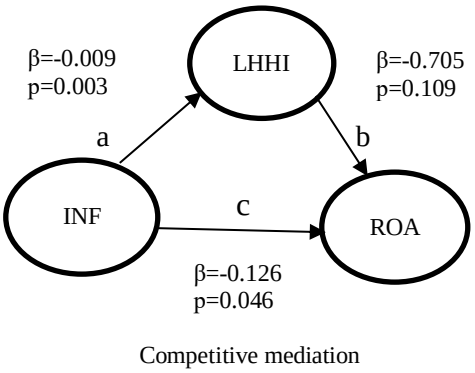

Figure 5.1: Competitive Mediation Effects

Complementary mediation: Figure 5.2 (pooled sample, pre-M&As) shows the complementary mediation of LHHI between gross domestic products (GDP) and operational performance (ROA). Based on the figure, it shows that path a (X → M), GDP positively impacts the market structure (LHHI), i.e., β = 0.8121, p-value = 0.000 which is significant at 1% level of significance, meaning that for every 1 unit increase to the GDP that would increase LHHI by 0.812 units. While in turn, path b (M → Y) shows that the market structure (LHHI) negatively impacts the ROA, resulting β = -0.705, and p-value = 0.109, which is significant at 10% level, meaning that every 1 unit increase to LHHI that would reduce ROA by 0.705 units. On the other hand, path c (X → Y), GDP negatively impacts ROA, β = -1.276, p-value = 0.016 that is significant at 5% level, meaning for every 1 unit increase to GDP that would reduce ROA by -1.276 units. The mediator role of LHHI between gross domestic product (GDP) and operational performance (ROA) shows

complementary mediation effects. In a nutshell, GDP increases competition (higher competition), increasing operational performance (e.g., GDP ↑ LHHI ↑ ROA ↓).

Based on the relationship, this study concluded that the sign of the indirect path coefficient (a x b) is negative. At the same time, the sign of path coefficient c is also negative meaning that the sign of both path coefficients is in the same direction that represents the complementary mediation effects.

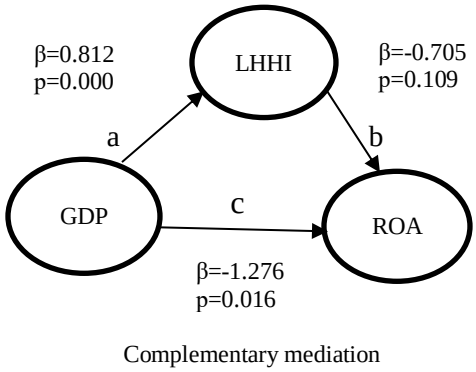

Figure 5.2: Complementary mediation effects

Indirect only mediation: Figure 5.3 (pooled sample, pre-M&As) displays that the mediator role of LHHI between bank size (BSTA) and operational performance (ROA) shows indirect only mediation effects. Based on the figure, path a (X → M), the bank size (BSTA) negatively impacts market structure (LHHI), i.e., β = -0.152, p-value = 0.000, which is significant at 1% level, meaning that for every 1 unit increase to the bank size that would reduce LHHI by 0.152 units which implies that larger bank size reduces the level of market competition and pointing higher level of market concentration. While path b (M → Y), LHHI negatively impact on the ROA i.e., β = -0.705, p-value = 0.109). The mediator role of LHHI between BSTA and ROA shows indirect only mediation effects. Hence, a

larger bank size would reduce market competition, reducing the operational performance (ROA) (e.g., BSTA LHHI ROA). Finally, direct effect path c (X → Y) bank size does impact the operational performance (ROA), i.e., β = 0.247, p-value = 0.405 which is not statistically significant at any level. A decision tree for the typology of mediation is discussed in Appendix Figure B1.12.

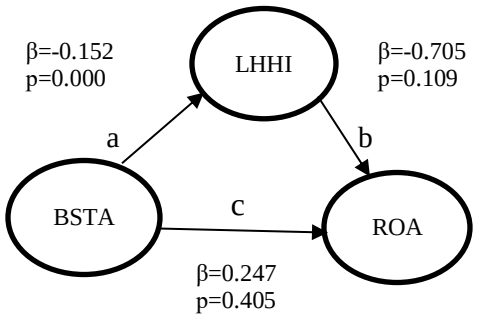

Figure 5.3: Indirect only mediation effects

5.3 Part -A: Market Structure Based on the Measurement of the Herfindahl-Hirschman Index (HHI)

This section represents the market structure based on the measurement of LHHI. Statistically significant values (the structural model) of the mediation results for operational performances (ROA) are reported as shown in Table 5.1. In contrast, Table 5.2 displays mediation test (i.e., Bootstrap t-test) results for ROA while Table 5.3 shows the summary of findings. On the other hand, Table 5.4 shows bank stability (Zscore) while the mediation test (i.e., Bootstrap t-test) is displayed at Table 5.5 while Table 5.6 implies summary of the finding of stability. The results are reported based on the pooled samples, Islamic banks samples and conventional banks samples. Several models fit criteria such as $\square^{\wedge}2$, RMSEA, CFI, and SRMR are used as suggested by (Kline 2015) and (Hooper, Coughlan, & Mullen,

2008). All criteria show that all the models are a good fit (see Table 5.9). Moreover, a detailed summary of mediation results (e.g., partial mediation[3], competitive, complementary, and full mediation[4], indirect only mediation) based on LHHI for operational performance (ROA, ROE & NIM) and bank stability (Zscore) are reported as per Appendix of Table A2.1 to Table A2.4 respectively.

Notably, operational performance based on the measurement of return on assets (ROA) is discussed while return on equity (ROE) and net interest margin (NIM) are reported in the Appendix Table B1.1 and Table B1.2 to avoid repetition of results since the results of ROE & NIM are consistent with the results of ROA.

The flow of the study starts with the discussion of R-sq of pooled samples, Islamic and conventional banks for pre-M&As and post M&As. Then followed by the identified variables how those variables mediate (i.e., direct, indirect, partial and full mediation effect). Then accordingly, discuss which the variables which strongly mediate by looking at the Bootstrap t-test is also discussed. Finally, a summary of the findings is given.

5.3.1 Mediation (LHHI) effects in between M&As and Operational Performance (ROA)

Table 5.1 presents the mediation effects of LHHI on the relationship between M&As and operational performance (ROA) for pooled samples, Islamic banks, and conventional banks. Based on the findings, it is observed that LHHI mediates (i.e., partial mediation;

[3] Partial mediation consists of complementary mediation (i.e., path a x b and path c are statistically significant, and the signs are pointing in the same direction) while competitive mediation (i.e., path a x b and path c are statistically significant, and the signs are pointing to opposite direction).

[4] Full mediation implies only indirect path (a x b) are statistically significant while path c do not show any statistically significant.

complementary & competitive and full mediation; indirect only) the relationship of M&As and operational performance (ROA).

R-sq (LHHI & ROA) of the pooled sample is 0.566 & 0.210 (pre-M&As). R-sq is the variance of the LHHI and ROA that can be explained by the explanatory variables. Bank size (BSTA & BSTD) show indirect only mediation, whereas intermediary roles (financial and non-financial) and control variables, namely bank-specific variables (LIDY, CR & CAP) do not show any mediation effects. In contrast, GDP & INF show mediation effects. This means GDP shows complementary mediation, whereas inflation implies competitive mediation of LHHI on the relationship of M&As and operational performance (ROA). These mediation relationships are shown in the diagram as per Appendix Figure B1.1.

While in the post M&As scenario, R-sq LHHI & ROA of the pooled sample is 0.558 & 0.733 respectively. Those imply that the explanatory variables can explain the variance of LHHI & ROA. Bank size (BSTD & BSOI) shows complementary mediation effects, whereas for the intermediary role namely financial show mediation effect while the non-financial intermediary role does not offer any mediation effect. Economies of scale (Escale) show indirect only mediation effects, while economies of scope (Escope) posit complementary mediation effects. ControI variables, namely bank-specific variables, liquidity (LIDY), credit risk (CR) and capitalization (CAP), and macroeconomic variables, namely gross domestic products (GDP) and inflation (INF), are statistically mediation effects. Meaning that liquidity and inflation show indirect only mediation, while CR and GDP show complementary mediation effects. At the same time, CAP implies competitive mediation effects of LHHI on the relationship of M&As and operational performance

(ROA). These mediation relationships are shown in the diagram as per Appendix Figure B1.2.

In pre-M&As, market structure (LHHI) does not show any significant impact on 1the relationship of M&As and operational performance (ROA) for Islamic and conventional banks and hance the results are left undiscussed.

In post M&As, R-sq (LHHI) and ROA of Islamic and conventional banks are 0.334 & 0.413 and 0.770 & 0.857 respectively. Comparatively, R-sq of LHHI and ROA of conventional are greater than Islamic banks. Therefore, it can be concluded that conventional banks' model is more fit than Islamic banks. R-sq implies variance of the LHHI and ROA that is explained by the explanatory variables.

Bank size (BSOI) of Islamic banks shows complementary mediation effects. In contrast, other measurement of banks size (BSTA and BSTD) implies complementary mediation while bank size (BSOI) shows indirect only mediation effects. Intermediary roles (financial and non-financial) of Islamic banks do not show any mediation effects. Surprisingly, the Intermediary roles (financial and non-financial) of conventional banks imply mediation effects. More specially, the financial intermediary role such as economies of scale (Escale) and economies of scope (Escope) and the non-financial intermediary role such as the non-interest expense to non-interest income (NFIR) show complementary mediation effects.

Control variables of Islamic and conventional banks also show mediation effects. Credit risk shows indirect only mediation effects, while capitalisation and inflation show complementary mediation effects, and GDP shows competitive mediation effects of LHHI on the relationship of M&As and operational performance (ROA). On the other hand,

control variables of the conventional banks also show the same effects. Liquidity (LIDY) shows competitive mediation effects, credit risk (CR) and GDP show complementary mediation effects while capitalization (CAP) implies indirect mediation effects of LHHI on the relationship of M&As and operational performance (ROA). Therefore, it could be concluded that most of the variables of the conventional banks show mediation effects (partial and full) compared to Islamic banks. These mediation relationships are shown in the diagram as per Appendix Figure B1.3 (Islamic banks) and Figure B1.5 (Conventional banks).

Table 5.1: Statistically Significant Values (The Structural Model) of Operational Performance (ROA) for Pooled, Islamic, and Conventional Banks

		Pooled				Islamic bank				Conventional bank			
		Pre M&A		Post M&A		Pre M&A		Post M&A		Pre M&A		Post M&A	
Panel-A	**(X on M)**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
BSTA	→ market structure (LHHI)	-0.152	0.000	-0.098	0.326	0.014	0.282	0.005	0.834	0.620	0.129	1.103	0.000
BSTD	→ market structure (LHHI)	0.074	0.009	0.155	0.088	-0.029	0.005	-0.03	0.117	-0.627	0.119	-0.838	0.000
BSOI	→ market structure (LHHI)	0.049	0.120	-0.120	0.001	0.012	0.152	-0.01	0.050	0.017	0.813	-0.161	0.007
Escale	→ market structure (LHHI)	0.000	0.196	-0.003	0.017	0.000	0.569	0.000	0.348	0.000	0.508	0.005	0.000
Escope	→ market structure (LHHI)	0.000	0.929	-0.003	0.000	0.000	0.683	0.000	0.541	0.012	0.021	0.009	0.000
NFIR	→ market structure (LHHI)	0.000	0.884	-0.001	0.185	0.000	0.996	0.000	0.966	0.000	0.726	0.001	0.000
LIDY	→ market structure (LHHI)	0.000	0.795	-0.002	0.000	0.000	0.233	0.000	0.447	0.000	0.494	-0.001	0.027
CR	→ market structure (LHHI)	0.006	0.137	-0.026	0.004	0.001	0.156	-0.01	0.083	-0.026	0.745	-0.030	0.000
CAP	→ market structure (LHHI)	0.001	0.457	0.022	0.000	0.003	0.001	0.001	0.001	0.013	0.002	0.020	0.000
GDP	→ market structure (LHHI)	0.812	0.000	0.043	0.007	-0.333	0.000	-0.07	0.000	1.416	0.000	-0.078	0.000
INF	→ market structure (LHHI)	-0.01	0.003	-0.143	0.000	0.008	0.096	0.054	0.000	-0.003	0.745	-0.028	0.158
Panel-B	**(M on Y)**												
LHHI	→ operational performance(ROA)	-0.705	0.109	-1.589	0.000	0.105	0.973	1.230	0.000	1.904	0.418	-0.268	0.004
Panel-C	**(X on Y)**												
BSTA	→ operational performance(ROA)	0.247	0.405	0.309	0.365	0.007	0.986	-0.26	0.213	1.575	0.584	-2.377	0.003
BSTD	→ operational performance ROA)	-0.159	0.478	-0.628	0.067	0.060	0.752	0.268	0.171	-2.082	0.476	2.009	0.015
BSOI	→ operational performance(ROA)	-0.148	0.638	0.300	0.009	-0.132	0.714	0.107	0.063	0.674	0.192	-0.001	0.997
Escale	→ operational performance(ROA)	-0.012	0.000	-0.006	0.144	-0.012	0.001	-0.01	0.000	-0.006	0.058	-0.028	0.000
Escope	→ operational performance(ROA)	-0.01	0.444	0.011	0.000	-0.004	0.483	0.001	0.265	-0.663	0.621	-0.010	0.006
NFIR	→ operational performance(ROA)	0.000	0.989	0.002	0.145	0.000	0.869	0.000	0.050	0.000	0.894	-0.004	0.000
LIDY	→ operational performance(ROA)	0.000	0.829	0.000	0.572	0.003	0.521	0.001	0.323	0.001	0.823	-0.004	0.008
CR	→ operational performance(ROA)	0.007	0.821	0.066	0.009	0.009	0.785	0.017	0.689	0.374	0.593	0.098	0.000
CAP	→ operational performance(ROA)	0.005	0.720	0.025	0.086	-0.001	0.937	0.040	0.001	0.012	0.613	0.009	0.617
GDP	→ operational performance(ROA)	-1.28	0.016	-0.118	0.014	2.781	0.003	0.155	0.011	0.216	0.669	0.077	0.075
INF	→ operational performance(ROA)	-0.13	0.046	0.055	0.226	0.003	0.982	0.172	0.110	-0.025	0.527	-0.148	0.029
R-sq (LHHI)		0.566		0.558		0.392		0.334		0.976		0.770	
R-sq (ROA)		0.210		0.733		0.187		0.413		0.706		0.857	

NOTES: Panel -A represents the impact of X on M, Panel-B states the impact of M on Y and Panel C implies X on Y respectively. Pooled samples pre 207 & post 213, Islamic bank sample pre 136, post 194 and conventional bank samples pre 171 & post 149.

5.3.2 Mediation Test Analysis Results of Operational Performance (ROA)

Table 5.2 shows the mediation test (Bootstrap t-test) analysis results of LHHI between M&As and operational performance (ROA) for pooled, Islamic and conventional banks. The results suggest certain specific factors have a strong mediation effect in the pooled, Islamic and conventional banks samples. Accordingly, in pooled samples and pre-M&As scenario, bank size (total assets), financial intermediary role (economies of scope), control variables namely GDP and inflation show strong mediation effects as the Bootstrap t-test is statistically significant. In post M&As scenario, bank size (total deposits), financial intermediary roles (economies of scale and economies of scope), control variables, namely liquidity, capitalization and inflation, show strong mediation effects.

For the Islamic and conventional banks samples, in the pre-M&As scenario, market structure (LHHI) does not show any mediation effects on the relationship between M&As, and operational performance (ROA) and hence the results of Bootstrap t-test do not show any significance among the variables. In the post M&As scenario, market structure affects the relationship of M&As and operational performance in post M&As for Islamic and conventional banks. Generally, the effects of the market structure can be seen in post M&As scenario that already found in the results. Few variables of Islamic banks show strong mediation effects, which are comparatively lower than conventional banks. Bank size (BSOI), financial intermediary role (Escale) and control variables namely capitalization and GDP show strong mediation effects. On the contrary, in the case of conventional banks, bank size (BSTA & BSTD), financial intermediary role (Escale), non-financial intermediary role (NFIR), control variables namely capitalization and inflation, show strong mediation effects since the Bootstrap t-test results are statistically significant.

Table 5.2: Mediation Test Analysis Results of Operational Performance (ROA)

	Pooled				Islamic Banks				Conventional banks			
	Pre M&A		Post M&A		Pre M&A		post M&A		pre M&A		post M&A	
	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role
BSTA → LHHI → ROA	2.50	support	0.720	not support	0.010	not support	-1.300	not support	0.160	not support	-1.710	support
BSTD → LHHI → ROA	-0.500	not support	-1.800	support	0.270	not support	1.460	not support	-0.340	not support	1.580	support
BSOI → LHHI → ROA	-0.390	not support	1.360	not support	-0.490	not support	2.640	support	1.230	not support	-0.190	not support
Escale → LHHI → ROA	-5.400	support	-3.070	support	-3.000	support	-3.040	support	-1.160	not support	-4.170	support
Escope → LHHI → ROA	-0.610	not support	2.310	support	-0.670	not support	1.440	not support	-1.970	support	-1.520	not support
NFIR → LHHI → ROA	0.070	not support	0.450	not support	0.300	not support	1.220	not support	-0.020	not support	-2.410	support
LIDY → LHHI → ROA	0.290	not support	-2.750	support	0.730	not support	1.150	not support	0.460	not support	-2.480	support
CR → LHHI → ROA	0.410	not support	0.950	not support	0.260	not support	0.620	not support	1.030	not support	4.070	support
CAP → LHHI → ROA	0.410	not support	3.990	support	-0.080	not support	3.400	support	-0.270	not support	0.570	not support
GDP → LHHI → ROA	2.560	support	-1.260	not support	1.260	not support	3.520	support	-0.720	not support	1.160	not support
INF → LHHI → ROA	1.900	support	-2.270	support	0.020	not support	0.850	not support	-0.370	not support	-1.780	support

NOTES: *,**,*** statistically significant at 10%, 5% and 1%. Hair et al. (2013) recommends for the t-value 1.96, $p<0.05$ for the mediation effects, thus, this study will be selecting the one with a high confidence level ($\alpha=0.05$ or 0.01). The null hypothesis will be rejected if the t-value exceeds 1.96 (at $p<0.05$), i.e., there is no mediating/indirect effect between the determinants of M&As and bank's operational performance (ROA).

5.3.2.1 Summary of the Findings

Table 5.3 implies the summary of findings for operational performance for pooled samples, Islamic banks and conventional banks. Interestingly, in pre-M&As scenario, market structure (LHHI) does not show any mediation effects on the relationship between M&As and operational performance (ROA) of Islamic and conventional banks. On the other hand, in the post M&As scenario, market structure significantly impacts the operational performance of Islamic and conventional banks.

In pooled samples, bank size shows complementary mediation effects. Intermediary role (financial), namely economies of scale, posit indirect mediation while economies of scope show complementary mediation effects. Accordingly, control variables namely bank-specific and macroeconomics, also have significant mediation effects.

While for the Islamic and conventional banks sample, bank size shows complementary mediation effects for Islamic and conventional banks. Intermediary roles (financial & non-financial) do not give any mediation effects for Islamic banks, while it (intermediary roles) does show complementary mediation effects for conventional banks.

Control variables namely bank-specific variables (liquidity, credit risk and capitalization) and macroeconomic variables (GDP & inflation) show significant impact (complementary, competitive & indirect only mediation effects) on operational performance. The results support research hypothesis 7; the mediation role of market structure (LHHI) has a significant impact on the relationship between M&As and operational performance for Islamic and conventional banks.

Table 5.3: Summary of Findings of Operational Performance for Pooled, Islamic and Conventional Banks in Pre and Post M&As

Path Coefficient	Pre M&As pooled	Post M&As pooled	Pre M&As IB	Pre M&As CB	Post M&As IB	Post M&As CB
	Mediating Role	**Mediating Role**	**Mediating Role**	**Mediating Role**	**Mediating Role**	**Mediating Role**
BSTA → LHHI → ROA	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	Complementary mediation
BSTD → LHHI → ROA	Indirect only mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	Complementary mediation
BSOI → LHHI → ROA	No- effect non-mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	Complementary mediation	Indirect only mediation
Escale → LHHI → ROA	Direct only no mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	Direct only no mediation	Complementary mediation
Escope → LHHI → ROA	No- effect non-mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	Complementary mediation
NFIR → LHHI → ROA	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	Direct only no mediation	Complementary mediation
LIDY → LHHI → ROA	No- effect non-mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	Competitive mediation
CR → LHHI → ROA	No- effect non-mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	Complementary mediation
CAP → LHHI → ROA	No- effect non-mediation	Competitive mediation	No- effect non-mediation	No- effect non-mediation	Complementary mediation	Indirect only mediation
GDP → LHHI → ROA	Complementary mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	Competitive mediation	Complementary mediation
INF → LHHI → ROA	Competitive mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	Complementary mediation	Direct only no mediation

5.3.3 Mediation (LHHI) effects in between M&As and Bank Stability (Zscore)

Table 5.4 displays the mediation effects of LHHI on the relationship between M&As and bank stability (Zscore) for pooled samples, Islamic banks, and conventional banks. Based on the findings, it is observed that LHHI mediates (i.e., partial mediation; complementary & competitive and full mediation; indirect only) the relationship of M&As and bank stability (Zscore).

With the pooled sample, in pre-M&As, market structure (LHHI) does not show mediation effects on the relationship between M&As and Zscore.

In post M&As, the R-sq of LHHI & Zscore is 0.562 & 0.762 respectively. Bank size (BSTD) shows indirect only mediation while BSOI shows complementary mediation effects. Financial intermediary roles (Escale & Escope) show complementary mediation effects.

Control variables namely liquidity & GDP show competitive mediation effects, credit risk & capitalization imply complementary mediating effects. In contrast, inflation shows indirect only mediation effects of LHHI on the relationship between M&As and bank stability (Zscore). These mediation relationships are shown in the diagram as per Appendix Figure B1.1.

Besides that, for Islamic samples, in pre-M&As, it is found that market structure (LHHI) does not mediate effects, hence the results are left undiscussed.

In post M&As, R-sq of LHHI & ROA is 0.334 & 0.879 respectively. The posits that the explanatory variables explain the variance of LHHI & ROA. Bank size (BSTA & BSTD) show competitive mediation effects bank size be (BSOI) suggest the direct only mediation. Intermediary role (financial and non-financial) does not have any mediation

effects. Control variables namely credit risk and GDP imply competitive mediation effects while Inflation shows complementary mediation effects. These mediation relationships are shown in the diagram as per Appendix Figure B1.2.

With the presence of conventional banks samples, in pre-M&As, market structure (LHHI) does not mediation and hance the results are left undiscussed. Therefore, it seems that in pre-M&As of Islamic and conventional banks, market structure (LHHI) does not mediate the relationship between M&As and bank stability.

In post-M&As, R-sq of LHHI & Zscore is 0.770 & 0.947, respectively, which means that the explanatory variables explain the variance of LHHI & ROA. Comparatively, the R-sq of LHHI and Zscore of post-M&As of conventional banks are more incredible than Islamic banks. These further imply that the higher the value of R-sq, the better the model fit.

Bank size (BSTA, BSTD & BSOI) demonstrate indirect only mediation. Intermediary roles, namely economies of scale (Escale) and non-financial intermediary roles (NFIR), imply indirect mediation effects, while economies of scope (Escope) indicates complementary mediation effects.

Control variables namely liquidity and capitalization show competitive mediation effects, while credit risk shows indirect only mediation effects and GDP implies complementary mediation effects of LHHI on the relationship between M&As and bank stability (Zscore). Surprisingly, all variables except inflation show mediation effects (partial and full), and they are significantly more significant than Islamic banks. These mediation relationships are shown in the diagram as per Appendix Figure B1.2.

Table 5.4: Statistically Significant Value (The Structural Model) of Bank Stability (Zscore) for the Pooled, Islamic, and Conventional Banks

		Pooled				Islamic bank				Conventional bank			
		Pre M&A		Post M&A		Pre M&A		Post M&A		Pre M&A		Post M&A	
Panel-A	**(X on M)**	**Coef.**	***p***	**Coef.**	***p***	**Coef.**	***p***	**Coef.**	***p***	**Coef.**	***p***	**Coef.**	***p***
BSTA	→ market structure(LHHI)	-0.152	0.000	-0.098	0.323	0.014	0.139	0.005	0.097	0.620	0.139	1.103	0.000
BSTD	→ market structure(LHHI)	0.074	0.013	0.155	0.104	-0.029	0.003	-0.027	0.103	-0.627	0.139	-0.838	0.000
BSOI	→ market structure(LHHI)	0.049	0.105	-0.120	0.000	0.012	0.110	-0.012	0.027	0.017	0.787	-0.161	0.000
Escale	→ market structure(LHHI)	0.000	0.170	-0.003	0.004	0.000	0.444	0.000	0.342	0.000	0.502	0.005	0.000
Escope	→ market structure(LHHI)	0.000	0.893	-0.003	0.000	0.000	0.608	0.000	0.368	0.012	0.927	0.009	0.000
NFIR	→ market structure(LHHI)	0.000	0.781	-0.001	0.142	0.000	0.996	0.000	0.979	0.000	0.731	0.001	0.000
LIDY	→ market structure(LHHI)	0.000	0.781	-0.002	0.003	0.000	0.187	0.000	0.490	0.000	0.453	-0.001	0.011
CR	→ market structure(LHHI)	0.006	0.070	-0.026	0.006	0.001	0.024	-0.007	0.011	-0.026	0.731	-0.030	0.000
CAP	→ market structure(LHHI)	0.001	0.419	0.022	0.000	0.003	0.000	0.001	0.224	0.013	0.001	0.020	0.000
GDP	→ market structure(LHHI)	0.812	0.000	0.043	0.000	-0.333	0.000	-0.075	0.000	1.416	0.000	-0.078	0.000
INF	→ market structure(LHHI)	-0.009	0.409	-0.143	0.000	0.008	0.078	0.054	0.000	-0.003	0.749	-0.028	0.143
Panel-B	**(M on Y)**												
LHHI	→ Bank Stability(Zscore)	4.295	0.051	1.216	0.030	19.147	0.054	-4.527	0.003	3.932	0.345	1.559	0.003
Panel-C	**(X on Y)**												
BSTA	→ Bank Stability(Zscore)	6.155	0.016	4.726	0.038	3.647	0.198	15.546	0.002	3.252	0.398	11.951	0.144
BSTD	→ Bank Stability(Zscore)	-4.754	0.043	-1.168	0.567	-2.675	0.274	-13.48	0.001	-4.299	0.263	-6.490	0.407
BSOI	→ Bank Stability(Zscore)	2.860	0.050	-1.311	0.015	3.760	0.015	-0.837	0.479	1.392	0.210	-2.787	0.124
Escale	→ Bank Stability(Zscore)	-0.103	0.001	-0.072	0.004	-0.127	0.019	-0.163	0.000	-0.012	0.194	0.005	0.906
Escope	→ Bank Stability(Zscore)	-0.031	0.222	-0.096	0.000	-0.019	0.489	0.005	0.405	-1.369	0.583	-0.095	0.007
NFIR	→ Bank Stability(Zscore)	-0.002	0.599	0.005	0.698	-0.001	0.902	-0.005	0.346	0.000	0.926	0.014	0.184
LIDY	→ Bank Stability(Zscore)	0.007	0.901	0.043	0.001	0.021	0.722	0.020	0.208	0.002	0.739	0.039	0.007
CR	→ Bank Stability(Zscore)	0.188	0.523	-0.440	0.003	0.129	0.696	-1.491	0.001	0.771	0.498	-0.174	0.397
CAP	→ Bank Stability(Zscore)	0.965	0.000	0.879	0.000	0.903	0.000	1.270	0.000	2.091	0.000	1.200	0.000
GDP	→ Bank Stability(Zscore)	-15.113	0.016	-0.612	0.003	-12.292	0.154	-2.260	0.085	0.446	0.697	-0.699	0.093
INF	→ Bank Stability(Zscore)	1.144	0.217	0.129	0.834	-1.825	0.357	-3.675	0.054	-0.052	0.528	0.984	0.111
R-sq (LHHI)		0.566		0.562		0.392		0.334		0.976		0.770	
R-sq (Z-score)		0.762		0.762		0.803		0.879		0.996		0.947	

NOTES: Panel -A represents the impact of X on M, Panel-B states the impact of M on Y and Panel C implies X on Y respectively. Pooled samples pre 207 & post 213, Islamic bank samples pre-136, post 194 and conventional bank samples pre 171 & post 149.

5.3.4 Analysis of Mediation Test Results of Bank Stability (Zscore)

Table 5.5 shows the mediation test (Bootstrap t-test) analysis results of LHHI between M&As and bank stability (Zscore) for pooled, Islamic and conventional banks. The results suggest that certain factors have a strong mediation effect in the pooled, Islamic banks and conventional banks samples.

Accordingly, in pooled samples and pre-M&As scenario, market structure (LHHI) does not show mediation effects and hence the results are left undiscussed. While, in post M&As scenario, bank size (total assets & operating income), financial intermediary role (economies of scale and economies of scope), control variables namely liquidity, capitalization, and credit risk along with the macro-economic variable; GDP show strong mediation effects as Bootstrap t-test is statistically significant.

With the Islamic and conventional banks samples, in the pre-M&As scenario, market structure (LHHI) does not show any mediation effects on the relationship between M&As and bank stability (Zscore). Hence, the results of Bootstrapping t-test do not show any significance among the variables.

In the post M&As scenario, bank size (total assets & total deposits), financial intermediary role (economies of scale) and control variables namely capitalization, GDP and inflation show strong mediation effects.

On the contrary, in the case of conventional banks, few variables show strong mediation effects. For example, bank size does not show any strong mediation effects, however, financial intermediary role (economies of scope), control variables namely liquidity and capitalization show strong mediation effects since Bootstrap t-test are statistically significant.

Table 5.5: Mediation Test Analysis Results of Bank Stability (Zscore)

	Pooled				Islamic Banks				Conventional banks			
	Pre M&A		post M&A		Pre M&A		Post M&A		Pre M&A		Post M&A	
	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role
BSTA → LHHI → Zscore	2.740	support	2.510	support	1.360	not support	3.610	support	0.180	not support	1.510	not support
BSTD → LHHI → Zscore	-2.570	support	-0.720	not support	-0.980	not support	-3.550	support	-0.370	not support	-0.870	not support
BSOI → LHHI → Zscore	1.710	support	-2.150	support	2.550	support	-0.790	not support	1.290	not support	-1.460	not support
Escale → LHHI → Zscore	-2.850	support	-2.800	support	-1.980	not support	-5.160	support	-1.480	not support	-0.040	not support
Escope → LHHI → Zscore	-0.770	not support	-5.040	support	-0.660	not support	0.800	not support	-1.300	not support	-2.700	support
NFIR → LHHI → Zscore	-0.560	not support	0.430	not support	-0.200	not support	-0.970	not support	-0.030	not support	0.820	not support
LIDY → LHHI → Zscore	0.140	not support	2.660	support	0.260	not support	1.250	not support	0.430	not support	2.740	support
CR → LHHI → Zscore	0.480	not support	-3.350	support	0.290	not support	-3.120	not support	0.970	not support	-1.070	not support
CAP → LHHI → Zscore	4.980	support	6.300	support	3.000	support	6.880	support	31.800	support	5.430	support
GDP → LHHI → Zscore	-2.510	support	-2.160	support	-0.570	not support	-2.470	support	-1.030	not support	-1.330	not support
INF → LHHI → Zscore	1.420	not support	0.430	not support	-1.200	not support	-1.600	support	-0.530	not support	1.230	not support

NOTES: *,**,*** statistically significant at 10%, 5% and 1%. Hair et al. (2013) recommends for the t-value 1.96, $p<0.05$ for the mediation effects, thus, this study will be selecting the one with a high confidence level (α=0.05 or 0.01). The null hypothesis will be rejected if the t-value exceeds 1.96 (at $p<0.05$), i.e., there is no mediating/indirect effect between the determinants of M&As and bank's stability (Zscore).

5.3.4.1 Summary of the Findings

In the pre-M&As scenario, the market structure (LHHI) does not show mediation effects on bank stability. While in the post M&As scenario, it does (LHHI) shows significant mediation effects (indirect, complementary and competitive mediation effects). Bank size implies competitive mediation effects that is further supported by Bootstrap t-test. At the same time, although it shows indirect mediation effects for conventional bank but does not support by Bootstrapping t-test. Intermediary roles do not show any mediation effects for Islamic banks. Comparatively, the financial intermediary role (economies of scope) posits complementary mediation effects that is further supported by the Bootstrapping t-test.

Control variables namely bank-specific variables (liquidity, credit risk and capitalization) and macro-economic variables (GDP & inflation) show significant impact (complementary, competitive & indirect only mediation effects) on bank stability. The results support research hypothesis 7; the mediation role of market structure (LHHI) has a significant impact on the relationship between M&As and stability for Islamic and conventional banks.

Table 5.6: Summary of Findings for Bank Stability in Pre and Post M&As

Path Coefficient	Pre M&As pooled	Post M&As pooled	Pre M&As IB	Post M&As IB	Pre M&As CB	Post M&As CB
	Mediating Role	**Mediating Role**	**Mediating Role**	**Mediating Role**	**Mediating Role**	**Mediating Role**
BSTA → LHHI → Zscore	Competitive mediation	Direct only no mediation	No- effects non-mediation	Competitive mediation	No- effects non-mediation	Indirect only mediation
BSTD → LHHI → Zscore	Competitive mediation	Indirect only mediation	Indirect only mediation	Competitive mediation	No- effects non-mediation	Indirect only mediation
BSOI → LHHI → Z-score	Complementary mediation	Complementary mediation	Direct only no mediation	Indirect only mediation	No- effects non-mediation	Indirect only mediation
Escale → LHHI → Zscore	Direct only no mediation	Complementary mediation	Direct only no mediation	Direct only no mediation	No- effects non-mediation	Indirect only mediation
Escope → LHHI → Zscore	No- effects non-mediation	Complementary mediation	No- effects non-mediation	No- effects non-mediation	No- effects non-mediation	Complementary mediation
NFIR → LHHI → Z-score	No- effects non-mediation	No- effects non-mediation	No- effects non-mediation	No- effects non-mediation	No- effects non-mediation	Indirect only mediation
LIDY → LHHI → Zscore	No- effects non-mediation	Competitive mediation	No- effects non-mediation	No- effects non-mediation	No- effects non-mediation	Competitive mediation
CR → LHHI → Z-score	Indirect only mediation	Complementary mediation	Indirect only mediation	Competitive mediation	No- effects non-mediation	Indirect only mediation
CAP → LHHI → Z-score	Direct only no mediation	Complementary mediation	Complementary mediation	Direct only no mediation	No- effects non-mediation	Competitive mediation
GDP → LHHI → Z-score	Competitive mediation	Competitive mediation	Indirect only mediation	Competitive mediation	No- effects non-mediation	Complementary mediation
INF → LHHI → Z-score	No- effects non-mediation	Indirect only mediation	Indirect only mediation	Complementary mediation	No- effects non-mediation	No- effects non-mediation

5.4 Part -B: Market Structure Based on the Measurement of Concentration Ratio (CR3)

This section represents the market structure based on the measurement of CR3. Statistically significant values (the structural model) of the mediation results for operational performances (ROA) are as per Table 5.7, the Bootstrap t-test result is reported in Table 5.8, and summary of the findings is reported in Table 5.9. On the other hand, Table 5.10 implies bank stability for pre and post M&As, Table 5.11 implies Bootstrap t-test while Table 5.12 is the summary of the findings of stability for pooled samples, Islamic and conventional banks. Several models fit criteria namely $\square^{\wedge 2}$, RMSEA, CFI, and SRMR are used as suggested by Kline (2015) and Hooper et al. (2008). All criteria show that all the models are well fit (see Table 5.9).

Operational performance based on the measurement of return on assets (ROA) is discussed while return on equity (ROE) and net interest margin (NIM) are reported in Appendix Table B1.14 and Table B1.15. this is to avoid repetition of results since the results if ROA & NIM are consistent with the results of ROA. The mediation effects of CR3 are used (e.g., partial mediation effects i.e., complementary, competitive and full mediation effects i.e., indirect only mediation) to explain the relationship between M&As and banking sectors and these are shown in several diagrams namely a framework of mediation analysis results for pooled samples, Islamic banks and conventional banks. These are reported as per Appendix Figure B1.6, Figure B1.8 and Figure B1.10 respectively.

5.4.1 Mediation (CR3) Effects in between M&As and Operational Performance (ROA)

Table 5.7 outlines the mediation effects of concentration ratio (CR3) on the relationship between M&As and operational performance (ROA) for pooled samples, Islamic and conventional banks. Based on the estimation results, CR3 mediates the relationship between M&As and operational performance (ROA).

R-sq (CR3 & ROA) of the pooled sample is 0.533 & 0.220 (pre-M&As). R-sq implies variance of the CR3 and ROA that is explained by the explanatory variables. R-sq implies variance of the CR3 and ROA that is explained by the explanatory variables. Bank size (total assets, total deposits & operating income) show indirect only mediation, but intermediary roles (financial and non-financial) do not show any mediation impact, control variables, namely bank-specific variables (LIDY, CR & CAP) also do not show any mediation impact. At the same time, GDP implies mediation effect, which means that GDP shows competitive mediation of CR3 on the relationship of M&As and operational performance (ROA). These mediation relationships are shown in the diagram as per Appendix Figure B1.6, Figure B1.8 and Figure B1.10 respectively.

While in post M&As, R-sq (CR3 & ROA) of the pooled sample is 0.558 & 0.733. Those imply that the explanatory variables explain the variance of CR3 & ROA. Bank size (total deposits & operating income) shows complementary mediation effects, and intermediary role specially financial show mediation effect while the non-financial intermediary role does not show any mediation effect. Economies of scope show competitive mediation effects. Control variables, namely bank-specific variables, liquidity and credit risk, and macroeconomic variables, namely GDP and inflation, are statistically

mediation effects. Meaning that liquidity and inflation show indirect mediation, whereas CR and GDP show complementary mediation effects. At the same time, capitalization implies competitive mediation effects of CR3 on the relationship of M&As and operational performance (ROA). These mediation relationships are shown in the diagram as per Appendix Figure B1.7, Figure B1.9 and Figure B1.11, respectively.

In pre-M&As, market structure (CR3) does not show any significant impact on the relationship of M&As and operational performance (ROA) for Islamic, however it is found to be statistically significant for conventional banks. Looking at the findings, the R-sq of CR3 & ROA is 0.990 and 0.718, respectively. This implies that the explanatory variables explain the variance of CR3 and ROA. Bank size (operating income) shows indirect mediation effects while intermediary roles (financial and non-financial) do not have any mediation effects. On the other hand, control variables, namely liquidity, capitalization, GDP and inflation, show mediation of CR3 on the relationship between M&As and operational performance (ROA).

In post M&As, R-sq (CR3 and ROA) of Islamic is 0.304 & 0.423 and for conventional banks is 0.649 & 0.860 respectively. Comparatively, R-sq of CR3 and ROA of conventional are greater than Islamic banks. Therefore, it can be concluded that conventional banks' model is more fit than Islamic banks. R-sq implies variance of the CR3 and ROA that is explained by the explanatory variables.

Islamic banks' bank size (total assets & total deposits) show indirect only mediation effects while banks size (operating income) implies competitive mediation. In contrast, conventional banks' bank size (total assets & total deposits) shows indirect only mediation effects. Intermediary roles (financial), namely economies of scale, imply competitive and

economies of scope show indirect mediation effects for Islamic banks. The coefficient and p-value for the non-financial intermediary role do not show any mediation effects. Likewise, the Intermediary roles (financial and non-financial) of conventional banks imply mediation effects. More specially, financial intermediary roles such as economies of scale and economies of scope and the non-financial intermediary roles such as the non-interest expense to non-interest income show complementary mediation effects.

Accordingly, control variables of Islamic and conventional banks also show mediation effects of CR3 in the relationship between M&As and operational performance. Looking at liquidity & credit risk both show indirect only mediation effects, while capitalisation and inflation show complementary mediation effects and GDP shows competitive mediation effects of CR3 on the relationship of M&As and operational performance (ROA). On the other hand, control variables of the conventional banks also show the same results. Liquidity shows competitive mediation effects, credit risk and GDP show complementary mediation effects, while capitalization implies indirect mediation effects of CR3 on the relationship of M&As and operational performance (ROA). The findings are summarized in Table 5.9. Based on the findings, it is observed that mediation effects of CR3 is inconsistent with the mediation effects of LHHI. These mediation relationships are shown in the diagram as per Appendix Figure B1.7, Figure B1.9, and Figure B1.11.

Table 5.7: Statistically Significant Value (The Structural Model) of Operational Performance (ROA) for the Pooled, Islamic, and Conventional Banks

		Pooled				Islamic bank				Conventional bank			
		Pre M&A		Post M&A		Pre M&A		Post M&A		Pre M&A		Post M&A	
Panel-A	**(X on M)**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
BSTA	→ market structure (CR3)	-0.08	0.000	-0.120	0.114	0.004	0.751	-0.039	0.032	0.051	0.762	-0.538	0.007
BSTD	→ market structure (CR3)	0.033	0.024	0.124	0.053	-0.022	0.056	0.025	0.084	0.008	0.967	0.668	0.001
BSOI	→ market structure (CR3)	0.035	0.013	-0.043	0.087	0.017	0.055	-0.010	0.001	-0.078	0.002	-0.067	0.130
Escale	→ market structure (CR3)	0.000	0.606	0.001	0.138	0.000	0.407	0.000	0.021	0.000	0.696	0.007	0.000
Escope	→ market structure (CR3)	0.000	0.819	-0.002	0.000	0.000	0.804	0.000	0.100	-0.017	0.619	0.004	0.000
NFIR	→ market structure (CR3)	0.000	0.941	0.000	0.582	0.000	0.847	0.000	0.755	0.000	0.576	0.001	0.003
LIDY	→ market structure (CR3)	0.000	0.291	-0.002	0.000	0.000	0.135	0.000	0.003	0.000	0.041	-0.001	0.002
CR	→ market structure (CR3)	0.001	0.458	-0.025	0.000	-0.001	0.068	-0.015	0.000	-0.005	0.796	-0.015	0.000
CAP	→ market structure (CR3)	0.000	0.701	0.003	0.181	0.002	0.006	0.001	0.028	-0.005	0.000	0.011	0.001
GDP	→ market structure (CR3)	0.420	0.000	0.012	0.161	-0.110	0.004	-0.039	0.000	0.529	0.000	-0.049	0.000
INF	→ market structure (CR3)	0.001	0.802	-0.068	0.000	0.015	0.005	0.023	0.000	-0.004	0.093	0.018	0.212
Panel-B	**(M on Y)**												
CR3	→ operational performance(ROA)	-2.62	0.014	-1.970	0.000	-3.969	0.383	2.305	0.000	-7.324	0.062	-0.706	0.016
Panel-C	**X on Y)**												
BSTA	→ operational performance(ROA)	0.247	0.479	0.309	0.323	0.007	0.985	-0.264	0.226	1.575	0.592	-2.377	0.014
BSTD	→ operational performance(ROA)	-0.16	0.399	-0.628	0.045	0.060	0.777	0.268	0.145	-2.082	0.502	2.009	0.036
BSOI	→ operational performance(ROA)	-0.15	0.608	0.300	0.005	-0.132	0.690	0.107	0.033	0.674	0.208	-0.001	0.996
Escale	→ operational performance(ROA)	-0.01	0.000	-0.006	0.086	-0.012	0.000	-0.007	0.000	-0.006	0.123	-0.028	0.000
Escope	→ operational performance(ROA)	-0.01	0.455	0.011	0.000	-0.004	0.468	0.001	0.190	-0.663	0.580	-0.010	0.007
NFIR	→ operational performance(ROA)	0.000	0.986	0.002	0.087	0.000	0.784	0.000	0.098	0.000	0.880	-0.004	0.002
LIDY	→ operational performance(ROA)	0.000	0.743	0.000	0.552	0.003	0.424	0.001	0.361	0.001	0.867	-0.004	0.004
CR	→ operational performance(ROA)	0.007	0.803	0.066	0.032	0.009	0.745	0.017	0.687	0.374	0.537	0.098	0.000
CAP	→ operational performance(ROA)	0.005	0.619	0.025	0.124	-0.001	0.931	0.040	0.000	0.012	0.585	0.009	0.653
GDP	→ operational performance(ROA)	1.276	0.021	-0.118	0.022	2.781	0.039	0.155	0.021	0.216	0.542	0.077	0.062
INF	→ operational performance(ROA)	0.126	0.039	0.055	0.270	0.003	0.981	0.172	0.068	-0.025	0.575	-0.148	0.074
R-sq (CR3)		0.533		0.558		0.262		0.304		0.990		0.649	
R-sq (ROA)		0.220		0.733		0.197		0.423		0.718		0.860	

NOTES: Panel -A represents the impact of X on M, Panel-B states the impact of M on Y and Panel C implies X on Y, respectively. Pooled samples pre 207 & post 213, Islamic bank sample pre 136, post 194 and conventional bank samples pre 171 & post 149.

5.4.2 Mediation Test Analysis Results of Operational Performance (ROA)

Table 5.8 shows the mediation test (Bootstrap t-test) analysis of CR3 between M&As and operational performance (ROA) for pooled, Islamic and conventional banks. The results suggest that certain specific factors have a strong mediation effect in the pooled, Islamic banks and conventional banks samples.

Accordingly, in the pooled samples and pre-M&As scenario, the financial intermediary role (economies of scope), control variables; GDP and inflation show strong mediation effects since the results of the Bootstrap t-test is statistically significant. Accordingly, in the post-M&As scenario, bank size (operating income), financial intermediary role (economies of scope), control variables, namely liquidity, capitalization and GDP, show strong mediation effects as so far shown by the Bootstrap t-test.

With the Islamic banks samples, in the pre-M&As scenario, market structure (CR3) does not show any mediation effects on the relationship between M&As and operational performance (ROA). Hence, the results of the Bootstrap t-test do not show any significance among the variables. Although Table 5.5 shows statistically significant mediation effects, it does not by Bootstrapping t-test.

In the post-M&As scenario, for Islamic banks samples, bank size (operating income), financial intermediary role (economies of scale), non-financial intermediary role, and control variables namely capitalization and GDP show strong mediation effects. On the contrary, in the case of conventional banks, bank size (total assets & total deposits), financial intermediary role (economies of scale), non-financial intermediary role, control variables, namely liquidity and credit risk, show strong mediation effects since the results of the Bootstrap t-test are statistically significant.

Table 5.8: Mediation Test Analysis Results of Operational Performance (ROA)

	Pooled				Islamic Banks				Conventional banks			
	Pre M&A		post M&A		Pre M&A		Post M&A		Pre M&A		Post M&A	
	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role
BSTA → CR3 → ROA	0.130	not support	0.210	not support	0.080	not support	-0.870	not support	0.990	not support	-3.190	support
BSTD → CR3 → ROA	-0.310	not support	-1.050	not support	-0.150	not support	1.100	not support	-1.050	not support	2.760	support
BSOI → CR3 → ROA	-0.170	not support	2.050	support	-0.240	not support	2.090	support	0.130	not support	-0.240	not support
Escale → CR3>ROA	-5.220	support	-1.220	not support	-3.140	support	-3.770	support	-1.750	not support	-3.910	support
Escope → CR3>ROA	-0.710	not support	2.630	support	-0.740	not support	1.440	not support	-0.780	not support	-1.780	not support
NFIR → CR3 → ROA	0.070	not support	1.110	not support	0.110	not support	2.170	support	0.040	not support	-2.160	support
LIDY → CR3 → ROA	-0.200	not support	-2.720	support	1.150	not support	0.390	not support	-0.870	not support	-2.990	support
CR → CR3 → ROA	0.270	not support	0.660	not support	0.140	not support	1.170	not support	0.700	not support	3.940	support
CAP → CR3 → ROA	0.360	not support	2.060	support	0.260	not support	4.640	support	-0.570	not support	0.760	not support
GDP → CR3 → ROA	2.310	support	-2.510	support	1.620	support	3.950	support	1.750	not support	1.130	not support
INF → CR3 → ROA	2.020	support	-1.310	not support	0.470	not support	1.200	not support	-1.130	not support	-1.430	not support

NOTES: *,**,*** statistically significant at 10%, 5% and 1%. Hair et al. (2013) recommends for the t-value 1.96, $p<0.05$ for the mediation effects, thus, this study will be selecting the one with a high confidence level (α=0.05 or 0.01). The null hypothesis will be rejected if the t-value exceeds 1.96 (at $p<0.05$), i.e., there is no mediating/indirect effect between the determinants of M&As and bank stability (Zscore).

Table 5.9: Summary of Findings for Operational Performance in Pre and Post M&As for Pooled, Islamic and Conventional Banks

Path Coefficient	Pre M&As-Pooled	Post M&As-Pooled	Pre M&As-IB	Pre M&As CB	Post M&As IB	Post M&As CB
	Mediating Role	Mediating Role	Mediating Role	Mediating Role	Mediating Role	Mediating Role
BSTA → CR3 → ROA	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	Competitive mediation
BSTD → CR3 → ROA	Indirect only mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	Competitive mediation
BSOI → CR3 → ROA	No- effect non-mediation	Complementary mediation	No- effect non-mediation	Indirect only mediation	Competitive mediation	No- effect non-mediation
Escale → CR3 → ROA	Direct only no mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	Competitive mediation	Complementary mediation
Escope → CR3 → ROA	No- effect non-mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	Complementary mediation
NFIR → CR3 → ROA	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	Direct only no mediation	Complementary mediation
LIDY → CR3 → ROA	No- effect non-mediation	Indirect only mediation	No- effect non-mediation	Indirect only mediation	Indirect only mediation	Competitive mediation
CR → CR3 → ROA	No- effect non-mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	Complementary mediation
CAP → CR3 → ROA	No- effect non-mediation	Competitive mediation	No- effect non-mediation	Indirect only mediation	Complementary mediation	Indirect only mediation
GDP → CR3 → ROA	Complementary mediation	Complementary mediation	No- effect non-mediation	Indirect only mediation	Competitive mediation	Complementary mediation
INF → CR3 → ROA	Competitive mediation	Indirect only mediation	No- effect non-mediation	Indirect only mediation	Complementary mediation	Direct only no mediation

5.4.3 Mediation (CR3) Effects in between M&As and Bank Stability (Zscore)

Table 5.10 displays the mediation effects of LHHI on the relationship between M&As and bank stability (Zscore) for pooled samples, Islamic banks, and conventional banks. Based on the findings, it is observed that the mediation of effects CR3 on the relationship of M&As and bank stability (Zscore) is very weak compared to LHHI, as shown in Table 5.3.

CR3 does not show any mediation effects on bank stability (Zscore) except for the pre-M&As of Islamic banks. In pre-M&As, R-sq of CR3 & Zscore is 0.262 & 0.812 respectively. R-sq implies the variance of CR3 & Zscore that is explained by the explanatory variables.

Based on the results, it is shown that CR3 mediates (partial and full mediation) the relationship of M&As and bank stability for Islamic banks. Bank size (total deposits & operating income) shows indirect and complementary mediation effects, respectively. Intermediary roles (financial and non-financial) do not offer a statistically significant impact. Control variables, namely credit risk, GDP, and inflation, show indirect mediation effects, while capitalization implies competitive mediation effects. The findings are summarized in Table 5.12. The mediation relationships are shown in the diagram as per Appendix Figure B1.6, Figure B1.8, and Figure B1.10, respectively.

Table 5.10: Statistically Significant Value (The Structural Model) of Bank Stability (Zscore) for the Pooled, Islamic, and Conventional Banks

		Pooled				Islamic bank				Conventional bank			
		Pre M&A		Post M&A		Pre M&A		Post M&A		Pre M&A		Post M&A	
Panel-A	**(X on M)**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
BSTA	→ market structure (CR3)	-0.077	0.000	-0.120	0.051	0.004	0.749	-0.039	0.057	0.051	0.710	-0.538	0.002
BSTD	→ market structure (CR3)	0.033	0.016	0.124	0.015	-0.022	0.029	0.025	0.130	0.008	0.955	0.668	0.000
BSOI	→ market structure (CR3)	0.035	0.041	-0.043	0.078	0.017	0.024	-0.010	0.006	-0.078	0.000	-0.067	0.085
Escale	→ market structure (CR3)	0.000	0.642	0.001	0.170	0.000	0.579	0.000	0.006	0.000	0.684	0.007	0.000
Escope	→ market structure (CR3)	0.000	0.761	-0.002	0.000	0.000	0.793	0.000	0.448	-0.017	0.498	0.004	0.000
NFIR	→ market structure (CR3)	0.000	0.931	0.000	0.690	0.000	0.887	0.000	0.738	0.000	0.621	0.001	0.000
LIDY	→ market structure (CR3)	0.000	0.332	-0.002	0.000	0.000	0.155	0.000	0.010	0.000	0.035	-0.001	0.000
CR	→ market structure (CR3)	0.001	0.354	-0.025	0.000	-0.001	0.056	-0.015	0.000	-0.005	0.761	-0.015	0.000
CAP	→ market structure (CR3)	0.000	0.689	0.003	0.068	0.002	0.007	0.001	0.048	-0.005	0.000	0.011	0.001
GDP	→ market structure (CR3)	0.420	0.000	0.012	0.246	-0.110	0.009	-0.039	0.000	0.529	0.000	-0.049	0.000
INF	→ market structure (CR3)	0.001	0.798	-0.068	0.001	0.015	0.007	0.023	0.000	-0.004	0.143	0.018	0.236
Panel-B	**(M on Y)**												
CR3	→ Bank Stability (Zscore)	3.845	0.540	-1.233	0.638	47.390	0.004	2.061	0.813	-15.12	0.273	-2.581	0.376
Panel-C	**(X on Y)**												
BSTA	→ Bank Stability (Zscore)	6.155	0.009	4.726	0.022	3.647	0.228	15.546	0.000	3.252	0.495	11.951	0.132
BSTD	→ Bank Stability (Zscore)	-4.754	0.016	-1.168	0.536	-2.675	0.224	-13.48	0.000	-4.299	0.335	-6.490	0.402
BSOI	→ Bank Stability (Zscore)	2.860	0.033	-1.311	0.005	3.760	0.018	-0.837	0.442	1.392	0.272	-2.787	0.125
Escale	→ Bank Stability (Zscore)	-0.103	0.003	-0.072	0.001	-0.127	0.040	-0.163	0.000	-0.012	0.136	0.005	0.905
Escope	→ Bank Stability (Zscore)	-0.031	0.176	-0.096	0.000	-0.019	0.452	0.005	0.598	-1.369	0.567	-0.095	0.004
NFIR	→ Bank Stability (Zscore)	-0.002	0.383	0.005	0.715	-0.001	0.881	-0.005	0.351	0.000	0.889	0.014	0.259
LIDY	→ Bank Stability (Zscore)	0.007	0.867	0.043	0.010	0.021	0.736	0.020	0.233	0.002	0.768	0.039	0.008
CR	→ Bank Stability (Zscore)	0.188	0.572	-0.440	0.000	0.129	0.734	-1.491	0.006	0.771	0.501	-0.174	0.288
CAP	→ Bank Stability (Zscore)	0.965	0.000	0.879	0.000	0.903	0.001	1.270	0.000	2.091	0.000	1.200	0.000
GDP	→ Bank Stability (Zscore)	-15.113	0.000	-0.612	0.024	-12.292	0.298	-2.260	0.014	0.446	0.738	-0.699	0.150
INF	→ Bank Stability (Zscore)	1.144	0.150	0.129	0.843	-1.825	0.295	-3.675	0.014	-0.052	0.581	0.984	0.187
R-sq (CR3)		0.533		0.558		0.262		0.304		0.990		0.649	
R-sq (Z-score)		0.533		0.945		0.812		0.879		0.996		0.947	

NOTES: Panel -A represents the impact of X on M, Panel-B states the impact of M on Y and Panel C implies X on Y, respectively. Pooled samples pre 207 & post 213, Islamic bank sample pre-136, post 194 and conventional bank samples pre 171 & post 149.

5.4.4 Analysis of Mediation Test Results of Bank Stability (Zscore)

Table 5.8 shows the mediation test of CR3 (Bootstrap t-test) on the relationship between M&As and bank stability. the results of the Bootstrap t-test implies that certain factors show strong mediation effects of CR3 on the relationship between CR3 & bank stability of Islamic banks.

According to results, it can be observed that bank size (total deposits & operating income), control variable (capitalization) displays strong mediation effects of CR3 on the relationship of M&As and bank stability.

Table 5.11: Mediation Test Analysis Results of Bank Stability (Z-Score)

	Pooled				Islamic Banks				Conventional banks			
	Pre-M&A		Post M&A		Pre-M&A		Post M&A		Pre-M&A		Post M&A	
	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role	Bootstrap t-stats	Mediation Role
B BSTA → CR3 → Zscore	2.540	support	2.240	support	1.560	not support	3.330	support	0.580	not support	1.320	not support
BSTD → CR3 → Zscore	-2.240	support	-0.550	not support	-0.890	not support	-3.530	support	-0.620	not support	-0.610	not support
BSOI → CR3 → Zscore	2.050	not support	-2.610	support	1.950	support	-0.710	not support	0.130	not support	-1.630	support
Escale → CR3 → Zscore	-2.690	support	-3.940	support	-1.890	support	-4.720	support	-1.290	not support	0.480	not support
Escope → CR3 → Zscore	-1.100	not support	-6.150	support	-0.970	not support	0.580	not support	-1.120	not support	-2.610	support
NFIR → CR3 → Zscore	-0.420	not support	0.460	not support	-0.090	not support	-0.660	not support	0.040	not support	1.470	not support
LIDY → CR3 → Zscore	0.150	not support	2.540	support	0.140	not support	1.100	not support	-0.670	not support	2.280	support
CR → CR3 → Zscore	0.390	not support	-4.070	support	0.450	not support	-2.330	support	0.750	not support	-1.350	not support
CAP → CR3 → Zscore	5.230	support	9.150	support	2.710	support	7.030	support	27.260	support	5.920	support
GDP → CR3 → Zscore	-2.400	support	-2.580	support	-0.740	not support	-1.990	support	1.750	support	-1.760	support
INF → CR3 → Zscore	1.070	not support	0.080	not support	-1.430	not support	-2.060	support	-0.960	not support	1.430	not support

NOTES: *, **, *** statistically significant at 10%, 5% and 1%. Mediation test analysis results for the bank stability (Z-score) for the pooled samples, Islamic banks, and conventional banks. Hair et al. (2013) recommends for the t-value 1.96, $p<0.05$ for the mediation effects, thus, this study will be selecting the one with high confidence level (α=0.05 or 0.01). The null hypothesis will be rejected if the t-value exceeds 1.96 (at $p<0.05$), i.e., there is no mediating/indirect effect between the determinants of M&As and bank stability.

Table 5.12: Summary of Findings for Stability in Pre and Post M&As for Pooled, Islamic and Conventional Banks

Path Coefficient	Pre M&As pooled	Post M&As pooled	Pre M&As IB	Pre M&As CB	Post M&As IB	Post M&As CB
	Mediating Role	**Mediating Role**	**Mediating Role**	**Mediating Role**	**Mediating Role**	**Mediating Role**
BSTA → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
BSTA → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
BSTD → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
BSOI → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Complementary mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
Escale → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Direct only no mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
Escope → CR3 → Zscore	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
NFIR → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
LIDY → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
CR → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
CAP → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Competitive mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
GDP → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation
INF → CR3 → Z-score	No- effect non-mediation	No- effect non-mediation	Indirect only mediation	No- effect non-mediation	No- effect non-mediation	No- effect non-mediation

Table 5.13 shows the goodness of fit test for the mediation results. Four indexes namely Chi-square (χ^2), Root Mean Square Error of Approximation (RMSEA), (Standardized) Root Mean Square Residual (RMSR), and Comparative Fit Index (CFI). Overall, based on Table 5.9, it shows that models are fit since four indexes shows outcome analysis value pass the cut off value. In addition, the chi-square value is the traditional measure used for evaluating the overall model fit and assesses the magnitude of discrepancy between the sample and the fitted covariance matrices. A good model fit would provide an insignificant result at a 0.05 threshold (Barret, 2007). Thus, the chi-square statistics are often referred to as either a badness of fit (Kline, 2015) or a lack of fit measure. The cut off for good fit is p-value >0.05 (Kline, 2015). The chi-square value is less than 0.05 and hence it is concluded that the model is fit.

Root Mean Square Error of Approximation (RMSEA) which was developed by Steiger and Lind. The RMSEA signals us how well the model with unknown but optimally chosen parameter estimates would fit the population's covariance matrix. As reported by the researcher, in recent years it has been regarded as one of the most fitted indices (Diamantopoulos, Siguaw, & Siguaw, 2000). The cut-off value of RMSEA should be less than 0.08 (Kline, 2015). Since RMSEA is less than 0.08, it implies that the model is good fit.

The (Standardized) Root Mean Square Residual (RMSR), RMR and SRMR are square roots of the differences between the residuals of the sample covariance matrix and the hypothesized covariance model. The cut of values for the (S) RMR ranges from zero to 1.0 with a well-fitting model obtaining values less than 0.05 (Diamantopoulos et al., 2000). However, values more than 0.08 are deemed acceptable. SRMR close to zero implies good fits of the model (Kline, 2015). The RMSR value is less than cut off value (0.08), therefore it is categorized as the model is good fit.

The Comparative Fit Index (CFI), is the revised form of NFI which considers the sample size and performs well even when the sample size is small (Bentler, 1990). The index was introduced by Bentler in 1990 and subsequently included in the fit indices in his EQS program (Kline, 2015). A cut-off criterion of <=0.90 was initially advanced, however, a recent study has shown that a value of more than 0.90 is needed to ensure that misspecified models are not accepted. Meanwhile, Kline (2015) stated that a value of more than 0.85 is currently recognized as the indicative of a good fit. As shown in the table, CFI value is more that 0.85 and hence it is concluded that the model is fit.

Table 5.13: Goodness of Fit Test of the Mediation Results

Model good of fit index	Name	Cut-off value	Model outcome analysis	Explanation	Description
χ^2 (Chi) Square	Model chi-square	<p=0.05	0.000	Good	Assess the overall fit and the discrepancy between the sample and fitted covariance matrices. Sensitive to sample size. H0: The model fits perfectly.
RMSEA	Root Mean Square Error of Approximation	≤0.08	0.000	Good	A parsimony-adjusted index. Values closer to 0 represent a good fit.
(S)RMR	(Standardized) Root Mean Square Residual	<0.08	0.000	Good	The square root of the difference between the residuals of the sample covariance matrix and the hypothesized model.
CFI	Comparative Fit Index	≥0.95	1.000	Good	A revised form of NFI. Not very sensitive to sample size. Compares the fit of a target model to the fit of an independent, or null, model.

5.5 Chapter Summary

This chapter discussed the mediating role of the market on the relationship between M&As and operational performance and bank stability in the Islamic and conventional banks. The results are reported based on the two measurements of market

structure namely the Herfindahl-Hirschman Index (HHI) (see Table 5.1 to Table 5.6) and the concentration ratio (CR) (see Table 5.7 to Table 5.12). Moreover, Part A indicates results and discussions for market structure (LHHI) while Part B implies another measurement of market structure (CR3).