

## Strategic Balance and Performance: A Study of Malaysian Banks

Ling Seng Wah,\* Mohd Nazari Ismail\* and Abdul Razak Ibrahim\*

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### Abstract

The main objective of this study is to investigate whether banks with similar resources requirements will achieve better performance through balancing the pressures of competition and legitimacy. Past studies on strategic management found that differentiation reduces competition whilst past studies on population ecology and institutional theory found that conformity enhances legitimacy. Therefore, organizations seem to face conflicting pressures. This study provides empirical support to the theory of 'Strategic Balance' which stresses that a balanced approach to differentiation and conformity enhances their performance. Organizations seeking competitive advantage should be as different as legitimately possible.

*Keywords:* Malaysian banks; Strategic management; Strategic balance; Conformity; Performance

### 1. Introduction

According to theories of strategic management, differentiation reduces competition. However, population ecology and institutional theories say that conformity enhances legitimacy. The approach of this study builds on the theory of strategic balance by synthesizing the differentiation and conformity perspectives. The theory focuses on the relationship between strategic similarity and performance through the mechanisms of competition and legitimacy. The theory's main recommendation is that organizations seeking competitive advantage should be as different as legitimately possible. As Yasukata and Kobayashi (2001) pointed out that performance evaluation systems are affected by the competitive strategy in the firms that gives different strategic mission to each business unit. [31]

#### 1.1 Scope of the Study

This study seek to provide empirical support to Deephouse's theory of strategic balance [10] in addressing performance consequences of firm-level strategic similarity of institutionalized local commercial banks in Malaysia. Deephouse's strategic balance theory suggests that intermediate levels of differentiation where organizations balance the benefits of reduced competi-

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\* Faculty of Business and Accountancy, University of Malaya, 50603 Kuala Lumpur, Malaysia (E-mail: mdnazari@um.edu.my)

tion against the costs of reduced legitimacy will improve organization's performance.

The strategic decisions of local commercial banks examined are asset allocation decisions, which are measured by a set of selected strategic variables. The empirical study is focused on the relationship between return on asset and strategic similarity of competing local commercial banks in Malaysia.

Empirical analysis is carried out using secondary data from annual balance sheet and financial statement of local commercial banks. A set of strategic variables is selected to construct the strategic deviation (independent strategic variable), which reflects the relative strategic position (strategic similarity) of each commercial bank. An equation is used to generate a general relationship between dependent variable (return on asset) and independent strategic variable (strategic deviation) in combination with other dependent and independent control variables. Statistical analysis using hierarchical multiple regression method is used to examine the relationship.

The statistical analysis examines whether the inverted U-shape (curvilinear) relationship exist between return on asset and strategic deviation. The analysis then investigates whether the curvilinear relationship receives stronger empirical support than linear relationship. The existence of inverted U-shape relationship and stronger empirical support of curvilinear relationship than linear relationship in the above analyses is concluded as strong support to the strategic balance theory.

## 2. Literature Review

Strategic management theories, population ecology and institutional theories and strategic balance projected different approaches to pursue better organization performance.

Strategic management theories predict that the intensity of competition among organizations is directly related to the distribution and availability of the resources. With finite resources, the competition will be intensified especially for the scarce resources. Higher rivalry usually leads to lower performance, because organizations must expand resources to compete more intensely. The increase in cost for getting the scarce resources will eventually lead to rational differentiation to reduces competition of similar resources to the extent of their realized strategic position [2]. Porter [24] postulated that 'the organization must stake out a distinct position in an unexploited or underexploited niche from its rivals. Imitation almost ensures a lack of

competitive advantage and hence mediocre performance.’ “The need to focus on the external factors like the competitors and climatic issues has become even more important and urgent in management of Asia economic crisis” [29].

Differentiation is a continuous process in the competitive market. Profits from a distinct position will persist depending on the ability of competitors to imitate the position. Successful organizations will try to maintain their distinct position either through the building of barriers of entrance or exploring new niches to reestablish their distinct position in order to continuously stay ahead of competitors [9]. A key resource of successful organization is finding unexploited niches and then erecting defensible barriers or locating profitable new strategic opportunities for its core competencies [22].

Empirical research has been supportive of the direct relationship of differentiation and performance. Gimeno and Woo [13] found that similarity in airline strategies was related to higher rivalry, measured as declines in revenue per passenger mile.

Baum and Mezias’s [2] study of the impact of localized competition on rates of failures in the Manhattan hotel industry from 1898 to 1990 showed that patterns of competitive interaction between single and multipoint competitors differ depending on whether they are members of the same or different groups. The results indicated that competition for the finite resources eventually leads to differentiation, the increase competition among less differentiated organizations increase the failure rate.

The results of Baum and Singh’s [4] study of niche overlap density with the number of organizations competing for the same resources; reflected the important of differentiation strategy to improve organization’s performance.

The conformity proposition derived primarily from resource dependence and new institutional theories, lead to a perspective on strategic similarity that an organization should be the same as others in order to achieve superior performance.

Formal organizations are generally understood to be systems of coordinated and controlled activities that arise when work is embedded in complex networks of technical relationships and boundary-spanning exchanges. But in the modern societies formal organizational structures arise in highly institutionalized contexts. Many of the positions, policies, programs and procedures of modern organizations are enforced by public opinion, by the

view of important constituents, by knowledge legitimated through the educational system, by social prestige, by the laws and by the definitions of negligence and prudence used by the courts. Such elements of formal structure are manifestations of powerful institutional rules which function as highly rationalized myths that are binding on particular organizations [18].

Deephouse [10] illustrated that members of the organizational field do not perceive or are indifferent to certain amounts of differentiation; organizations can be different to some degree from their competitors and maintain their legitimacy. This recognizes the empirical fact that organizations aren't exactly alike. The range of strategic similarity in which organizations maintain their legitimacy is called range of acceptability.

The literature review in Deephouse's [10] study of the integrative theory of strategic balance reported that:

*“Legitimacy challenges diminish the ability of an organization to acquire resources from potential exchange partners in the organizational field, such as customers, suppliers, and regulators (DiMaggio and Powell, 1983). A legitimate organization obtains resources of higher quality and at more favorable terms than does an organization whose legitimacy is challenged. There are at least three related reasons for this. First, a potential exchange partner that does not comprehend an organization's strategies or accept them as rational will not provide any resources to the organization, restricting resource supply. Second, an exchange partner may accept less favorable contact terms from a legitimate organization. This occurs because the legitimacy of the exchange partner is enhanced by contracting with a legitimate organization (Galaskiewicz, 1985; Pfeffer and Salancik, 1978: 145; Wood, 1991). In contrast, an exchange partner may require greater inducements to contract with an organization whose legitimacy is challenged. Third, less legitimate organizations are more likely to fail (Baum and Oliver, 1991; DiMaggio and Powell, 1983; Singh et al., 1986). This induces exchange partners to demand higher risk premiums in contracts (Cornell and Shapiro, 1987; Miller and Bromiley, 1990). Moreover, organizations with a greater risk of failure have difficulty maintaining quality managers and outside directors, reducing the effectiveness of organization decision-making and subsequent performance (Hambrick and D'Aveni, 1992). In sum, dissimilar organizations face legitimacy challenges that hinder resource acquisition and reduce performance.”*

Empirical research has been supportive of the conformity proposition. Baum and Oliver's [3] study of impact of institutional linkages on the failure of child care services organizations in Metropolitan Toronto, Canada, between 1971 and 1987, showed that organizations with institutional linkages exhibited a significant survival advantage that increased with the intensity of competition. Institutional linkages also had a significant moderating influence on the relationship between organizational transformation and the risk of failure. Establishing collaborative linkages to legitimated community and public institutions may be an important means by which organizations achieve reliability and accountability and increase their survival prospects.

Galaskiewicz and Burt [12] in a study of importance of institutionalizing processes with population of 67 publicly owned organizations, illustrated that professional networks that span organizations and diffuse information and attitudes create a pool of almost interchangeable individuals who occupy similar positions across a range of organizations and possess a similarity in tradition and control that might otherwise shape organizational behavior.

Institutionalized organizations in the competitive market face the pressure to be different and to conform to institutional rules. The extent of the organization's strategic similarity will depend on the relative strength of the differentiation and conformity propositions.

Hybels [16] suggested that organization's efficiency is enhanced in two contexts:

1. The demands of local relational networks encourage the development of structures that coordinate and control activities. Such structures contribute to the efficiency of organizations and give them competitive advantages over less efficient competitors.
2. The interconnectedness of societal relations, the collective organization of society, and the leadership of organizational elites create a highly institutionalized context. In this context rationalized structures present an acceptable account of organizational activities, and organizations gain legitimacy, stability and resources.

Through isomorphism process, organizations are driven to incorporate the practices and procedures defined by prevailing rationalized concepts of organizational work and institutionalized in society. But conformity to institutionalized rules often conflicts sharply with efficiency criteria and, conversely, to coordinate and control activity in order to promote efficiency

undermines an organization's ceremonial conformity and sacrifices its support and legitimacy.

Past studies have illustrated that organizations face the following conflicts if their success depend primarily on isomorphism with institutionalized rules.

- ❑ Technical activities and demands for efficiency create conflicts and inconsistencies in an institutionalized organization's efforts to conform to the ceremonial rules of production.
- ❑ The institutional rules are transmitted by myths that may arise from different parts of the environment; the rules may conflict with one another.
- ❑ Organizations often face the dilemma that activities celebrating institutionalized rules although they count as virtuous ceremonial expenditures are pure costs from the point of view of efficiency.
- ❑ Institutional rules are couched at high level of generalization [11] whereas technical activities vary according to specific, unstandardized and possibly unique conditions.

Meyer and Rowan [18] illustrated that an organization can resolve conflicts between ceremonial rules and efficiency by employing decoupling and the logic of confidence devices. This strongly supported the need to trade off between differentiation and conformity pressures.

Some recent studies also recognize the tension between the need for an organization to be different and the need for an organization to be the same. For example, Deephouse [10] demonstrated the usefulness of the perspective by examining the strategies of competing commercial banks. He showed that the integrated hypothesis of a curvilinear relationship receives stronger empirical support than either the differentiation or conformity hypotheses. In the study, two thought experiments [15] [30] are used in the synthesis. The conclusion is that the organization will achieve maximum performance at the level of strategic similarity where the gains from reduced competition are equal to the costs of legitimacy challenges. At greater levels of dissimilarity the costs of legitimacy challenges exceed the benefits of reduced competition, leading to lower net performance. The general implication is that the organization has highest performance at moderate levels of strategic similarity.

Carroll and Hannan [7] in the study of density dependent processes of legitimation and competition, with nine newspaper populations spanning the 19<sup>th</sup> and 20<sup>th</sup> centuries and covering 5200 newspapers illustrated that the characteristic growth trajectory reflects the operation of opposing processes of legitimation and competition. The Carroll and Hannan's [7] model built on the assumption that processes of legitimation and competition for limited resources shape rates of founding and failure. The results showed that the non-monotonic model improved significantly over monotonic (e.g., linear) models of density dependence for both founding rates and mortality rates, it strongly supports the theory of strategic balance.

Haveman's [14] study of density dependent processes of legitimation and competition with data covered all 313 savings and loan associations operating between 1977 and 1987; indicated an inverted U-shaped relationship with rate of entry into that market. The result can be linked indirectly to the relations among strategic similarity, competition, legitimacy and performance; which is in line with the argument of theory of strategic balance.

Barnett and Carroll's [1] analysis of rates of founding and mortality of independent local telephone companies in Iowa countries; Mitchell's [19] study of rates of entry into the medical diagnostic imaging industry during 1959 to 1986; Tucker, Singh, Meinhard and House's (1991) analysis of founding of voluntary social service organizations in Toronto from 1970 to 1982; yielded estimates of density dependence supporting the theory of strategic balance

### **3. Research Methodology**

#### *3.1 Research Hypotheses*

It is quite clear from the review of the literature that there are a number of conflicting propositions that are being debated in this area. The propositions are as follows:

- Differentiation proposition: Less strategic similarity increase performance.
- Conformity proposition: Greater strategic similarity increases performance.
- Strategic balance proposition: Moderate amounts of strategic similarity increase performance.

The following hypotheses are used to test the above propositions:

*Hypothesis 1 (Differentiation):* There is a positive relationship between strategic deviation and performance.

*Hypothesis 2 (Conformity):* There is a negative relationship between strategic deviation and performance.

*Hypothesis 3 (Strategic balance):* There is a curvilinear, inverted U-shape relationship between strategic deviation and performance.

### 3.2 Selections of Measures

The selections of the measures for performance (dependent variable), strategic deviation (independent strategic variable) and dependent and independent control variables were based on Deephouse's [10] empirical study on the theory of strategic balance.

#### 3.2.1 Dependent Variable

The measure for performance of commercial bank was based on the return on asset (ROA), which is the ratio of profit before tax to assets reported at year-end. Relative ROA was used as performance measure [25] in the statistical test, which indicates how well a bank is performed relative to its competitors. Relative ROA is the different between commercial bank's ROA and the average ROA of all commercial banks in a given year.

#### 3.2.2 Independent Strategic Variable

The measure for strategic deviation as independent strategic variable was based on the specific strategies used in allocation of bank resources. Each specific strategy is defined as individual strategic variable. This study examined the following ten strategic variables measured as a proportion of bank total assets: -

1. Cash and short term funds
2. Deposits and placement with financial institutions
3. Dealing and investment in securities
4. Others assets
5. Manufacturing loan
6. Construction loan
7. Real estate loan
8. Finance, insurance and business services loan
9. Consumption credit
10. Other loan



The degree of similarity of each strategic variable was measured using standard deviation. For a given year, each strategic variable for each bank was compared to sample average and expressed as standard deviation. The absolute values of standard deviations of each strategic variable were totaled for each bank to form strategic deviation because strategy is holistic concept involving interrelated components and aggregation increase model parsimony [10].

The standard deviation of each bank  $(i)$  in a given year  $(t)$  was derived from the following equation:

Strategic deviation $_{(i,t)} = \sum_{a=1 \text{ to } n} \{ \text{ABS} [ (P_{ait} - \text{Aver}(P_{at})) / \text{SD}(P_{at}) ] \}$   
 where;  $P_{ait}$  = Proportion of the assets in specific strategic variable $_{(a)}$  for bank $_{(i)}$  in given year $_{(t)}$ .  $\text{Aver}(P_{at})$  = Mean of strategic variable $_{(a)}$  in given year $_{(t)}$ .  
 $\text{SD}(P_{at})$  = standard deviation of strategic variable $_{(a)}$  in given year $_{(t)}$ .

### 3.2.3 Independent Control Variables

Three independent control variables were included in statistical analysis using hierarchical multiple regression to account for the influences of other elements on ROA. The independent control variables included were market share of deposit, operational efficiency and market growth of deposit.

#### 3.2.3.1 Market Share of Deposits

Many past researches have illustrated that organization size has direct relationship with performance [6,8,27]. Bigger organizations normally act as market leader; they are able to exert market power, exercise leadership in many business strategies. Thus, they gain first mover's advantage to performance better than other competing organizations. According to micro economy theory, size effect also associates strong with benefit of economies of scale whereby bigger size of organizations are able to reduce the unit cost to gain higher profit margin.

For this study, commercial banks' market share based on deposit as control variable was used to account for relative size effect, which is expected to have a positive relationship with ROA.

#### 3.2.3.2 Cost Efficiency

Although the assumption of perfect competitive market theory is applied to commercial banks in general, some banks are relatively more cost efficient than others [6], irrespective of the size effect. This cost efficiency is strongly related to banks' management skill in normal business operation.

For this study, the cost efficiency as control variable was measured by the ratio of total interest and non-interest expense to total average bank's assets. The cost efficient is expected to have positive relationship with ROA.

### 3.2.3.3 Market Growth of Deposit

Changes in the overall market resources condition over time may affect the degree of market competition and hence the organization's performance. It is assumed that supply of resources is relatively more than demand of resources, thus drive down the resource cost and improve the performance.

For this study, market growth of deposit as control variable was measured by the ratio of current total market deposits to previous total market deposits. This control variable is expected to have positive relationship with performance.

### 3.2.4 Dependent Control Variables

Lagged effect of previous performance in the form of relative ROA was included as dependent control variable. It is assumed that the effects of changes of the previous performance are distributed over multiple time periods. This control variable is expected to have positive relationship with performance.

### 3.3 Sampling Design and Data Collection

This study was conducted by testing the hypotheses in a population of local commercial banks competing in Malaysia (as single market) from 1995 to 2000. A sampling frame was developed to provide a summary list population element for each year as direct sampling guide.

The secondary internal data for dependent variable, independent strategic variables and dependent control variable was collected from the data published in annual report of each commercial bank. The report format of all commercial banks is standardized by the BNM (Bank Negara Malaysia or Central Bank of Malaysia). Thus the strategic deviation computed using the data published directly reflect the relative distinct strategic position of each bank without any modification or adjustment. The main sources of these data are the BNM library, Kuala Lumpur Stock Exchange library and each commercial bank headquarters.

The rest of the secondary external data was collected from BNM's periodic publications. The unit of analysis is the bank-year. Data in 1995 was served to provide the first dependent control variable (lagged variable)

for 1996. Strategic variables were constructed using data published from 1996 onwards because the components of the loan extended by bank were incorporated in annual report only since 1996.

### 3.4 Data Analysis Techniques

The SPSS computer software was used for the statistical analysis in this study. The scatter diagram was plotted for distribution of relative ROA and strategic deviation as part of data screening and cleaning processes. The preliminary regression analysis was carried out to examine the linear and curvilinear relationship between strategic deviation and ROA. The existence stronger curvilinear relationship than linear relationship would provide support to strategic balance theory proposition.

The data was analyzed using hierarchical multiple regression method. In the study of curvilinear relationship, second order of independent strategic variable is the highest order considered in the models. Three models shown below were used in the hierarchical multiple regression analysis to examine the relationship between dependent variable, strategic independent variable and control variables:

$$\text{Model 1: } RROA_{(i,t)} = B_0 + (B_3 * MS_{(i,t)}) + (B_4 * EFF_{(i,t)}) + (B_5 * MG_{(t)}) + (B_6 * RLAG_{(i,t)}) + e_{(i,t)}$$

$$\text{Model 2: } RROA_{(i,t)} = B_0 + (B_1 * SD_{(i,t)}) + (B_3 * MS_{(i,t)}) + (B_4 * EFF_{(i,t)}) + (B_5 * MG_{(t)}) + (B_6 * RLAG_{(i,t)}) + e_{(i,t)}$$

$$\text{Model 3: } RROA_{(i,t)} = B_0 + (B_1 * SD_{(i,t)}) + (B_2 * SD_{(i,t)}^2) + (B_3 * MS_{(i,t)}) + (B_4 * EFF_{(i,t)}) + (B_5 * MG_{(t)}) + (B_6 * RLAG_{(i,t)}) + e_{(i,t)}$$

where;  $RROA_{(i,t)}$  → Relative ROA for bank<sub>(i)</sub> and year<sub>(t)</sub>  
 $SD_{(i,t)}$  → Strategic deviation for bank<sub>(i)</sub> and year<sub>(t)</sub>  
 $MS_{(i,t)}$  → Market share for bank<sub>(i)</sub> and year<sub>(t)</sub>  
 $EFF_{(i,t)}$  → Cost efficiency for bank<sub>(i)</sub> and year<sub>(t)</sub>  
 $MG_{(t)}$  → Market growth for year<sub>(t)</sub>  
 $RLAG_{(i,t)}$  → Lagged relative ROA for bank<sub>(i)</sub> and year<sub>(t-1)</sub>  
 $e_{(i,t)}$  → residual error for bank<sub>(i)</sub> and year<sub>(t)</sub>

Model 1 was used to test the control variables.

Model 2 was generated by adding first order of strategic deviation into model 1. Model 2 was used to test the hypothesis 1 against hypothesis 2.

Model 3 was generated by adding second order of strategic deviation into model 2. Model 3 was used to test the hypothesis 3.

The disturbing phenomena of first order of autocorrelation, heteroscedasticity and multicollinearity need to be examined because of the presence of lagged dependent variable and time series data. However, there was a high interaction among these disturbing phenomena, so treatment for each phenomenon may not be appropriate and may generate other disturbing effects. Treatments will be applied only if it is appropriate and originality of data set can be restored.

Durbin-Watson statistic was used to identify the existence of first order of autocorrelation. For certain level of significance, Durbin-Watson statistic (D) must greater than ' $d_u$ ' so that null hypothesis of no autocorrelation cannot be rejected. An iterative approach [30] will be used (if appropriate) to reduce its disadvantage in obtaining the coefficients of models, iterative process stops when D is greater than  $d_u$ . The following is the tabulation for  $d_u$  at 0.01 level of significance [17] which was used for this study:

Table 1 The Durbin-Watson Statistics

Data sets	Model 1 (4 variables)	Model 2 (5 variables)	Model 3 (6 variables)
80	1.60	1.62	1.62
85	1.60	1.63	1.63
90	1.61	1.64	1.64

The distributions of residual errors vs independent variables were used to identify the existence of heteroscedasticity. Weighted least square regression will be used (if appropriate) to restore homoscedasticity.

Condition index computed by SPSS was used to identify the degree of degrading effect of multicollinearity on regression estimates for further evaluation. Weak degrading effect is associated with condition indexes around 5 or 10 whereas moderate to strong degrading effect is associated with condition indexes of 30 to 100 [5].

The fitness of the each model was examined. The sign of each variable coefficient in each model was examined and tested statistically.

The improved fitness of model 1 over model 2 reflects that strategy is related to the competitive environment and institutional environment, and there is existence of relationship between strategy and performance.

If the fitness of model 3 improve over model 2, and the term of coefficient B2 (in model 3) is negative and statistically significant, then it can be concluded in this study that hypothesis 3 have greater credence over hypothesis 2, which will provide strong empirical support to strategic balance theory.

#### 4. Research Results

##### 4.1 Summary Statistics of Sampling and Data Collection

There are 127 data sets in the sampling frame. Due to bank merger exercises, the number of data set for each year decreased by the year 2000. 110 data sets were collected, which is equivalent to 87% of total data sets in the sampling frame.

The 20 data sets collected for year 1995 were only used to derive the first lagged variable for following year; hence the actual number of data set available for the models is 90. The RROA distribution vs. SD is plotted as below:

Preliminary screening has been carried out on the distribution of dependent variable RROA. A range has been designed with mean of RROA as center of the range to identify the "unusual" RROA. The lower range is mean minus three times standard deviation of RROA. The upper range is mean plus three times standard deviation of RROA. Six (6) data sets found outside the range were further dropped from the study.

The final number of data set used in the study is 84 which are plotted in the above scatter diagram. In this study, model 3 contains the most independent variables with maximum number of independent variables of 6. As rule of thumbs, minimum 10 data sets are required for every independent variable to facilitate efficient/accurate multiple regression analysis [30]. Hence, the 84 data sets are adequate to meet the minimum requirement in this study.

Table 2 Means and Correlation Coefficients among Research Variables

Variables	Means	Standard Deviation	Correlations						
			RROA	MS	EFF	MG	RLAG	SD	SD <sup>2</sup>
RROA	0.2713	0.7690	1.000						
MS	0.0433	0.0052	0.340	1.000					
EFF	-0.0558	0.0188	-0.137	0.097	1.000				
MG	0.0077	0.0985	-0.443	-0.150	0.102	1.000			
RLAG	7.5639	1.6152	0.332	0.208	-0.120	-0.072	1.000		
SD	7.5639	2.7473	-0.204	-0.223	0.180	-0.021	-0.178	1.000	
SD <sup>2</sup>	64.6706	46.2991	-0.250	-0.235	0.185	-0.017	-0.171	0.981	1.000

Table 3 Significances of Correlations among Research Variables

Variables	Number of Data Set	Significance of Correlations						
		RROA	MS	EFF	MG	RLAG	SD	SD <sup>2</sup>
RROA	84	-						
MS	84	0.001	-					
EFF	84	0.108	0.189	-				
MG	84	0.000	0.087	0.177	-			
RLAG	84	0.001	0.029	0.138	0.258	-		
SD	84	0.031	0.021	0.051	0.424	0.053	-	
SD <sup>2</sup>	84	0.011	0.016	0.046	0.440	0.060	0.000	-

## 4.2 Analysis of Measures

### 4.2.1 Statistical Properties of Variables

The means, standard deviations and correlations among the variables are tabulated as above:

The correlations between dependent variable (RROA) and all other independent variables were significant at 0.05 level except variable EFF.

The positive correlation between RROA and MS; RROA and RLAG were consistent with expectation. The negative correlations between RROA and EFF; RROA and MG were contradicted with expectation. The negative correlation between RROA and SD implied signal of support for hypothesis 2. The negative correlation between RROA and SD<sup>2</sup> implied signal of support for hypothesis 3.

The strong correlation of 0.981 at 0.000 significance level between SD and SD<sup>2</sup> suggested that multicollinearity needs to be examined in Model Page:265. [0]According to Nunnally [21] suggest that , “researcher should look at the correlation matrix and observe natural groupings of variable with high correlation.” Moreover, Ngai and Cheng [20], pointed out that,

“correlation greater than 0.2 used in the analysis are statistically significant at the 0.01 level (N=100).” From table 3 we could see that market growth (MG) is not statistically significant to strategic deviation (SD). This supports conformity proposition that greater strategic similarity increases performance. This relationship will be tested further in this section.

#### 4.2.2 Linear and Curvilinear Relationship between RROA and SD

Two separate linear regression analyses were carried out to provide preliminary examination on linear and curvilinear relationship between RROA and SD. The results are summarized as below:

By comparing the above  $R^2$ , standard error of estimates and F-test results, the preliminary analysis indicated stronger curvilinear relationship, which has better fitness to the data sets. The negative curvilinear coefficient of  $-0.0042$  was significant at 0.022 level implied high possibility of existence of inverted U-shape relationship as stated in hypothesis 3.

The following figure generated using SPSS curve-estimation regression shows the linear and curvilinear relationship between RROA and SD:

Hierarchical regression analyses were carried out for model 1, model 2 and model 3 using the original data sets. Based on the outputs, it was found that Durbin-Watson statistics were relatively low for all three models indicated existences of autocorrelation phenomena. The iterative approach suggested by Wesolowsky [30] was used to rectify the phenomena; all models met the Durbin-Watson statistic requirement after third step of iteration process. The Durbin-Watson statistics before and after the treatment are tabulated below:

Table 4 Hierarchical Regression Analysis between ROA and SD

Model	R	R <sup>2</sup>	Standard Error of Estimates	F-Test		Linear Coeff.		Curvilinear Coeff.	
				F	Signif.	Coeff.	Signif.	Coeff.	Signif.
Linear	0.204	0.042	0.7574	3.563	0.063	-0.057	0.063	NA	NA
Relationship									
Curvilinear	0.25	0.063	0.7491	5.469	0.022	NA	NA	-0.0042	0.022
Relationship									

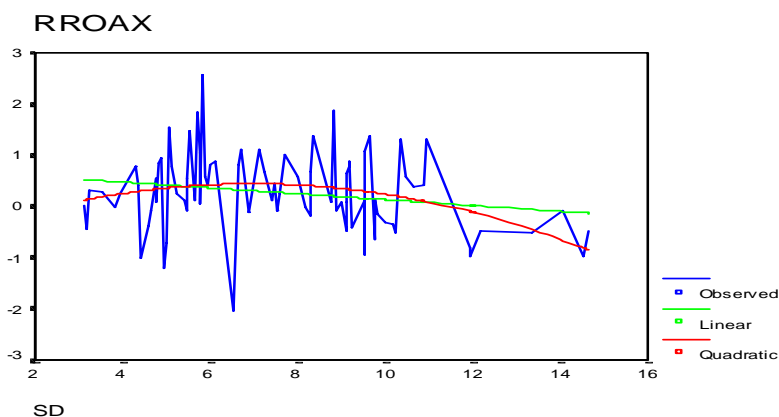


Figure 1 Hierarchical Regression Analyses: Testing of the Models

Table 5 Durbin-Watson Statistics before and after Treatment

Model	Durbin-Watson Statistics		$d_u$	Remarks
	Before Treatment	After Treatment		
1	0.660	1.717	1.60	Low correlation (less than 0.45 between original and treated data sets)
2	0.675	1.706	1.63	Low correlation (less than 0.45 between original and treated data sets)
3	0.769	1.703	1.63	Low correlation (less than 0.45 between original and treated data sets)

Low correlations were found between original and treated (after 3 steps of iterative process) data sets. This indicated that the original data have been distorted significantly and the end result after treatment may not be able to reflect the actual relationship of the models, hence the treatments were dropped to restore the original characteristics of the data sets.

The residual distributions were plotted to check whether there was any possible relationship between residual and variables. Based on the plots, weak to moderate heteroscedascity phenomena were found in model 2 and model 3 associated with variable SD and  $SD^2$  respectively. Preliminary weighted least square analyses follow SPSS approaches found increases in standard error of estimates , so SPSS approach was dropped from the treat-



Table 6 Condition Index for Regression Model

Model	Date Sets	Condition Index
1	Original	8.645
2	Original	12.839
3	Original	40.869
2	Weighted using SD	14.159
3	Weighted using SD <sup>2</sup>	39.468

ment process. Wesolowsky's [30] approach of weighted least square regression using variable SD and SD<sup>2</sup> with power of 1 for model 2 and model 3 respectively were carried out. The outputs after treatment as indicated slight improvement on Durbin-Watson statistics and condition indexes with weak distortion effects. However heteroscedascity phenomena still existed after the treatment. The analysis results were summarized for further elaboration.

Condition indexes from the analyses of each model were examined and tabulated as above:

From the above tabulated, only weak degrading effects in model 1 and model 2 were observed. Model 3 encountered weak to moderate degrading effect mainly due to the presence of second order of strategic variable (SD<sup>2</sup>) which was highly correlated with first order of strategic variable (SD). In general, the condition indexes from the analyses of the models were acceptable, hence no further treatment required.

#### 4.3 Summary of Research Results

Five sets of SPSS analyses results were selected for further evaluation, three sets of analyses results were generated from each model analysis using original data sets, the other two were generated from model 2 and model 3 using treated data sets for heteroscedascity phenomena.

##### 4.3.1 Fitness of Model

The analysis parameters for the evaluation of fitness of each model are tabulated below:

The F-test results of all the model estimates were significant at 0.001 level, it indicated that the estimated linear relationship of the models were not due to chance. The moderate level of R<sup>2</sup> (coefficient of determination) of

Table 7 Results of Regression Analysis

Model	Status Of Data Sets	R	R <sup>2</sup>	Standard Error of Estimates	Durbin Watson Statistics	Maximum Condition Index	F-Test	
							F	Signif.
1	Original	0.586	0.344	0.6384	0.66	8.645	10.356	0.000
2	Original	0.596	0.355	0.6372	0.675	12.839	8.58	0.000
2	Weighted (1/SD)	0.671	0.45	0.081	0.982	14.159	12.28	0.000
3	Original	0.639	0.409	0.614	0.769	40.869	8.87	0.000
3	Weighted (1/SD <sup>2</sup> )	0.665	0.443	0.015	1.234	39.468	9.8	0.000

all models with highly significant F-test results indicated that the number of data sets were adequate for the regression analyses.

The fitness of model measured by parameter R<sup>2</sup>, R and standard error of estimates indicated that model 3 has better fitness than model 2 which in turn has better fitness than model 1.

Durbin-Watson statistics of the model indicated that autocorrelation phenomena decrease in the order of model 1, model 2 and model 3.

Condition indexes of the models indicated that model 3 has most degrading effect of multicollinearity with the inclusion of second order of strategic variable (SD<sup>2</sup>). This was due to the high correlation between SD and SD<sup>2</sup> as stated in Section 4.2.

#### 4.3.2 Estimates of Control Variables

The coefficients of control variables computed for each model are tabulated below:

All the coefficients of control variables having consistent sign for all models, it indicated that these coefficients estimates were reliable. With model 1 represents the baseline model for control variables, the consistency of the sign (with added variable SD in model 2 and SD<sup>2</sup> model 3) indicated that no obvious multicollinearity phenomena in these coefficients estimates, because sign of coefficients will change by adding new variable if strong degrading effect of multicollinearity exists.

The estimates for coefficient of MG and RLAG were significant. The estimates for coefficient of MS and EFF were not significant. The sign of

Table 8 Estimates of Coefficients for Regression Models

Model	Status Of Data Sets	MS Coefficient		EFF Coefficient		MG Coefficient		RLAG Coefficient	
		Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.
1	Original	3.552	0.013	-3.76	0.326	-2.967	0.000	0.116	0.011
2	Original	3.174	0.03	-2.869	0.462	-3.04	0.000	0.11	0.017
2	Weighted (1/SD)	1.56	0.211	-7.457	0.053	-2.507	0.000	0.233	0.000
3	Original	2.827	0.045	-2.25	0.55	-3.036	0.000	0.115	0.01
3	Weighted (1/SD <sup>2</sup> )	1.474	0.258	-7.612	0.085	-2.236	0.000	0.258	0.000

MS and RLAG coefficients were positive as expected. The negative sign of MG and EFF coefficients were opposite of what was expected.

#### 4.4 Limitations and Assumptions of the Study

The study of strategic balance theory developed here limited to local commercial banks in Malaysia as for-profit organizations in an established market within a structured organizational field [10], using one industry in one market controls for differences across industries and localized business conditions.

The study assumes that strategy is related to the competitive environment and institutional environment. Organizations in an established market compete with each other for both customers and suppliers. Organizations in a structured organizational field face institutional pressures from government regulators, professional associations and social networks. The study assumes no strategic group [26] in this market and that local commercial banks do not collude.

In this study, the analysis of organization's performance is focused on firm-level strategic similarity, which is assumed to represent organization differences. Strategic similarity is constructed using a set of selected strategic variables by combining each deviation of strategic variables into strategic deviation. Hence, local commercial banks can have same level of similarity but not have the same level of set of strategy variables.

Organization's performance is defined as the net flow of resources in term of return on asset, which is a covering term representing competitive advantage, survival, social and economic fitness, etc. The study assumes that organizations with persistent net resource outflows will eventually fail.

The study assumes local commercial banks interact actively in both organizational field (consists of a network of competitors, suppliers, customers, regulators, trade associations etc) and general environment (consists of other organizations outside the organizational field and socio-cultural, technological, economic, and other trends).

Strategy researchers using a cognitive perspective suggested that managers in an industry develop a cognitive consensus about what strategies are proper and reasonable. This study assumes that strategies can be legitimated by institutional forces in both organizational field and general environment. Managers in local commercial banks are assumed to be organizationally rational, they select and implement strategies that they think will lead to higher performance.

Local commercial banks are assumed not powerless in the face of institutional forces. Therefore, local commercial banks can resist the attempt to influence them. Local commercial banks are assumed to be price-takers on cost side and also for other costs of doing business, such as rent and wages, because they compete in a market with organizations of all type for office space and employees.

The study assumes that other determinants of competition, legitimacy and performance are assumed constant in order to focus on the role of strategic similarity.

#### 4.4.1 Estimates of Strategic Variable

The coefficients of strategic variables computed for each model are tabulated below:

The changing sign of SD coefficient from model 2 (original) to model 3 (original) indicated multicollinearity phenomenon in this estimate. This was due to the high correlation between SD and  $SD^2$  as stated earlier and increase in variables in the model. Because of multicollinearity, the coefficient of relationship changed even though  $R^2$  changed only slightly.

The significant level for most of the coefficients estimates were low even though  $R^2$  is highly significant, this can be explained with the existence of multicollinearity phenomena because the degrading effects increase standard error of coefficients [31].

The significance of estimates for coefficients of SD and  $SD^2$  deteriorated using weighted least square for the estimates. The estimate for  $SD^2$  coefficient was negative and at better significant level than SD coefficient.

Table 9 Estimates of Coefficients of SD and SD<sup>2</sup>

Model	Status Of Data Sets	SD Coefficient		SD <sup>2</sup> Coefficient	
		Coeff.	Signif.	Coeff.	Signif.
1	Original	NA	NA	NA	NA
2	Original	-0.031	0.255	NA	NA
2	Weighted (1/SD)	0.019	0.451	NA	NA
3	Original	0.296	0.022	-0.02	0.01
3	Weighted (1/SD <sup>2</sup> )	0.218	0.152	-0.0139	0.261

## 5. Conclusion and Recommendations

### 5.1 Summary and Conclusions

#### 5.1.1 Conclusion on Hypotheses Tested

Model 2 added strategic deviation (SD) to test hypothesis 1 and hypothesis 2. The negative coefficient of SD in model 2 (original) supports hypothesis 2 over hypothesis 1. Hypothesis 2 gains further credence because the inclusion of strategic deviation improved the fitness of the model over model 1 (baseline model).

Model 3 added the second order of strategic deviation (SD<sup>2</sup>) to test hypothesis 3. The negative coefficient of SD<sup>2</sup> and significant at 0.01 level indicated the inverted U-shape relationship between strategic deviation and performance. Thus, there is support for hypothesis 3. Hypothesis 3 gains greater credence because the inclusion of the second order of strategic deviation improved the fitness of the model over model 1 and 2.

Overall these results support the strategic balance hypothesis over baseline model and hypothesis 1 and 2.

#### 5.1.2 Conclusion on Control Variables Relationship

The coefficient of relative lagged dependent variable was positive and significant, as expected.

The coefficient of market growth was significant but its sign was opposite of what was expected. Base on the data collected, the average relative ROA and market deposit growth for each year are tabulated below: -

Table 10 Coefficients of Relative Lagged Dependent Variables

Year	1996	1997	1998	1999	2000
Market Growth (%)	23.94	23.19	2.2	8.1	1.9
Average ROA (%)	+0.000	-0.24	0.62	0.64	0.48

From the above tabulation, the relationship of better relative ROA associated with lower market growth is obvious, which is in line with negative coefficient of market growth estimated in hypothesis testing. The negative sign may reflect the situation in 1996 and 1997 whereby market deposit growth was overheated by the economy booming. The sharp expansion in economy activities led to unusual high credit growth in the market. Deposit interest was increased sharply to attract market deposit to meet the high loan demand. The situation was further heated by the TTRS requirement set by BNM earlier which has impact of inducing aspiring bank institutions to increase their asset base in rapid manner to keep up with the required earnings on capital. As such, performance of bank in general deteriorated during strong market deposit growth in 1996 and 1997. Market deposit growth decreased to 2.2% from 23.94% of previous year growth, it was due to the Asian financial crisis. However, the average ROA improved after a series of market consolidations and interventions of BNM through Danaharta, Danamodal and CRDC especially on non-performing loans issues.

The coefficient of market share was positive. It indicated the advantages of economies of scale and market power as expected. However, the significant level of 0.05 is relatively low in statistical analysis.

The coefficient of cost efficiency was negative in contrast to expectation. It has no significant impact on relative ROA.

### 5.2 Other Suggestions and Comments

There were other limitations in this empirical study that present opportunity for future research. The sample was limited to local commercial banking market in Malaysia. Future research should examine if strategic balance theory applies in other markets facing strong competitive and institutional pressures. Many past researches that examined similar strategy management issues used samples in other markets such as education centers, hospitals, child care companies, hotels, insurance companies, banks, railroad

companies, news paper companies, airline companies, security companies and media companies. However, the specific strategic resource commitments in these markets may vary. Within these industries, strategic norm may develop around different resource commitment, such pricing, innovation or product promotion.

The theory examined only one type of organization difference namely strategy. Strategy was used because it sets the overall direction of the organization [10]. However, other organization characteristics may be important, such as technology, risk management, organization structure, and number of branches. Conformity in one characteristic may offset differentiation in another. By incorporating these other characteristics, the theory of strategic balance may evolve to a more general theory of firm balance.

There are other alternatives in the measurement of strategic similarity. This study used averages of organization strategies as reference points. Some other studies on competition used pairwise comparisons, which compute distances between the focal firm and every other firm on several dimensions before aggregating to a summary measure. There are other alternatives to measure the degree/distance of differences. This study used standard deviations to measure distance. Linear and Euclidean (i.e., squared) distance has been used in other studies. In general, Pairwise methods might better reflect competition between individual organizations, whereas standard deviation methods might better reflect the legitimacy of a firm within the industry.

This study focused on linear relationship. The relationship between differentiation and performance, but this relationship could be nonlinear such as suggested by the economic property of diminishing returns. The relationship that strategic conformity increases legitimacy which increases performance, could be nonlinear as well. Organizations within certain range are similar enough to be judged legitimate by the organizational field. Thus strategic similarity does not influence legitimacy within this range group but could influence legitimacy between organizations in different ranges or at strategic group level.

This study did not measure the relative strengths of competitive forces in the market and legitimating forces in the institutional environment. Different market may face different relative strengths of competitive force and legitimating forces depend on the nature of conducts of the businesses. Firms with high strategic similarity were assumed to face competition that was

more costly than the benefits of legitimacy. Firm with low similarity were assumed to face legitimacy challenges that were more costly than the benefits of reduced competition. Future research should develop ways to compare these forces.

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