A STUDY ON RELATIVE EFFICIENCY OF DOMESTIC COMMERCIAL BANKS IN BOTH PRE AND POST MERGER PERIOD IN THE ERA OF GLOBALIZATION AND FINANCIAL LIBERALIZATION

Foo Kok Kian

Kota Samarahan
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A STUDY ON RELATIVE EFFICIENCY OF DOMESTIC COMMERCIAL BANKS IN BOTH PRE AND POST MERGER PERIOD IN THE ERA OF GLOBALIZATION AND FINANCIAL LIBERALIZATION

By

FOO KOK KIAN

A Research Paper Submitted in Partial Fulfilment of the Requirement For the Degree of Corporate Master in Business Administration Faculty of Economics and Business Universiti Malaysia Sarawak 2002
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I certify that I have supervised and read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a research paper for the degree of Corporate Master in Business and Administration.

Name of the : Assoc. Prof. Dr. Shazali Abu Mansor
Supervisor

This research paper was submitted to the Faculty of Economics and Business, UNIMAS and is accepted as partial fulfilment of the requirements for the degree of Corporate Master of Economics and Business.

Assoc. Prof. Dr. Shazali Abu Mansor
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UNIMAS
DECLARATION AND COPYRIGHT

Name : Foo Kok Kian
Matric Number : 00 – 02 – 0488

I hereby declare that this research is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references and a bibliography is appended.

Signature

Date : 15. 4. 2002

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Dedication

I would like to dedicate this piece of work to my parents, Mr. & Mrs. Foo See Chek, my spouse, Josephine Foh Nyet Foong and my son, Ethan Foo Zhi Yu for their supportive roles during the course of the programme.
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# Abbreviation of Malaysian Domestic Commercial Banks

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<th>No.</th>
<th>Abbreviation</th>
<th>Financial Institutions / Organisation</th>
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<tr>
<td>1</td>
<td>Affin</td>
<td>Affin Bank (formerly known as Pewira Affin Bank)</td>
</tr>
<tr>
<td>2</td>
<td>Alliance</td>
<td>Alliance Bank Berhad (formerly known as Multi-Purpose Bank Berhad)</td>
</tr>
<tr>
<td>3</td>
<td>AMBB</td>
<td>Arab Malaysian Bank Berhad</td>
</tr>
<tr>
<td>4</td>
<td>BBMB</td>
<td>Bank Bumiputra Malaysia Berhad</td>
</tr>
<tr>
<td>5</td>
<td>BNM</td>
<td>Bank Negara Malaysia</td>
</tr>
<tr>
<td>6</td>
<td>BOC</td>
<td>Bank of Commerce</td>
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<tr>
<td>7</td>
<td>BCB</td>
<td>Bumiputra-Commerce Bank Berhad</td>
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<tr>
<td>8</td>
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<td>Ban Hin Lee Bank Berhad</td>
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<td>Utama</td>
<td>Bank Utama (M) Berhad</td>
</tr>
<tr>
<td>10</td>
<td>EON</td>
<td>EON Bank Berhad</td>
</tr>
<tr>
<td>11</td>
<td>HHB</td>
<td>Hock Hua Bank Berhad</td>
</tr>
<tr>
<td>12</td>
<td>HLB</td>
<td>Hong Leong Bank Berhad</td>
</tr>
<tr>
<td>13</td>
<td>KYB</td>
<td>Kwong Yik Bank Berhad</td>
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<td>14</td>
<td>MBB</td>
<td>Maybank Berhad</td>
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<td>15</td>
<td>MPBB</td>
<td>Multi-Purpose Bank Berhad</td>
</tr>
<tr>
<td>16</td>
<td>OBB</td>
<td>Oriental Bank Berhad</td>
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<td>17</td>
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<tr>
<td>18</td>
<td>PAB</td>
<td>Phileo Allied Bank Berhad</td>
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<td>19</td>
<td>PBB</td>
<td>Public Bank Berhad</td>
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<tr>
<td>20</td>
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<tr>
<td>21</td>
<td>Sabah</td>
<td>Sabah Bank</td>
</tr>
<tr>
<td>22</td>
<td>Sime</td>
<td>Sime Bank</td>
</tr>
<tr>
<td>23</td>
<td>Southern</td>
<td>Southern Bank Berhad</td>
</tr>
<tr>
<td>24</td>
<td>WTB</td>
<td>Wah Tat Bank</td>
</tr>
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This paper employs a non-parametric method to arrive at the efficient inconsistent level (1996), the efficiency of the sample banks. However, impressively in terms of states. There are still those who outperformed their peers in the inputs and outputs.
Abstract

This paper empirically investigates the technical efficiency in Malaysian Domestic Commercial Banks in both scenarios: pre and post merger period. A non-parametric method of Data Envelopment Analysis (DEA) has been used to arrive at the efficiency scores. Banks in the sample were generally found to have inconsistent level of efficiency for the period under study. For pre-merger period (1996), the efficiency level is observed to be ranging from 0.72 – 1.00 for the sample banks. However, these efficiency levels dipped in 1998 largely due to economic crisis. In 2000, it is noted that some sample banks performed impressively in term of their efficiency index as compared to their previous states. There are seven (7) out of the ten (10) consolidated banking group have outperformed their former states for the period under study. In addition, this study has important implications which will lead to formulation of strategic planning for the banks as it pinpoints the sources of inefficiency in relation to its inputs and outputs of individual newly merged entity.

1.0 Introduction

1.1 Background

In 1997, Malaysia faced a financial crisis, which caused analysts around the world to wonder about the response to the implementation of capital controls and the recovery after its implementation. However, the devaluation of the Malaysian currency led to a significant response to the implementation of capital controls and the recovery after its implementation. The implementation of capital controls and the recovery after its implementation led to the implementation of capital controls and the recovery after its implementation. The implementation of capital controls and the recovery after its implementation led to the implementation of capital controls and the recovery after its implementation.
A Study On Relative Efficiency Of The Domestic Commercial Banks In Both Pre and Post Merger In The Face Of Globalization And Financial Liberalization Era

1.0 Introduction

1.1 Background Of The Study

In 1997, Malaysia economy plunged into a recession and its 10-year growth spree had ground to a halt. The severe impact of the Asian financial crisis on Malaysia has raised some doubts amongst policy makers about the benefits of globalization and liberalization. For analysts around the world, the reversal in Malaysia’s participation in the globalization and liberalization process was de facto as reflected by her response to the recent crisis, namely the imposition of exchange rate and capital controls. Today, Malaysia is showing some signs of economic recovery after having undertaken a series of steps to rekindle growth. However, the debate on globalization and liberalization still rages on.

With the impending liberalization and globalization, our Bank Negara Malaysia (BNM) has advocated amongst other, all Malaysia Commercial Banks to be merged or consolidated into ten (10) anchor banks in order to stay competitive and prepared for the fierce competition against its foreign counterparts in the globalised and liberalized era which is set to gain momentum under the aegis of the ASEAN Free Trade Area (“AFTA”) and the World Trade Organization (“WTO”). The consolidation program, with its objective of improving the profitability and efficiency of the local financial institutions has given rise to many questions. For instance, what is the efficiency level of the domestic
banks measured by their financial performance as compared to the recent merged local financial institutions? What are the effects of the financial crisis on the relative efficiency of the local banking institutions? This study attempts to answer these questions by utilizing frontier linear programming technique to measure the relative efficiency of the domestic banks in the pre and post merger period.

1.2 Problem Statement

In the face of globalization and liberalization, our local financial institutions are constantly pressured from external influences to beef up its existing financial strengths in order to gain competitive advantage among its foreign counterparts in the foreseeable future.

In light of this, the writer will focus to investigate the efficiency of the recent merged financial entities in comparison to their former states.

1.3 The Objectives Of The Study

a) To provide an overview of the new banking environment in the impending globalization and liberalization era of the Malaysian financial markets when the AFTA comes into effect in the year 2003.

b) To determine relative efficiency of the Domestic Malaysian Financial Institutions in both pre and post merger period of all ten (10) consolidated Local Commercial Banks.

1.4 The Hypothesis

For the following,

i) The funds appropriated

ii) The Malaysian banks

1.5 Significance of the Study

Merger of the funds appropriated for the domestic Malaysian banks against their former states.

However, this study is to gauge the appropriate
1.4 The Hypotheses

For the purpose of this study, the writer intends to find solutions to the following:

i) To carry out comparative study on the efficiency of domestic financial institutions on pre and post merger period.

ii) What contributes to the local financial institutions to embark on merger and acquisition exercise?

1.5 Significance Of Study And its Limitations

Merger and acquisition activities of local financial institutions within Malaysia has been increasingly unavoidable due to their limited capital funds and infrastructure in comparison to its foreign counterparts. With the external invisible forces derive from globalization and liberalization, Malaysian merged entities will indefinitely become more prepared to face the challenge from their foreign counterparts. The focus of the study is to gauge whether the local merged entities will outperform their former states.

However, one obvious limitation of the study is that most of the merged financial institutions are at its infancy stage (i.e. operating for a few years) and hence the measurement of their efficiency as the yardstick against their former states may be inconclusive. As Lubtakin (1987) pointed out that there has been considerable debate to the most appropriate and accurate way in which to assess merger gains, both in
terms of the indices used and the appropriate time span over which judge performance. Notwithstanding this, when the merged entities reach their maturity, the reliability of the measurement will be more evident. This study will eventually constitute as part of the experimenting work for future research purposes.

1.6 Overview Of Commercial Banking In Malaysia

In Malaysia, commercial banks constitute the largest and most important group of all financial institutions. As at June 30, 2000, there are 33 commercial banks in Malaysia comprising of 20 domestic banks and 13 locally incorporated foreign banks with over 1,750 branches spreading across the country. There are approximately 68,014 staff employed by the commercial banks in the country.

Prior to 1959, the operations of the commercial banks in Malaysia came within the ambit of the Companies Ordinance, 1948. With the establishment of BNM in 1959, commercial banks came under the BNM’s supervision through the Banking Ordinance 1958 (replaced by Banking Act, 1973). In October 1989, the Banking and Financial Institutions Act 1989 (BAFIA) combined the Banking Act, 1973 and Finance Companies Act, 1969 under a single legislation. With the introduction of BAFIA, all financial institutions supervised by BNM including the discount houses and money and foreign exchange brokers now come under one common legal supervisory framework.

Malaysia’s banking system has evolved significantly from a simple trade oriented system to one offering services such as retail banking services,

trade financing, services, custody facilities. Mean-
Brokers trade financing facilities, treasury services, cross border payment services, custody services, foreign exchange and current account facilities. Measures and reforms have been undertaken by BNM to create a sound and efficient banking system to meet the growing needs of the economy.

However, the banking system came under tremendous strain during the recent regional financial crisis of 1997/1998. The economy contracted significantly as a result of the depreciation in the exchange rate, reduction in domestic and external demand and the decline in the stock market prices. To strengthen the banking sector, the Government and BNM adopted a four-pronged approach through a merger programme, the setting-up of an asset management company (Pengurusan Danaharta Nasional Berhad), a special purpose vehicle to recapitalise the banking institutions (Danamodal Nasional Berhad) and the Corporate Debt Restructuring Committee (CDRC). In addition to the measures introduced by the Government to restructure the banking sector, adjustment were also made to the existing policies to reduce the burden on the banks and to allow them to refocus on their core lending activities in order to support the recovery process.

On September 1, 1998, BNM introduced selective exchange controls to control the internationalization of the ringgit and to stabilize short term capital flows, various monetary measures were also introduced to improve the liquidity flows in the banking system. The new liquidity framework introduced in July 1998 replaced the liquid asset ratio requirement for banking institutions. Under the new framework, banking institutions are required to access their liquidity needs by matching their
short-term liquidity requirements arising from maturing obligations with their maturing assets.

Growing competition and pressures from the external front to further liberalise the banking sector has shown that the domestic banking institutions can no longer remain protected. The financial liberalization envisaged under the General Agreement on Trade in Services (GATS) framework to gradually remove barriers to entry and access among the ASEAN countries and the world at large, has demonstrated the necessity for a consolidation and rationalization exercise for the domestic banking sector. In February 2000, BNM announced the consolidation exercise of the domestic banking institutions into ten banking groups.

The advances in technology has contributed greatly to the modernisation of banking services and have changed the way financial services are carried out. The electronic payment mechanisms available in today’s banking institutions are credit cards, debit cards, store value cards, ATMs, telebanking, desk-top banking and Internet banking. The image technology for cheque clearing, SPICK or the National Automated Cheque Clearing system, was introduced in November 1997, on a phased approach, saw an improvement in dayholds for outstation cheques and the extension of coverage for the local zones. There was also the launch of RENTAS, a real time gross settlement system for high volume interbank funds and securities transactions. The Interbank Giro Payment (IBG) system was implemented to facilitate electronic interbank payments for third party transactions of less than RM50,000 with the initial participation of 5 banks. The industry also saw the launch of the
electronic share application (ESA) where initial public offerings could be done electronically.

The challenge facing the banks now is not in their ability to do business but by their innovations in the products and services they can offer. With the wide use of the internet in e-commerce, banking via the internet will be another avenue for the banks to deliver and cross-sell their financial products and services.
2.0 Literature Review

Over the past 50 years, a voluminous set of banking studies has emerged. The studies covered a wide variety of issues ranging from ratio analysis on balance sheet items, quantitative analysis on bank behaviour and regulation, real output and productivity, bank stock pricing, analysis of economies of scale in cost and production, and bank efficiency. In efficiency studies, two different methodologies were usually employed: the parametric and non-parametric approaches. An extensive discussion of the two approaches can be found in Forsund et al (1980). This study on Malaysian bank efficiency focuses on the non-parametric methodology by using the Data Envelopment Analysis (DEA) technique.

One of the early attempts in applying the DEA approach in banking efficiency studies was by Sherman and Gold (1985). Many researchers have since carried out similar studies. All these researchers have been extensively discussed in an article by Thananssoulis (1999). One important issue in DEA applications is the definition of input and output. In general, there are two approaches that can be followed – the production approach and the intermediation approach.

In the production approach, banks are identified as producers of loan and deposit services by inputting operating resources such as capital and labour. In this approach, the total costs are exclusive of interest expenses in input while the output is mostly measured by the number of accounts serviced as opposed to the money values of these accounts. On the other hand, the intermediation approach views interest expenses and production costs as input because as intermediaries, the main business of banks is to transform deposits into loans and accounts are essentially a means of intermediary.

Most of the efficiency studies of the past have focused on the intermediation approach while the production approach has been underutilized. In the intermediation approach, the number of loans and deposits are usually considered as inputs and the total costs of intermediation are considered as output. The output in this case is only one. In the production approach, on the other hand, the main business of banks is to transform deposits into loans. Most of the earlier studies of the production approach have used the DEA approach to measure bank efficiency. In both approaches, the main issue is determining the definition of input and output.

2.1 Production Approach

Previous cost data used in the studies are usually derived from the chosen approach mainly due to the nature of the data. For example, Sherman and Gold (1985) measure the production cost of loan transactions by adding supply costs and the loan issuance costs. In contrast, the intermediation approach views interest expenses and production costs as input because as intermediaries, the main business of
banks is to borrow funds from depositors and intermediate these funds into loans and other assets. It measures the output by the dollar value of accounts and considers both operating and interest costs.

Most of the intermediation-approach literature include interest costs in efficiency studies, based on the assumption that they are an integral part of the process of financial technology by which deposits are transformed into loans. However, according to Aly et al (1990), interest expenses can be excluded from the total costs because interest costs are pertinent in measuring efficiency. These arguments suggest that there are disagreements on certain aspects in each approach, with further divergence on the calculation methods.

2.1 Production Approach Literature

Previous consensus shows that the efficiency estimations are sensitive to the chosen technique. The contradictions in most of the findings are mainly due to different modelling input and output assumptions. For example, Sherman and Gold (1985) used the production approach to measure the output efficiency of a branch unit in terms of the number of loan transactions and deposit accounts with labour, office space and supply costs as inputs. Their results indicate that most small banks are inefficient. They concluded that the DEA approach is limited in its ability to locate the relatively inefficient units. However, it is accepted that for the DEA analysis and result, it is not necessary to find inefficient units.
Ferrier and Lovell (1990) also applied the production approach to estimate the efficiency of 575 units of US banks in 1984. They used labour, occupancy costs, and expenditure on materials as inputs, and various deposits and loans as outputs. They found that there was a 24% overall inefficiency in branching states and 19% inefficiency in unit banking states. They study concluded that the technical efficiency is greater than overall efficiency, but no clear pattern emerged from the size analysis.

Wheelock and Wilson (1995a) compared both the production and intermediation approach in examining four aspects of production efficiency including the technical, scale, allocative and overall efficiency. They found that on average, the technical efficiency and overall efficiency are higher when applying the intermediation approach. Mean allocative efficiency, however, is similar under both approaches.

2.2 Intermediation Approach Literature

A survey by Charnes et al (1990) on the DEA methodology used data from 48 US commercial banks for the period 1980 to 1985. They used newly developed cone-ratio DEA models via the intermediation approach, which included operating and interest expenses, provision and actual loan losses as input, and net loans, operating, interest and non-interest income as output. In their study of the cone-ratio DEA models, they found that the new models were able to better capture the inefficient unit than the ordinary DEA.
approach to 1984. They used labour as inputs, and there was a 24% efficiency in unit production and provision and non-interest expenditure as input variables to produce five different outputs: real estate loans, commercial and industrial loans, consumer loans, other loans and different demand deposits. Their results indicate that the overall and technical efficiency of US banks is very low, and they are negatively related to product diversity but positively related to the degree of urbanization. The technical inefficiency is mainly due to the operation of inputs that are not scale-related. In addition, they found that there was no significant difference in efficiency between branch banks and non-branch banks.

Using the same approach, Aly et al (1990) included the interest costs together with the number of labour, book value capital and loanable fund expenditure as input variables to produce five different outputs: real estate loans, commercial and industrial loans, consumer loans, other loans and different demand deposits. Their results indicate that the overall and technical efficiency of US banks is very low, and they are negatively related to product diversity but positively related to the degree of urbanization. The technical inefficiency is mainly due to the operation of inputs that are not scale-related. In addition, they found that there was no significant difference in efficiency between branch banks and non-branch banks.

The study by Berger and Humphrey (1991) also applied the intermediation approach. Their results indicate that the observed cost differentials among banks primarily reflect firm-specific inefficiencies. They argue that most inefficiency is operational. Involving overuse of labour and physical capital rather than the financial input.

A general study by Yue (1992) used a variant of the intermediation approach to analyse the efficiency of 60 Missouri banks. He included interest and non-interest expenses, transaction and non-transaction deposits as input, and total loans as an output. Of the 60 banks, only 14 obtained perfect score. From the study, Yue suggested that the DEA technique could provide crucial information for improving the efficiency of individual banks.

Wheelock and Wilson (1995b), in following the intermediation approach, used saving and time deposits, borrowed funds, capital and labour as
input to produce demand deposits, and earning assets (bonds and loans) as output. The study was designed mainly to examine the reason for bank failures in the US during the 1920s. They found that weakly-capitalized banks holding minimum reserves and relying heavily on short-term borrowed funds had a higher probability of failure relative to their conservative competitors.

In their study, Miler and Noulas (1996) used total transaction and non-transaction deposits, interest expenses and non-interest expenses as inputs, while the investment, interest income, non-interest income, and three types of loans (consumer, commercial and industrial, and real estate loans) were used as outputs. Their study covered 201 banks for the period of 1984 to 1990. The DEA results showed a high level of efficiency among the banks studied. They argued that these banks might have been forced to operate more efficiently due to strong market competition since the 1980s. Additionally, larger and more profitable banks had lower pure technical inefficiency, and market power did not significantly affect efficiency.

Using the intermediation approach, Chen (1998) tried to measure the relative operating efficiency of public and private operated banks in Taiwan. He included staff, assets and interest expenses as inputs, and loan services portfolio investment, interest income and non-interest income as outputs. The results indicate that there are significant differences in efficiency between public and privately-operated banks, and that efficiency gains from privatization may be substantial.