Financial Performance of the Malaysian Banking Industry: Domestic vs Foreign Banks

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ABSTRACT

The aim of this study is to examine the performance of the Malaysian's local banks and foreign banks, and compare their profitability in the financial sector. Profitability of commercial banks can be influenced by several factors, such as liquidity, credit, capital, operating expenses, and the size of the banks. Measuring the profitability in term of Return on Asset (ROA) and Return on Equity (ROE) for a panel of local and foreign banks can give a general idea about the effects of these factors to banking system. Some previous studies have been carried out in the same field such as the work of Sufian (2009) that investigates the factors influencing the profitability of the Malaysian banking industry.

For this analysis, a panel regression methodology will be applied to investigate the performance of these commercial banks within Malaysian's banking system empirically. Financial ratios are collected for a total of 8 (eight) local banks and 8 (eight) foreign banks, covering a period between 2005 and 2011. In addition, a comparative study will be carried out to show possible difference between the two categories of bank ownership from the perspective of performance and profitability.

Keywords: Profitability, Asset-Liability management, Banking, Malaysia Bank Ownership.

ÖZ

Bu çalışma, Malezya yerel ve yabancı bankaların finansal performanslarının karşılaştırılmasını amaçlamaktadır. Ticari bankaların karlılıkları bazı nedenlerden etkilenebilmektedir. Bu faktöreleri likidite, kredi, işletim harcamaları, banka büyüklükleri diye sıralayabiliriz. Aktif getiri (ROA) ve sermaye üzerinden getiri(ROE),

Baz rasyolarını alarak bankacılık sistemine bu faktörlerin ne yönde etki ettiği araştırlımıştır.. Daha önce yaplılmış çalışmlarda örneğin Sufian(2009) banka karlılıkların etkileyen faktörler üzerine çalışmalar yapmıştır.

Analizde panel regresyon metodu kullanılarak ticari bankalrın ampirik olarak performansları incelenmiştir. Çalışmada 8 yerel 8 de yabancı banka kullanılmış bankalar sahiplik yapısı dikkate alınarak gloabal kriz ve performansları yönünde bulgulara ulaşılmıştır.

Anahtar kelimeler: Karlılık, Aktif-pasif yönetimi, bankacılık, Malezya Bankacılık sahiplik yapısı

To

My Family and the Guinean Community in TRNC

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LIST OF ABBREVIATIONS

BNM……………………………………………..……….…Bank Negara Malaysia

ROA………………………………………………………..……Return on Asset

ROE………………………………………………….…………Return on Equity

CAR……………………………………………….……….…….Capital Adequacy

ASQ……………………………………………………….….…Asset Quality

LQR…………………………………………………...………..Liquidity Ratio

EAR………………………………………………………….....Earnings

LSIZE……………………………………….…...Natural Logarithm of total asset

E-VIEWS…………………………………………………...Econometric views

 LLC………………………………………………….…Levin, Lin and Chu

OLS…………………………………………………..Ordinary Least Square

VAR Model………………………………….……….…Vector Autaregression Model

Chapter 1

INTRODUCTION

1.1 Historical Background

The financial institution's history is relatively close to that of the money, but trading started probably before the money has been invented. Therefore, the first form of transaction consisted of deposits of grain, goods and precious metal like gold that had to be kept in the Temples and other places that were considered as the ideal places for storing good items. The role played by financial institution is so important than that we cannot think about life without banks. The innovation and modernization of the banking sectors nowadays have made the banking system more secure and more comfortable for their customers, so that they can even do transactions through the internet and even their mobile phones. Commercial Banks as financial intermediaries accept deposits from savers and give loans to borrowers for investment and the spread between the interest rate paid to depositors and that charged to borrower is the profit or the interest income to the banks. They also provide some trading facilities like letter of credit, shipping guarantee, Banker's acceptance, and so on. Faezah (2007) mentioned in his study that commercial banks have started being under the Central Bank of Malaysia, Bank Negara Malaysia (BNM) control since 1959, two years after the Malaysian independence. With reference to the BNM (2012), Malaysian licensed financial institution has 25 commercial banks (constituted by 9 domestics banks and 16 foreign banks), 17 Islamic

banks (constituted by 11 domestic banks and 6 foreign owned-banks), 5 International Islamic banks (all foreign owned), 15 investment banks (all domestic owned-banks), and 2 other financial institutions (also domestically owned-banks). According to the IMF (2004) report, over 90 percent of share of Malaysian banking in 1957 were held by foreign banks, but due to the some government policies against them, these percentages declined to 16.7 by 1997.

In the last 3 decades, Malaysian banking sector has faced several financial crisis such as that of the period 1985-1986 in which some financial institutions went to bankruptcy because of default on loans, and 1987-1989 which are related to a high level of nonperforming loans of financial companies and small banks, in contrast, 1997-1998, and 2008 are the effect of the Asian crisis and Global financial crisis respectively.

The Global financial crisis 2008 did not have its origin in Asia, but started in the United State, due to the lack of control of its financial downturn and transmitted to all financial institutions, Khoon and Mah-Hui (2010) studied the impact of the global financial crisis on the Malaysian economy which stated that the negative effect started in the last 3 months of 2008.

1.2 Aim of Study

A similar study was done by Sufian (2009) that examined the factors influencing bank profitability in developing Economy in the case of Malaysia, for the period 2000-2004 including 23 commercial banks (constituted by 10 domestically owned and 13 foreign owned banks).

The present study aims to investigate the factors influencing bank profitability in Malaysia for the period 2005-2011 covering 16 major commercial banks (8 locally owned and 8 foreign owned). In order to examine these selected commercial banks profitability, we will use Return on Asset (ROA) and Return on Equity (ROE) which are considered as dependent variables. In the other hand, Capital Adequacy, Asset Quality, Management Efficiency, Liquidity and the Bank Size (Total Asset) are the independent variables.

1.3 Research to find out

The present study examines the profitability of 16 major commercial banks in Malaysia and the factors influencing their performance for the period 2005-2011. However, in order to figure out that, a number of questions have to be answered. Do local banks perform better than foreign banks in the above period or is it the inverse? During a period of financial crisis, which of the two kinds of owner banks is able to better deal with the crisis effect and perform more? If there is any difference between local and foreign banks performance, what is the reason? The response to these questions will be useful to Malaysian banking management, as well as to policies makers, in order to improve the financial institution performance.

1.4 Structure of the Thesis

From now till the end, this thesis will have the following structure: section 2 gives an overview of the Malaysian banking sector, section 3 focuses on the literature review related to previous studies, section 4 presents the selected data and methodology, section 5 explains the finding results, and at the end, section 6 will be the conclusion and suggestion for further study.

Chapter 2

OVERVIEW OF MALAYSIAN BANKING SECTOR

Malaysian financial system has started since before its independence in 1957, however, in those periods, foreign banks were the only financial institution operating in the country. In contrast, domestic banks[1] waited until 1959 to start with the implementation of the Central Bank of Malaysia (Matthews and Ismail 2006). According to the BNM[2], Malaysian financial institution is constituted by 25 commercial banks (9 domestically owned and 16 foreign owned banks), 16 Islamic banks, 5 international Islamic banks, 15 investment banks and 2 other financial institutions. Sufian (2009) pointed out in his study that, 10 domestic and 13 foreign banks constituted the commercial banks in 2004. Said and Tumin (2011) reported in their study that by 2008, Malaysian commercial banks were constituted by 9 local and13 foreign banks. The decline of the number of domestic banks is a result of banks merger in which they expect an improvement in their performance. For instance, the last bank merger is that between EON Bank and Hong Leong Bank on May 2011 (Ong, Teo, and Teh November 2011). Malaysian Financial institutions have experienced several crises since 1959, such as 1985-1986 and 1987-1989 that were not brought from outside of the Malaysian banking system, in contrast, the Asian crisis 1997-1998, the dot.com bubble in 2001 and the Global Financial crisis in 2008 were brought from outside the country. In overall crises, Malaysian commercial

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[1] Domestic banks: public and private banks that are under the BNM control.
[2] List of licensed Banking institutions in Malaysia:
http://www.bnm.gov.my/microsites/financial/0201_fi_list.htm

banks suffered more deeply from, firstly, the Asian crisis which started in Thailand and the worst crisis in the Malaysian banking history (Khoon and Hui 2010), and secondly, the Global Financial crises in 2008 for which this study will focus in more detail.

2.1 The 2008 Global crises

The Global financial crises had its origin in the United State, which was a result of inequality and uncontrolled lending. Furthermore, from many years before 2008, financial institutions were giving mortgages to people who were relying on buying houses as that is considered as a good opportunity of investment, because of the expectation on their rising prices and also collateral in the case of default in the lenders point of view. Though, banks were lending as much as they could even borrow from other financial institutions in order to lend more, unfortunately, the default in mortgage made the house prices to fall and the financial institutions started going bankruptcy and it was the beginning of the crisis. The American's economy started being hurt by the effect of the crisis by January 2008, followed by other developed countries like China, Japan and the European countries[3].

As Malaysia occupies the category of the developing countries, and also was relying heavy on trading with the US financial sectors and other developed countries within Asia. Thus, the country was affected by the contagious and the negative impact of the Global financial crisis to the Malaysian's economy began in the last three months of 2008. Financial institutions suffered mostly from the stock market that fell down approximately to 50% compare to the previous year (KHOON and MAH-HUI 2010), the other financial activities were not much affected by the crisis. However, that was a

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[3] http://www.wikinvest.com/concept/2008_Financial_Crisis

result of some positive changes made by the Malaysian government to the banking sectors after the Asian Financial crisis. Malaysia's export[4] constituted the major sources of the country's income, and the sector was the most impacted by the crisis due to the lack of external demand, resulting to a fall of 27.8% of export by January 2009[5]. The consequences of this fall had an effect in most of the Malaysian sectors, for instance, the gross domestic product(GDP) growth fell by 6.2% at the beginning of the year 2009 compare to 0.1% at the end of 2008 (UNDP)[6]. It is important to note that the unemployment level was also very high which impacted negatively the consumer expenditures.

The picture given by the table 2.1 is supported by previous studies like the one that have been done by Matthews and Ismael (2006), saying that foreign commercial banks started operating in Malaysia before its independence (1957), however, the Central Bank and domestic banks waited two years after it to be established. It is also shown in this table that on average foreign banks could be larger than domestic in term of Assets size; and Malaysia has higher number of foreign commercial Banks compare to the domestics.

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[4] Before the 2008 global crisis, Malaysia's exports were 81% of manufacture for which 66% of electrical and electronic merchandise.
[5] http://www.adbi.org/working-paper/2009/08/26/3275.malay sia.gfc.impact.response.rebalancing/impact.of.the.crisis.on.the.malaysian.economy/
[6] A join report by the Institute of Strategic and International Study (ISIS) Malaysia commissioned by the United Nations Development Programme. http://www.isis.org.my/index.php?option=com_content&view=article&id=456:curr&catid=92:recent-papers&Itemid=168

Table 2.1**:** List of licensed Commercial Bank in Malaysia[7]:

No	Banks	Ownership	Date of Establish	Total Asset (USD Billion)
1	Bank Negara Malaysia	Central Bank	1959	1209.92
2	JP Morgan	Foreign	1964	2,459.13
3	HSBC	Foreign	1994	2,117.61
4	Bank of China Berhad	Foreign	1991	2,042.09
5	Bangkok Bank Berhad	Foreign	1959	970.39
6	Malayan Banking Berhad (Maybank)	Dometic	1960	110.3
7	CIMB Bank Berhad	Domestic	1965	88.3
8	Public Bank	Domestic	1972	74.2
9	Hong Leong Bank + Eon Bank	Domestic	2011	43.2
10	AmBank	Domestic	1975	42.4
11	RHB Bank	Domestic	1966	31.6
12	Hong Long Bank	Domestic	1968	27.8
13	Royal Bank of Scotland Berhad	Foreign	1964	22.0 9
14	OCBC Bank Berhad	Foreign	1912	21.38
15	Mizuho Corporate Bank B	Foreign	1973	20.93
16	United Overseas Bank Berhad	Foreign	1993	18.36
17	CitiBank Berhad	Foreign	1994	16.39
18	Standard Chartered Bank	Foreign	1875	15.85
19	Affin Bank	Domestic	2000	15.4
20	Eon Bank	Domestic	1960	15.2

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[7] http://www.bnm.gov.my/index.php?ch=13&cat=banking&type=CB&fund=0&cu=0

21	Allance Bank	Domestic	2004	10.4
23	Deutsche Bank (Malaysia)	Foreign	1967	4.074
24	BANKOF Tokyo-Mitsubishi	Foreign	1959	3.12
25	Bank of Nova Scotia Berhard	Foreign	1973	3.9

Sources: the web side of each bank and annual reports

In contrast to what we have seen in the first table, it is important to note that in the Table 2.2, domestic Islamic banks have larger size than foreign and also they are higher in number.

Table 2.2: List of licensed Islamic Malaysian Banks[8]

No	Banks	Owner	Date of Establish	Asset Size($billion)
1	CIMB Islamic Bank Berhad	Domestic	2003	70.63
2	AmIslamic Bank Berhad	Domestic	2006	37.83
3	Maybank Islamic Berhad	Domestic	1960	21.97
4	HSBC Amanah Berhad	Foreign	1994	21.25
5	Bank Islamic Malaysia Berhad	Domestic	1983	10.12
6	RHB Islamic Bank Berhad	Domestic	2005	7.54
7	Bank Muamalat Malaysia Berhad	Domestic	1999	6.06
8	Hong Leong Islamic Bank Berhad	Domestic	2005	4.06
9	Affin Islamic Bank Berhad	Domestic	1993	3.51
10	Kuwait Finance House berhad	Foreign	2005	3.38
11	Alliance Islamic Bank Berhad	Domestic	1994	2.07
12	Al Rajhi Islamic Bank Berhad	Foreign	2006	1.97
13	OCBC Al-Amin Bank Berhad	Foreign	2008	1.58
14	Standard Chartered Saadiq Berhad	Foreign	2008	1.57
15	Public Islmic Bank Berhad	Domestic	2004	1.53
16	Asian Finance Bank Berhad	Foreign	2007	0.75

Sources: the web side of each bank and annual reports.

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[8] http://www.bnm.gov.my/index.php?ch=13&cat=banking&type=CB&fund=0&cu=0

Chapter 3

LITERATURE REVIEW

It is important to recognize that several studies have been done in order to examine the factors influencing bank profitability, about the most popular, we have the primary study done by Short (1979), followed by Bourke (1989) who gave more detail to the relevant variables. The improvement of these studies has led to more specific examination of bank profitability such as the following focusing in a particular country or region: Molyneux and Seth (1996), Said and Tumin (2011), Sufian (2009), Davydenko (2010), Matthewsand Ismail (2005), Flamini, McDonald and Schumacher (2009), B Nimalathasan (2008), Gul et al (2011), Gerlach,Peng and Shu (2005), Varadi, V. Kumar, Mavaluri, P. Kumar and Boppana, Nagarjuna (2006).

Molyneux and Seth (1996) examine foreign bank profitability and commercial credit extension for the period 1987-1991 in the USA and they find out that the capital strength and demand on loan have positive effect on the foreign bank profitability but unfortunately unrelated to an improvement in commercial lending. Furthermore, in order to generate higher profitability, a foreign bank in USA should deal with a considerable capital, in other words with a certain higher level of capital compare to other financial institutions.

Said and Tumin (2011) analyze the relationship between performance and financial ratios of commercial banks in Malaysia and China by using some internal factors, their results suggest that credit risk and operating expenses affect negatively the performance of banks in both countries in the case of return on asset (ROA), however, this is different in the case of return on equity (ROE). Therefore, in this case, credit risk and operating expenses have respectively a negative impact on Malaysian and Chinese banks performance. In addition, this study shows that bank performance in both countries is not affected by bank size and liquidity.

In the case of Malaysia which is more related to this study, Sufian (2009) analyzes the factors influencing bank profitability in Malaysia covering the period 2000-2004 and focusing specially to foreign and domestic commercial banks. He comes up with the results that there is a negative relationship between credit risk and loan concentrated for Malaysian banks. Therefore, the higher the credit risks of a bank, the more its exposure to loan payment which will result consequently in a low level of profitability. In contrast, he finds that capital size, income from non-interest sources and operating expenses have a positive effect on Malaysian banking profitability. Furthermore, well capitalized bank will generate higher profitability due to lower cost of borrowing but on the contrary is possible otherwise. The results show also, although the negative relationship between economic growth and profitability in the Malaysian banks, high inflation rate affect them positively.

Analyzing efficiency and productivity of Malaysian domestic and foreign commercial banks from 1994 till 2000, Matthews and Ismail (2005) figure out that efficiency is

related to size instead of profitability and productivity is based on technical change. They conclude that foreign banks are in a better position than domestic banks in the case of efficiency.

In addition, another publication done by the same author (Sufian 2010), which analyzes the effect of regulation and supervision in Malaysian commercial banks' profitability for the period 1992-2003. The results point out a negative relationship between the regulations and supervisions and the banks' profitability. Thus the higher the regulation and/or supervision in the Malaysian banking system, the lower the profitability the banks will generate from their operations. On the other hand, the economic growth has a positive effect on Malaysian banks' profitability and also inflation is positively related to profitability, meaning that the level of inflation was anticipated by the banking sector.

Flamini, McDonald and Schumacher (2009) analyze the determinants of commercial bank profitability in Sub-Saharan Africa (SSA) by testing a sample of 389 banks in 41 SSA countries. The results of this study show that private and foreign banks are doing better than public and local banks respectively in term of profitability. It is also mentioned that bank size, activity diversification and private ownership are positively related to the banking profitability in terms of return on asset. In contrast, credit risk and macroeconomic variables have a negative impact on bank profitability.

B.imalathasan (2008) uses CAMELS rating in order to do a comparative study of financial performance of Banking Sector in Bangladesh which is categorized in four parties: Nationalized, Public, Private and Foreign commercial banks. According to the

result of the analysis that is done on 48 banks covering the period of 1999-2006, there are 3 strong banks, 31 satisfactory, 7 fair, and 2 unsatisfactory banks.

Gul et at (2011) analyze the effect of bank-specific and macroeconomic factors on profitability in the case of Pakistan. Focusing on 15 commercial banks, covering a period of 2005-2009; and using Pooled Ordinary Least Squares, they find that there is a positive relationship between both internal and external factors and profitability, meaning the higher the Equity capital, economic growth and so on, the more profitable the banks are.

Gerlach, Peng and Shu (2005) analyze the macroeconomic conditions and banking performance in Hong Kong by using a panel data for 29 banks covering the period of 1994-2002. They use only two ratios of profitability determinant that are Net Interest Margin (NIM) and Non-Performing Loans (NPLS) because they couldn't get enough data due to some confidentiality. For instance, they don't know the Asset size of individual banks and they also don't have any information about banks ownership. The finding of the study is that changes in macroeconomic conditions affect banks' performance and financial health.

In order to examine Efficiency of Indian banks, Varadi, V. Kumar, P. Kumar and Boppna, Nagarjuna (2006) have used four indicators which are profitability, productivity, asset quality and financial management for public, private and foreign banks for a period of 1999-2003. The results of the study show that public banks have a high efficiency according to both above ratios, whereas private banks have a very high

inefficiency, but foreign banks are in a better situation compare to private in term of efficiency.

Chapter4

DATA AND METHODOLOGY

4.1 Data

The data that are used in this study are firstly collected from the balance sheet and income statement of each bank that are provided throughout their financial annual reports for the concerning period, secondly put in excel spreadsheet in order to calculate the ratios needed for the empirical study. It is important to underline that the data are annual data. Instead of analyzing all the local commercial banks (8)[9], this study will focus on the seven local banks; the reason is simply the problem that was faced in the collecting data.

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[9] http://www.bnm.gov.my/index.php?ch=13&cat=banking&type=CB&fund=0&cu=0

Table 4.1: Selected commercial banks and Ownerships

No	Name of Banks	Ownerships
1	Affin Bank Berhad	Local Bank(domestic)
2	Alliance Bank Malaysia Berhad	Local Bank
3	CIMB Bank Berhad	Local Bank
4	Hong Leong Bank Berhad	Local bank
5	Malayan Banking Berhad	Local Bank
6	Public Bank Berhad	Local Bank
7	RHB Bank Berhad	Local Bank
8	Bank of China (Malaysia) Berhad	Foreign Bank
9	Citibank Berhad	Foreign Bank
10	Deutsche Bank (Malaysia) Berhad	Foreign Bank
11	HSBC Bank Malaysia Berhad	Foreign Bank
12	OCBC Bank (Malaysia) Berhad	Foreign Bank
13	Standard Charteredt Bank Malaysia Berhad	Foreign Bank
14	United Overseas Bank (Malaysia) Berhad	Foreign Bank

4.2 The Variables

Referring to the previous studies, this thesis will employ two categories of variables in order to examine the profitability of the selected commercial banks. These categories are classified as dependent variables and independent variables. In the case of this study, seven (7) variables have been chosen: two dependent and five independent.

Table 4.2: The variables measures and their notation

Bank-Specific	Variables	Measures	Notation
Dependent **Variables**	Profitability	Return on Assets(ROA)=Net Income/Total Asset	ROA
		Return on Equity=Net Income/Total Equity	ROE
Independent **Variables**	Capital Adequacy	Equity/Total Asset	CAR
	Asset Quality	Total Loan, Advances and Financing/Total Asset	ASQ
	Earnings	Interest Income/Interest Expense	EAR
	Liquidity	Liquidity Asset/Total Asset	LQR
	Bank Size	Natural logarithm of Total Asset	LSIZE

4.2.1 Dependent Variables

According the importance role played by the Return on Asset (ROA) and Return on Equity (ROE) in the banking profitability, these dependent variables are present in almost all the bank performance analysis.

ROA:

Return on Asset (ROA) ratio is obtained from the division of the Net Income by the Total Asset, and expressed in percentage. It is a key indicator of profit and asset management efficiency. Therefore, it indicates how well the bank's assets are managed to bring profit for each one dollar of asset that has been invested to the company or the bank (Gul et Al 2011).

ROE:

Return on Equity (ROE) is obtained by the ratio of Net Income to Total Equity and expressed in percentage. This ratio is also an important indicator of bank profitability in

the case of the use of the shareholder's Equity. Furthermore, it shows the ability of the management to utilize the shareholder's Equity whether to improve the return earning or to keep the bank in good position. Thus the better the management of the shareholder's Equity, the more efficient or the more profit the bank will generate in term of Return on Equity.

4.2.2 Independent Variables

Capital adequacy:

Capital adequacy ratio, also known as capital to risk weighted asset ratio, is calculated by the division of Equity to Total Asset and estimated as a percentage of the bank riskiness or ability to protect its depositors from bank failure. (Mlyneux, 1993), indicates in his study a positive relationship between Equity and bank profitability in the case of lowering the cost of capital.

Asset Quality:

It is the ratio of Total Loan, advances and financing to Total Asset, this ratio determines the degree of use of asset in term of Loan. As Loan is the main source of bank's income and is also expected to have positive impact on profit, the higher this ratio, the more profitable the bank is in a stable economy and the worst on the other hand when the borrowers fall to pay their promises.

Earning:

Management Efficiency is calculated as the ratio of Interest Income over Interest Expense, this ratio will show how well a financial institution is able to use its assets and liabilities internally. Moreover, as the goal is to earn more from the investments that

have been made, the higher this ratio for a company the more efficient it is in generating more profit over its operating expenses.

Liquidity:

Liquidity Ratio is expressed as a company's ability to repay its short-terms debts obligations. It is obtained from the division of the Liquidity Assets by the Total Assets of the company. A larger number of this ratio implies sufficient liquidity to meet unexpected customers need in cash, thus the more safety for going bankruptcy. Some authors like Bourke (1989) mentions in his study a positive relationship between liquidity and bank profitability. In contrast, Molyneux and Thorton (1992) point out a negative impact of liquidity on the profitability. However keeping a certain amount of liquidity will engender loses because of the time of money.

Bank Size:

Calculated as Logarithmic of Total Asset, Bank Size is expected to have a positive impact in the company profitability especially in economy of scale. There has been a lot of discussion concerning the relationship between Bank Size and profitability. Anthanasoglou et, at (2006) point out that according to some factors, increasing bank size may have negative effect on profitability.

Dummy:

Dummy is introduced in the regression as another variable indicator of profitability especially during a period of crisis to indicate whether the financial institutions have

been affected by the crisis or not. In the present study, dummy is given the value zero (0) for the stable period and the value one (1) for the financial crisis 2008.

4.3 Methodology

4.3.1 Panel Unit root Test:

As the aim of this study is to analyze factors affecting Malaysian banking industry by analyzing bank specific, a regression analysis is employed to the panel data that have been collected from the balance sheet and income statement through their financial annual report. Panel data is defined as the combination of cross-section and time series data. Before running the regression analysis, a test has been done in order to see whether the data are stationary or not, by doing so, a unit root test has confirmed a rejection of the null hypothesis under the Levin Lin and Chu (LLC), Pesaran and Shin W-stat (PS); and Fisher Chi-square (M-W), which means the data are stationary. The Unit Root of the panel is provided in the Empirical Analysis and Results.

4.3.2 Proposed Model:

 After verifying and finding that the data are stationary, it comes to the estimation of the banking performance, and to do so, the Ordinary Least Square (OLS) is employed. The regression analysis is done by applying Eviews software program to the OLS method, unfortunately this OLS method will not be efficient if there is autocorrelation in the regression model as it is in this case, because the value of Durbin Watson obtain from the regression analysis (OLS) is below tow (2). Therefore, the best way of elimination of the autocorrelation is to use Var model (Vector Auto regression model) that will lead to a fitted model at lag1, lag2 and lag3 as the case in this study.

Referring to the dependent variables (ROA, ROE) involved in this thesis, the econometric of the Panel Regression will be as the following:

$Yi = \beta 0 + \beta Xi + Di + \varepsilon t$

Where:

Yi represents the dependent variable of the function

βo the intercept of the model

Xi represents the independent variables

Di represents the dummy variables

εt represents the error term

In respect to the model above, the regression analysis of this study are the following:

$LROA = \beta o + \beta 1 LCAR + \beta 2 LLQR + \beta 3 LEAR + D + \varepsilon t$

$LROE = \beta o + \beta 1 LCAR + \beta 2 LLQR + \beta 3 LEAR + D + \varepsilon t$

Asset Quality (ASQ) does not figure in the regression because of the higher multicollinearity it has with Liquidity Ratio (LQR) and also by using it instead of LQR the regression will not give efficient significance, the same problem is also faced with bank size (LSIZE). In addition, the natural Logarithm is used here in order to eliminate the trend in the model because the variables are too much volatile.

Chapter 5

EMPIRICAL ANALYSIS AND RESULTS

5.1 Panel Unit Root Test Results:

The results of the Unit Root Analysis indicate the rejection of the null hypothesis and accepting the alternative meaning that the data involve in this study are stationary. Furthermore, single star (*) stands for probability less than $\alpha=1\%$, double stars (**) for $\alpha=5\%$ and finally three stars (***) for $\alpha=10\%$

Unit Root Analysis (All Banks)

Variables		Levels		
		LLC	IPS	M-W
ROA	τ_T	-8.87*	0.50	41.03***
	τ_μ	-7.13*	-0.13	37.29
	τ	-3.18*	-	41.78**
ROE	τ_T	-7.82*	0.10	50.04*
	τ_μ	-1.93**	1.10	21.45
	τ	-4.89*	-	76.33*
CAR	τ_T	-4.59*	-0.68	38.27***
	τ_μ	-1.58***	0.26	34.61
	τ	-0.47	-	33.97
	τ_T	-13.45*	-0.53	73.81

LQR	τ_μ	-5.76*	1.26	62.82*
	τ	-3.81***	-	33.97
EAR	τ_T	-31.54*	-1.60***	52.68*
	τ_μ	-2.3	0.33	21.71
	τ	34.66	-	13.90

5.2 Correlation Analysis:

Correlation analysis is employed to identify the relationship between a dependent variable and one or more independent variables. In the case of this study, the correlation is analyzed in three separate categories or groups: firstly, the correlation of the variables for all banks in general, secondly, for domestic banks, and finally, for foreign banks. Correlation analysis plays double role in the regression analysis model by indicating how the dependent variable is affected by the independent variables and by testing for the existence of multicollinearity between the independent variables. It is important to note that in all the three tables of correlation below, the dependent variables (ROA and ROE) are positively correlated.

Table 5.1: correlation Matrix for All banks

	ROA	ROE	CAR	LQR	ASQ	LSIZE	EFF	D
ROA	1.00							
ROE	0.60	1.00						
CAR	-0.01	-0.62	1.00					
LQR	-0.23	-0.28	0.31	1*.00				
ASQ	0.27	0.28	-0.24	-0.92	1.00			
LSIZE	0.23	.41	-0.60	0.61	0.51	1.00		
EAR	0.29	0.06	0.01	-0.03	0.08	0.06	1.00	
D	0.12	0.10	-0.10	-0.10	0.00	-0.00	-0.16	1.00

According to the result of the correlation analysis in table 5.1, Capital Adequacy (CAR) and Liquidity (LQR) have negative effect on both Return on Asset (ROA) and Return on Equity (ROE), in contrast, Asset Quality (ASQ) and Erning (EAR) affect ROA and ROE positively. The same table shows a higher negative (-0.92) correlation between two independent variables which are ASQ and LQR, also a low correlation between these variables and the other remaining, thus the presence of multicollinearity problem in the model. However, in order to eliminate this higher multicollinearity, ASQ and bank size have been dropped and in the case of the lower value of Durbin Watson (below 2), a Var model at lag3 is used.

Table 5.2: Correlation Matrix for Domestic Banks

	ROA	ROE	CAR	LQR	ASQ	EFF	D
ROA	1.00						
ROE	0.41	1.00				2	
CAR	0.39	-0.51	1.00				
LQR	-0.18	-0.12	0.02	1.00			
ASQ	0.18	0.04	-0.02	-0.70	1.0		
EAR	0.24	-0.10	0.08	-0.37	0.47	1.00	
D	0.02	0.19	-0.09	-0.13	-0.08	-0.21	1.00

This table 5.2 indicates that a positive relationship between ROA and CAR, ASQ, EAR and a negative with LQR. Looking to the ROE, only ASQ has positive impact on it, while the other variables (CAR, LQR, and EAR) have inverse relationship. Here also, there is higher negative (-0.70) correlation between ASQ and LQR as the case in the table 5.1.

Table 5.3: Correlation Matrix for Foreign Banks

	ROA	ROE	CAR	LQR	ASQ	EFF	D
ROA	1.00						
ROE	0.70	1.00					
CAR	-0.22	-0.68	1.00				
LQR	-0.33	-0.45	0.40	1.00			
ASQ	0.36	0.41	-0.28	-0.96	1.00		
EAR	0.32	0.08	-0.01	0.03	0.07	1.00	
D	0.21	0.01	0.01	-0.10	0.03	-0.15	1.00

As in the first table this for the foreign banks shows that ASQ and EAR are positively related to both on ROA and ROE, however, CAR and LQR affect them negatively. The higher negative correlation between ASQ and LQR also appeared in these results.

5.3 Regression Analysis Results

After finding the correlation between the variables, the present task is to see whether the explanatory (independent) variables affect or not the explained (dependent) variables, in other word, to see how the selected ratios (CAR, LQR, ASQ, EAR, LSIZE) impact profitability of financial institutions which are represented by ROA and ROE in this case. Furthermore, the regression analysis result is categorized in three parts as the following:

5.3.1 Regression Analysis Result of All Banks

The regression analysis shows a negative relationship between Capital Adequacy (Equity/Total Asset) and Return on Asset (ROA) at lag3 and also this independent

variable is statistically significant. This finding suggests that when the Capital Adequacy increases, profitability will decrease. In another words, when the banks increase the use of Equity, they will register more losses. The explanation of this phenomenon can be firstly the amount they are paying to their shareholders as a dividend is greater than what they are generating from it as a profit. Secondly, it could be the case that they are using retain earning without investing it in new plan that will give more profit to the company. Regarding the second profitability indicator which is the Return on Equity (ROE), Capital Adequacy (CAR) is not significant, that means ROE is not affected by CAR. Liquidity (Liquidity Asset/Total Asset) is also statistically significant and has two different effects on the ROA; the first one is negative impact at lag2 and second is positive at lag3. In the first case of the negative impact is supported by the previous studies as Molyneux and Thorton (1992) point out a negative impact of liquidity (LQR) on the banking sector profitability. Therefore, in this situation increasing liquidity will decrease profitability. In the second one, the positive impact on ROA is a good sign of profitability because it shows that banks have the ability to meet unexpected demand in cash by their customers. Bourke (1989) mentions in his study a positive relationship between Liquidity and bank's profitability. Similarly to it relation with ROA, LQR has one negative effect at lag1 and one positive effect at lag3 to the ROE and it is statistically significant. That means at lag1 in order to get benefit or increase the profit, Malaysian banks should reduce the amount of liquidity they are taking from their shareholders. In contrast, at lag3 they should increase liquidity as it will bring more profit. Coming to Earning (Interest Income/Interest Expense), as the precedent LQR, Earning (EAR) affects ROA and ROE in two sense invers and it is also statistically significant. At lag2 it impacts both ROA and ROE negatively meaning that

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the management of assets and liabilities of banks could not work efficiently in order to generate sufficient interest income. However, at lag3 EAR has a positive relationship with also both ROA and ROE, according to this relationship here, the higher the Earning, the more profit the banks will have. Dummy is significant only in the case of ROE and affects it negatively at lag1. This shows that Malaysian commercial banks also suffered from the Global Financial crisis 2008 which started in the U.S.

5.3.2 Regression Analysis Result of Domestic Banks:

The regression analysis result of domestic banks shows that CAR is not statistically significant in both ROA and ROE. Thus it does not have any effect in these profitability indicators. LQR has a positive impact in both ROA and ROE and also significant at lag3 in the two dependent variables. Therefore, an increase in liquidity indicates an increase in domestic banks profitability, thus the more safety for them of going bankruptcy. EAR has positive relationship with ROA and statistically significant at lag3, that means assets and liabilities are well utilized by the management team and generate more profit. Dummy does not have any significance effect on Malaysian domestic bank's profitability indicators. Therefore, they did not suffer from any losses due to the Global Financial Crisis 2008.

5.2.3 Regression Analysis Result of Foreign Banks:

The result of this regression analysis indicates that CAR has a positive impact on ROA as well as on ROE and is also significant in both at lag1. Therefore, as CAR is defined as Equity/Total Asset, the higher the increase in Equity the more profit of foreign banks; this is the result of the reduction of the cost of funding. LQR is not statistically significant, thus does not affect any of the dependent variables, and consequently does not impact the profitability of foreign banks. The behavior of EAR here (foreign banks)

is similar to that one with All Banks, this means that EAR is significant in both cases (ROA and ROE) and has two different manners of affecting these ROA and ROE profitability indicators. In the ROA side, EFF has a positive relationship at lag1 and negative one at lag2. When coming to the ROE, it has positive impact at lag1 and lag3; and a negative one at lag2. The meaning of these changes is that banks can not keep gaining or losing profit continuously in their period of operation. Dummy variable is statistically significant at lag1 and has a negative effect on both ROA and ROE, the meaning of that is that Malaysian foreign banks were affected by the Global Financial Crisis 2008; as a consequence, they registered losses from their annual operating income.

5.4 Comparison between Domestic and Foreign Banks

Comparison between the two categories of ownerships in term of profitability is done by taking the average of ROA and ROE of the banks respectively; and then finding their graph in the same figure. By doing so, figure 5.1 and figure 5.2 show that foreign banks are more profitable than domestics banks, they highlight also that the former were more affected by the 2008 crisis than the latter. As a result of the consequence of the crisis, foreign banks register a lot of losses in the preceding years. Note that ROA1 and ROE1 stand for domestic; and ROA2 and ROE2 for foreign.
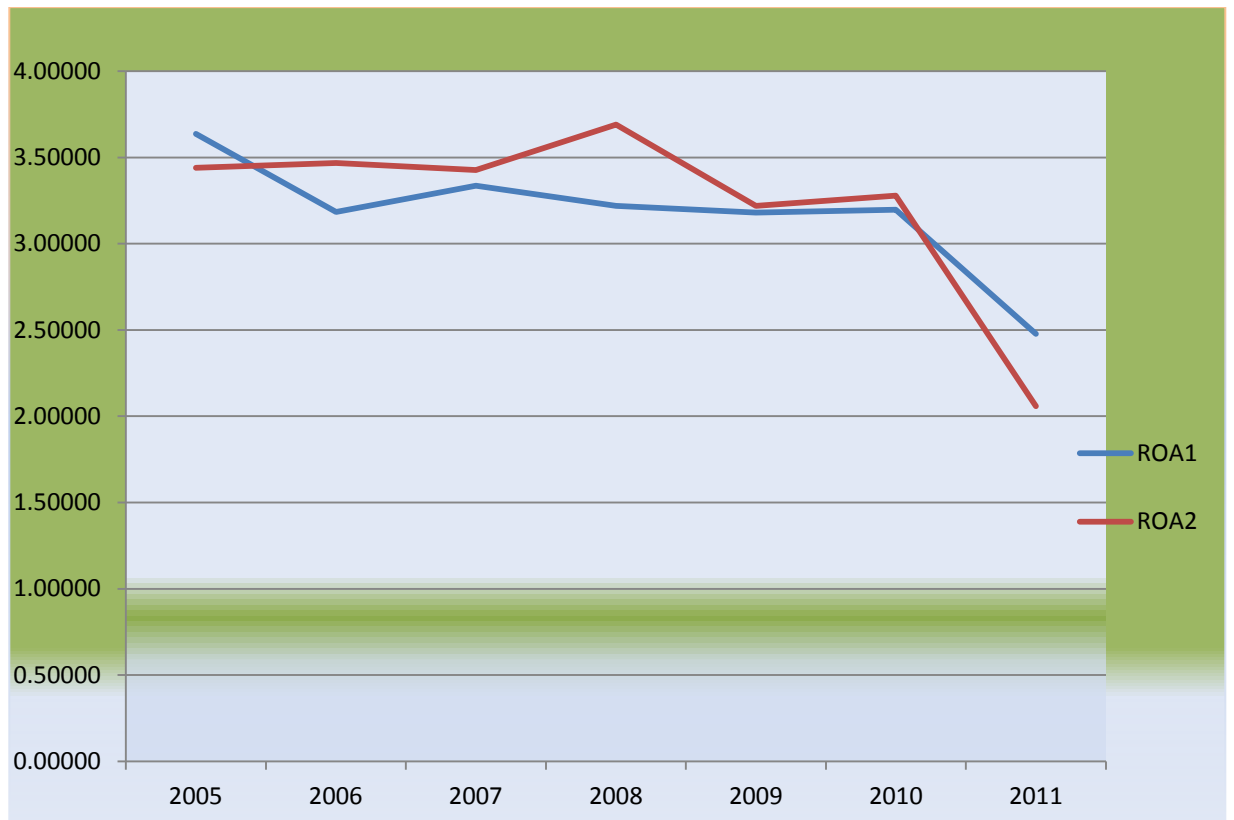
Figure 5.1: ROA measure for All the Malaysian Banks
ROA1: Domestic Banks
ROA2: Foreign Banks
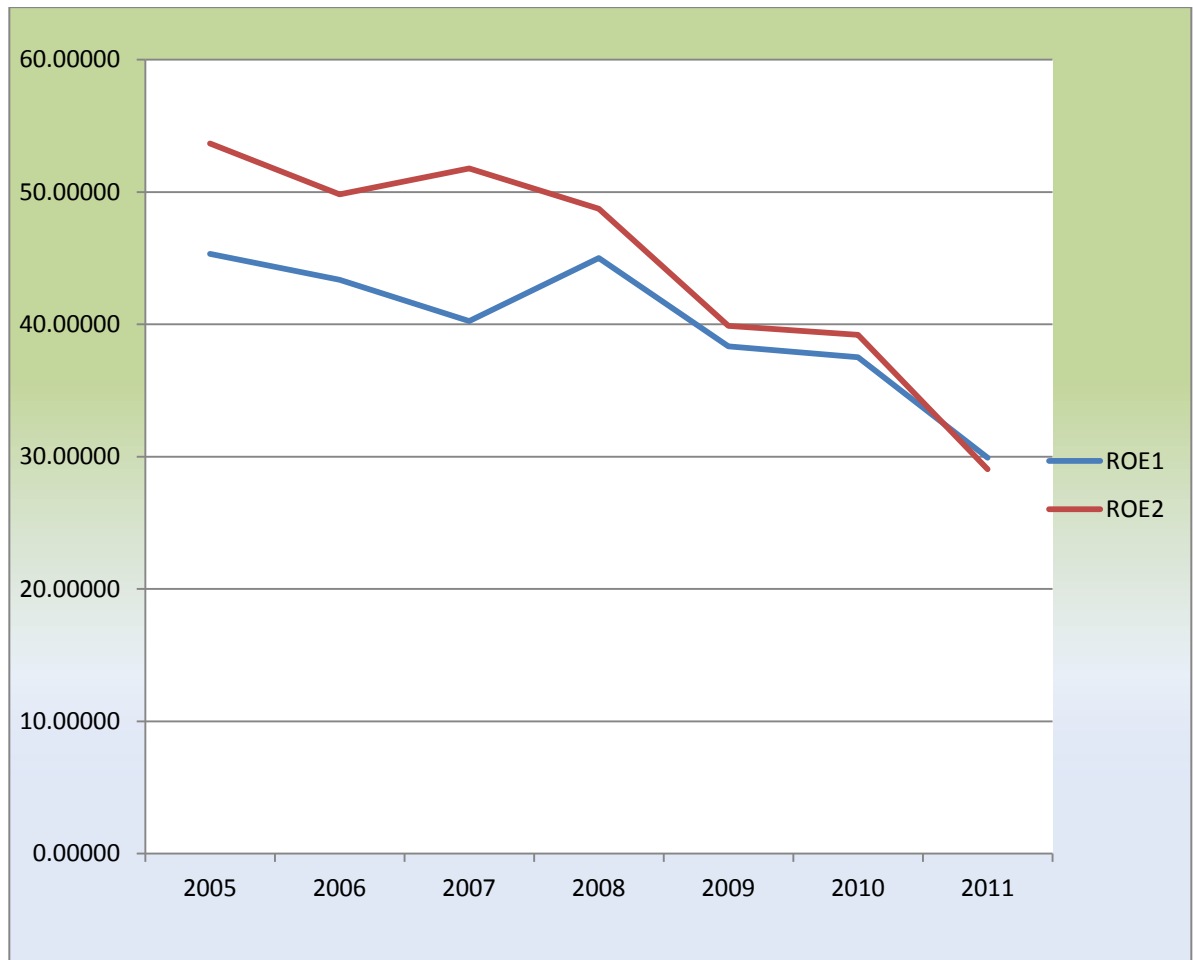
Figure 5.2: ROE measure for All the Malaysian Banks
    ROE1: DOMESTIC Banks
    ROE2: Foreign Banks

Chapter 6

CONCLUSION AND SUGGESTION

The aim of this study is to examine the performance of the Malaysian's local and foreign banks, and compare their profitability in the financial sector. Profitability of commercial banks can be influenced by several factors, such as liquidity, Asset Quality, capital, operating expenses, and the size of the banks. Measuring the profitability in term of Return on Asset (ROA) and Return on Equity (ROE) is done by using bank specific variables and Dummy is introduced in the regression as another factor that influence profitability especially during the period of 2008 to indicate whether the financial institutions have been affected by the crisis or not. For this analysis, a panel regression methodology has been applied to empirically investigate the performance of seven (7) local and seven (7) foreign commercial banks, covering a period between 2005 and 2011. Some previous studies have been carried out in the same field such as the work of Sufian (2009) investigating the factors influencing the profitability of the Malaysian banking industry covering the period 2000-2004 and focusing specially to foreign and domestic commercial banks. He comes up with the results that there is a negative relationship between credit risk and loan concentrated for Malaysian banks. In contrast, he finds that capital size, income from non-interest sources and operating expenses have a positive effect on Malaysian banking profitability.

The empirical finding shows that all commercial banks are positively affected by LQR, EFF, in contrast, they are negatively impacted by CAR, LQR, EAR and Dummy at some lags (see tables of Var Mdel). In the case of domestic banks LQR and EAR have positive effect on profitability; the remaining variables are not significant. Profitability of foreign banks is affected positively by CAR, EAR; and negatively by EAR and dummy at some different lags.

The comparison between the two categories of ownership indicates that foreign banks are more profitable than domestic; this is supported by the study of Matthews and Ismail (2005) saying that foreign Malaysian banks are in better position than domestic in the case of profitability.

The suggestion of this Thesis for future studies is to introduce additional bank specific and macroeconomic variables in order extend these results. Regarding the policy maker, it would be better to encourage domestic banks by providing some support such as providing subsidy or making a reduction on their taxes comparably to foreign banks.

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APPENDICES

Unit Root Analysis (All Banks)

Variables		Levels		
		LLC	IPS	M-W
ROA	τ_T	-8.87*	0.50	41.03***
	τ_μ	-7.13*	-0.13	37.29
	τ	-3.18*	-	41.78**
ROE	τ_T	-7.82*	0.10	50.04*
	τ_μ	-1.93**	1.10	21.45
	τ	-4.89*	-	76.33*
CAR	τ_T	-4.59*	-0.68	38.27***
	τ_μ	-1.58***	0.26	34.61
	τ	-0.47	-	33.97
LQR	τ_T	-13.45*	-0.53	73.81
	τ_μ	-5.76*	1.26	62.82*
	τ	-3.81***	-	33.97
EAR	τ_T	-31.54*	-1.60***	52.68*
	τ_μ	-2.3	0.33	21.71
	τ	34.66	-	13.90

Unit Root Analysis (Domestic Banks)

Variables		Levels		
		LLC	IPS	M-W
ROA	τ_T	-11.78*	-0.69	39.38*
	τ_μ	-11.61*	-2.83*	38.61*
	τ	-2.62*		24.29**
ROE	τ_T	-9.68*	-0.78	46.93*
	τ_μ	-5.13*	-1.25	25.85**
	τ	-3.46*		39.93*
CAR	τ_T	-3.72*	0.33	23.27***
	τ_μ	-2.03**	0.04	13.58
	τ	0.81		8.95
LQR	τ_T	-11.80*	-0.91	49.50*
	τ_μ	-3.72*	-0.86	28.27**
	τ	-4.03*		24.00***
	τ	0.96		6.75
EAR	τ_T	-19.91*	-1.36***	32.47*
	τ_μ	-1.30***	0.66	7.85
	τ	21.18		6.16

Unit Root Analysis (Foreign Banks)

Variables		Levels		
		LLC	IPS	M-W
ROA	τ_T	-1.19	0.18	4.29
	τ_μ	2.50	1.30	5.35
	τ	-2.12*		18.69
ROE	τ_T	-4.05*	0.13	19.93
	τ_μ	-1.04	1.27	11.87
	τ	-4.10*		31.92*
CAR	τ_T	-3.07*	0.49	11.43
	τ_μ	-1.28*	0.38	13.82
	τ	-1.25		14.81
LQR	τ_T	-4.81*	0.23	21.74***
	τ_μ	-4.43*	-0.90	31.73*
	τ	-1.02		11.86
ASQ	τ_T	-5.38*	-6.00	30.04*
	τ_μ	-5.89*	-1.52***	45.04*
	τ	-0.90		19.32
EAR	τ_T	-4.80*	0.17	19.65
	τ_μ	-2.94*	-0.31	15.42
	τ	-0.03		6.54

Regression Analysis for all the Banks

Dependent Variable: LROA
Method: Panel Least Squares
Date: 05/03/12   Time: 16:28
Sample: 2005 2011
Periods included: 7
Cross-sections included: 14
Total panel (balanced) observations: 98

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.400740	0.381562	3.671064	0.0004
LCAR	-0.083057	0.083471	-0.995040	0.3223
LLQR	-0.128976	0.095033	-1.357182	0.1780
LEAR	0.473387	0.204597	2.313750	0.0229
D	0.134226	0.098110	1.368120	0.1746

R-squared	0.107042	Mean dependent var	1.119032
Adjusted R-squared	0.068635	S.D. dependent var	0.342701
S.E. of regression	0.330732	Akaike info criterion	0.674653
Sum squared resid	10.17265	Schwarz criterion	0.806540
Log likelihood	-28.05802	Hannan-Quinn criter.	0.727999
F-statistic	2.787054	Durbin-Watson stat	1.112036
Prob(F-statistic)	0.030915		

Dependent Variable: LROE
Method: Panel Least Squares
Date: 05/03/12   Time: 16:29
Sample: 2005 2011
Periods included: 7
Cross-sections included: 14
Total panel (balanced) observations: 98

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.006070	0.381598	15.73925	0.0000
LCAR	-1.083099	0.083478	-12.97460	0.0000
LLQR	-0.129011	0.095041	-1.357418	0.1779
LEAR	0.473448	0.204616	2.313831	0.0229
D	0.134217	0.098119	1.367892	0.1746

R-squared	0.684339	Mean dependent var	3.617860
Adjusted R-squared	0.670763	S.D. dependent var	0.576450
S.E. of regression	0.330763	Akaike info criterion	0.674842
Sum squared resid	10.17457	Schwarz criterion	0.806728
Log likelihood	-28.06724	Hannan-Quinn criter.	0.728187
F-statistic	50.40508	Durbin-Watson stat	1.111897
Prob(F-statistic)	0.000000		

Regression Analysis for Domestic Banks

Dependent Variable: LROA
Method: Panel Least Squares
Date: 05/08/12   Time: 18:11
Sample: 2005 2011
Periods included: 7
Cross-sections included: 7
Total panel (balanced) observations: 49

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.664885	0.615788	1.079729	0.2861
LCAR	0.231273	0.143565	1.610925	0.1143
LLQR	-0.060108	0.125768	-0.477933	0.6351
LEAR	0.245851	0.394021	0.623953	0.5359
D	0.074776	0.123887	0.603581	0.5492

R-squared	0.090358	Mean dependent var	1.123976
Adjusted R-squared	0.007663	S.D. dependent var	0.282908
S.E. of regression	0.281822	Akaike info criterion	0.401368
Sum squared resid	3.494637	Schwarz criterion	0.594411
Log likelihood	-4.833514	Hannan-Quinn criter.	0.474608
F-statistic	1.092672	Durbin-Watson stat	1.290100
Prob(F-statistic)	0.371974		

Dependent Variable: LROE
Method: Panel Least Squares
Date: 05/08/12   Time: 18:12
Sample: 2005 2011
Periods included: 7
Cross-sections included: 7
Total panel (balanced) observations: 49

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.270065	0.615794	8.558161	0.0000
LCAR	-0.768711	0.143567	-5.354384	0.0000
LLQR	-0.060116	0.125769	-0.477986	0.6350
LEAR	0.245851	0.394025	0.623948	0.5359
D	0.074744	0.123888	0.603316	0.5494

R-squared	0.420798	Mean dependent var	3.638860
Adjusted R-squared	0.368143	S.D. dependent var	0.354543
S.E. of regression	0.281825	Akaike info criterion	0.401387
Sum squared resid	3.494702	Schwarz criterion	0.594430
Log likelihood	-4.833972	Hannan-Quinn criter.	0.474627
F-statistic	7.991635	Durbin-Watson stat	1.289917
Prob(F-statistic)	0.000062		

Regression Analysis for Foreign Banks

Dependent Variable: LROA
Method: Panel Least Squares
Date: 05/10/12   Time: 01:18
Sample: 2005 2011
Periods included: 7
Cross-sections included: 7
Total panel (balanced) observations: 49

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.903969	0.666420	2.857010	0.0065
LCAR	-0.156396	0.115753	-1.351116	0.1836
LLQR	-0.227016	0.185074	-1.226622	0.2265
LEAR	0.500027	0.259328	1.928168	0.0603
D	0.227432	0.153099	1.485525	0.1445

R-squared	0.212127	Mean dependent var		1.114088
Adjusted R-squared	0.140503	S.D. dependent var		0.396545
S.E. of regression	0.367634	Akaike info criterion		0.932991
Sum squared resid	5.946796	Schwarz criterion		1.126034
Log likelihood	-17.85828	Hannan-Quinn criter.		1.006231
F-statistic	2.961647	Durbin-Watson stat		0.979700
Prob(F-statistic)	0.029879			

Dependent Variable: LROE
Method: Panel Least Squares
Date: 05/10/12   Time: 01:18
Sample: 2005 2011
Periods included: 7
Cross-sections included: 7
Total panel (balanced) observations: 49

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.509157	0.666511	9.766022	0.0000
LCAR	-1.156466	0.115769	-9.989457	0.0000
LLQR	-0.227011	0.185099	-1.226429	0.2266
LEAR	0.500126	0.259363	1.928286	0.0603
D	0.227461	0.153119	1.485516	0.1445

R-squared	0.772577	Mean dependent var		3.596859
Adjusted R-squared	0.751903	S.D. dependent var		0.738181
S.E. of regression	0.367683	Akaike info criterion		0.933262
Sum squared resid	5.948409	Schwarz criterion		1.126305
Log likelihood	-17.86493	Hannan-Quinn criter.		1.006502
F-statistic	37.36812	Durbin-Watson stat		0.979532
Prob(F-statistic)	0.000000			

Var model of ROA of All Banks

	LROA
LROA(-1)	0.787165
	(0.31173)
	[2.52515]
LROA(-2)	-0.307000
	(0.37107)
	[-0.82733]
LROA(-3)	-0.251620
	(0.23296)
	[-1.08009]
LCAR(-1)	-0.074521
	(0.11034)
	[-0.67539]
LCAR(-2)	0.139953
	(0.19086)
	[0.73326]
LCAR(-3)	-0.356222
	(0.15794)
	[-2.25549]
LLQR(-1)	-0.240578
	(0.13408)
	[-1.79427]
LLQR(-2)	-0.374747
	(0.16861)
	[-2.22252]
LLQR(-3)	0.717548
	(0.09766)
	[7.34755]
LEAR(-1)	0.113119
	(0.20316)
	[0.55681]
LEAR(-2)	-2.040824
	(0.33153)
	[-6.15573]
LEAR(-3)	3.342458
	(0.47382)
	[7.05432]
D	-0.105122

	C	0.154760
		(0.45324)
		[0.34145]

R-squared	0.864572
Adj. R-squared	0.813787
Sum sq. resids	1.274080
S.E. equation	0.178471
F-statistic	17.02404
Log likelihood	26.46700
Akaike AIC	-0.373821
Schwarz SC	0.204851
Mean dependent	1.049461
S.D. dependent	0.413584

Var Model of ROE of All Banks

	LROE
LROE(-1)	0.348040
	(0.40790)
	[0.85324]
LROE(-2)	0.295222
	(0.48562)
	[0.60793]
LROE(-3)	0.103330
	(0.30475)
	[0.33906]
LCAR(-1)	0.306520
	(0.36876)
	[0.83121]
LCAR(-2)	-0.229539
	(0.38419)
	[-0.59746]
LCAR(-3)	-0.248970
	(0.32968)
	[-0.75520]

8LLQR(-1)	-0.523877
	(0.17540)
	[-2.98674]
LLQR(-2)	-0.155779
	(0.22056)
	[-0.70629]
LLQR(-3)	0.642726
	(0.12773)
	[5.03184]
LEAR(-1)	0.074867
	(0.26575)
	[0.28172]
LEAR(-2)	-1.955905
	(0.43365)
	[-4.51032]
LEAR(-3)	2.479366
	(0.61976)
	[4.00055]
D	-0.205456
	(0.09503)
	[-2.16210]
C	0.974648
	(1.78582)
	[0.54577]

R-squared	0.882569
Adj. R-squared	0.838533
Sum sq. resids	2.179903
S.E. equation	0.233447
F-statistic	20.04175
Log likelihood	11.42944
Akaike AIC	0.163234
Schwarz SC	0.741906
Mean dependent	3.526446
S.D. dependent	0.580960

Var Model of ROA of Domestic Banks

	LROA

LROA(-1)	0.273531
	(0.62680)
	[0.43639]
LROA(-2)	-0.169872
	(0.73726)
	[-0.23041]
LROA(-3)	-0.486860
	(0.42071)
	[-1.15722]
LCAR(-1)	0.092140
	(0.16811)
	[0.54809]
LCAR(-2)	0.026446
	(0.26753)
	[0.09885]
LCAR(-3)	0.021701
	(0.27020)
	[0.08032]
LLQR(-1)	-0.319289
	(0.20151)
	[-1.58446]
LLQR(-2)	-0.111991
	(0.26126)
	[-0.42866]
LLQR(-3)	0.644583
	(0.13520)
	[4.76762]
LEAR(-1)	-0.036219
	(0.66963)
	[-0.05409]
LEAR(-2)	-0.105671
	(0.83733)
	[-0.12620]

LEAR(-3)	2.227668
	(0.91099)
	[2.44533]
D	-0.046663
	(0.12313)
	[-0.37898]
C	-0.822065
	(1.86177)
	[-0.44155]

R-squared	0.863950
Adj. R-squared	0.693887
Sum sq. resids	0.389614
S.E. equation	0.180188
F-statistic	5.080185
Log likelihood	20.11695
Akaike AIC	-0.294068
Schwarz SC	0.467192
Mean dependent	1.066579
S.D. dependent	0.325676

Var Model of ROE of Domestic Banks

	LROE
LROE(-1)	-0.358590
	(0.96971)
	[-0.36979]
LROE(-2)	0.468711
	(1.14067)
	[0.41091]
LROE(-3)	-0.105640
	(0.65078)
	[-0.16233]
LCAR(-1)	-0.101412
	(0.84911)
	[-0.11943]
LCAR(-2)	-0.037122

		(0.98066)
		[-0.03785]
	LCAR(-3)	-0.021221
		(0.64711)
		[-0.03279]
	LLQR(-1)	-0.501346
		(0.31166)
		[-1.60862]
	LLQR(-2)	0.105748
		(0.40397)
		[0.26177]
	LLQR(-3)	0.562261
		(0.20903)
		[2.68981]
	LEAR(-1)	-0.229994
		(1.03529)
		[-0.22215]
	LEAR(-2)	-0.005127
		(1.29485)
		[-0.00396]
	LEAR(-3)	0.411004
		(1.40866)
		[0.29177]
	D	-0.193773
		(0.19040)
		[-1.01773]
	C	3.360233
		(5.64396)
		[0.59537]

R-squared	0.745204
Adj. R-squared	0.426708
Sum sq. resids	0.931437
S.E. equation	0.278603
F-statistic	2.339763
Log likelihood	7.914951
Akaike AIC	0.577503
Schwarz SC	1.338763
Mean dependent	3.578717
S.D. dependent	0.367958

Var Model of ROE of Foreign Banks

	LROA
LROA(-1)	1.122359
	(0.42838)
	[2.61998]
LROA(-2)	0.057979
	(0.63873)
	[0.09077]
LROA(-3)	0.263494
	(0.36319)
	[0.72549]
LCAR(-1)	0.866079
	(0.35907)
	[2.41201]
LCAR(-2)	-0.538179
	(0.46867)
	[-1.14830]
LCAR(-3)	-0.282704
	(0.28149)
	[-1.00430]
LLQR(-1)	0.246019
	(0.29392)
	[0.83704]
LLQR(-2)	-0.617033
	(0.39450)
	[-1.56409]
LLQR(-3)	0.228128
	(0.44521)
	[0.51240]
LEAR(-1)	0.510237
	(0.23036)
	[2.21497]
LEAR(-2)	-2.912200
	(0.41893)
	[-6.95154]
LEAR(-3)	1.786901
	(1.15130)
	[1.55207]
D	-0.367593

	(0.09892)
	[-3.71589]
C	0.404548
	(0.55046)
	[0.73493]

R-squared	0.965199
Adj. R-squared	0.921699
Sum sq. resids	0.227166
S.E. equation	0.137588
F-statistic	22.18813
Log likelihood	27.66960
Akaike AIC	-0.833543
Schwarz SC	-0.072283
Mean dependent	1.032343
S.D. dependent	0.491696

Var Model of ROE of Foreign Banks

	LROE
LROE(-1)	1.111212
	(0.40349)
	[2.75403]
LROE(-2)	0.054312
	(0.60217)
	[0.09019]
LROE(-3)	0.079927
	(0.34201)
	[0.23370]
LCAR(-1)	1.061531
	(0.41161)
	[2.57899]
LCAR(-2)	-0.842658
	(0.69849)
	[-1.20640]
LCAR(-3)	0.172190
	(0.35051)
	[0.49125]
LLQR(-1)	-0.022663
	(0.27685)
	[-0.08186]
LLQR(-2)	-0.696338

		(0.37165)
		[-1.87365]
LLQR(-3)		0.554980
		(0.41956)
		[1.32277]
LEAR(-1)		0.412174
		(0.21705)
		[1.89897]
LEAR(-2)		-2.751378
		(0.39475)
		[-6.96989]
LEAR(-3)		2.369656
		(1.08480)
		[2.18441]
D		-0.343610
		(0.09318)
		[-3.68771]
C		-1.153389
		(2.79999)
		[-0.41193]

R-squared	0.986342
Adj. R-squared	0.969269
Sum sq. resids	0.201522
S.E. equation	0.129590
F-statistic	57.77304
Log likelihood	29.34659
Akaike AIC	-0.953328
Schwarz SC	-0.192068
Mean dependent	3.474176
S.D. dependent	0.739236