DETERMINANTS TO BANK PERFORMANCE: AN UNBALANCE PANEL DATA ANALYSIS OF VIETNAMESE COMMERCIAL BANKS

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ABSTRACT

This paper aims to investigate the factors that are expected to contribute to bank performance. Unbalance panel data is applied for 32 commercial banks in Vietnam during the period of 2008 – 2013. The paper figures out interesting findings. In line with other studies, the results show that bank performance is positively related to capital strength, management efficiency, market concentration of banking industry and non – interest income. However, the unexpected positive relationship between bank profitability and credit risk is found. Refinancing rate has a positive effect on bank profitability, meanwhile inflation negatively contributes to bank profit. Finally, there is no evidence for size impact on bank performance.

Key words: Bank Profitability, Capital ratio, Bank Risk, Unbalance panel data, Vietnam.
1. INTRODUCTION

Commercial Banks are of the oldest and most important section in a financial system as it banks creating money. This function createS flows of fund from savers to borrowers, reduce transaction cost, and eliminate the adverse information, which in very essential for a development of a country. Moreover, it can be said that banking system is engines of a country since banking system is used as instrument of government policy. Intuitively, the health of banking system has impact on whole economy. Bank collapse is not a new phenomenon, yet never less important as the health of the economy can be heavily damaged when the banking industry fails. As a result, it is worth understanding which determinants contribute to bank performance.

The issue is even highly desirable in a transitional economy like Vietnam where banking industry is underdeveloped and not well-functioned. Identifying the key characteristics that affect the banks’ performance will help policy makers and managers make accurate decisions to enhance bank performance. Improving performance and competitive advantages of domestic banks are central of Vietnamese government policy, especially under waves of capital liberalization worldwide. It is evident by many important banking regulations imposed such as minimum capital adequacy1 or M&A transactions in banking industry that are forced by government to make financial health of some banks better. Thus, the question about which determinants affect bank performance in Vietnam is ever indispensable and valuable, especially when the ambition of Vietnamese government is to make revolution to banking industry. Furthermore, due to the lack of similar research in Vietnam, it worth conducting the research to understand about the nature of performance of domestic banks in Vietnam. In this research, we also apply innovative approach to measure management efficiency.

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1According to the Decree 141 in 2006, the Government had increased the requirement of capital for all credit institution up to 3,000 billion
2. LITERATURE REVIEW

2.1 The profitability – capital relationship hypotheses

Under perfect market assumption stated in the research of Modigliani and Miller (1958) that is value maximizing behavior, no bankruptcy costs, taxes or barriers to entry to the market and no asymmetrical information, adding additional equity to substitute debt will reduce the risk of both securities, thus reduce the investors’ required rate of return for both. In this model, book rates of return and market rate of return are equal. As a result, it is expected that there is existence of negative relationship between capital ratio and the bank’s profitability.

However, as imperfection of the market take places, the expected negative relationship between profitability and capital ratio may be distorted. Bourke (1989) state that banks have high capital ratio generate more profit. This can be explained under assumption that banks are well – capitalized have more opportunities to enjoy cheaper and less risky financing sources and achieve high quality assets.

In addition, signaling hypothesis can use to support the positive profitability – capital ratio relationship. When symmetric information assumption is relaxed, managers are expected to have superior information about future performance of a firm. Therefore, they might give the signal to market via capital structure decision (Myers and Majluf, 1984). If signaling equilibrium exists, high capital ratio is a result of having improved performance. Bourke (1989) found supportive evidence in European, Australian and North American banks.

Additionally, Berger (1995) adopted Granger causality test to point out that there exist positive relationship between ROE and capital ratio. He argues that the expected bankruptcy costs would be relatively high for banks which maintain capital ratio lower than its balance. A succeeding capital can result in higher return on equity as a bank pay lower insurance expenses on risky loans. Moreover, Berger et al. (2006) also support franchise – value hypothesis that is more efficient firms tend to make high capital ratio to protect future income resulting from high profit efficiency.
However, in theory, banks that have excessive capital might indicate that the conservative strategy a bank is employing, ignoring potentially promising investments. Jensen and Meckling (1976) point that using leverage can reduce agency cost, thus improve the profitability. In line with previous discussion, Berger et al. (2006) argue that negative relationship between capital ratio and bank profitability can be explained under the efficiency – risk hypothesis. The hypothesis states that more profitable firms have tendency to use high leverage to some degree as higher expected return from profit efficiency substitute equity capital to protect the firm against bankruptcy or financial distress.

Moreover, since capital ratio is considered as proxy for risk (Goddard et al., 2004), banks having high level of capital ratio implicitly indicate low level of risk, thus shareholders should expect to earn lower return. Nevertheless, when bankruptcy and financial distress is more likely happen, agency cost of debt will larger than agency cost of equity; thus higher leverage enlarge agency cost and lower profitability. As a result, the capital ratio – profitability relationship seem not being consistent. We expect the positive relationship between bank profit and capital strength as under vulnerable currency system with ceiling deposit interest policy in Vietnam, people refer high reputation and strong banks with large capital rather than weak banks.

Current studies

Empirical evidences show mixed results. Study of Hoffman (2011) conducted 11,777 U.S banks in 1995-2007 period figures out the negative impact of capital adequacy on bank performance. The result is supported by findings of Frederick (2014) when author examined the relationship between capital adequacy and bank performance of all commercial banks in Uganda. In contrast, Perera, Skully and Chaudhry (2013) did research on 119 commercial banks in South Asia in 1992 – 2007 period and concluded that banks that have higher capital adequacy will generate better performance. The positive relationship between capital strength and bank performance is also found in research of Francis (2013). Interestingly, another results pointed that there is no linkage between strength of capital and bank outcomes (Roman, 2013).
2.2 Hypotheses about other Bank-Specific Determinants

Bank Size

One of the common factors banking literatures has paid interest is bank size. The school of bank profitability typically shows the positive relationship between bank size and profitability (Kosmidou, 2008; Alper and Anbar, 2011; Karim, Sami and Hichem, 2010a, 2010b; Antwi, Mensah, Crabbe and Antwi, 2014; Kosmidou, 2008). It can be explained that large banks can enjoy the economies of scale and scope, having well-diversified portfolio loans resulting in lower level of risk. Thus, large banks can raise capital less costly, enhancing performance of banks. Goddard et al. (2004) argue that market power exerted by brand image in capital market can contribute to positive relationship between bank size and profitability.

However, Goddard et al. (2004) find the evidence of economics of scale in low level of asset size and diseconomies of scale at high assets level. Berger and Humhrey (1997) claim that large banks are expected to be more efficient than small banks, on average. Yet, it is not clear whether large banks achieve significant benefit from economies of scale as it is proved that profitability is mainly resulted from technology and management structure rather than by increase in size.

In addition, Hoffman (2011) figures out there is negative relationship between bank size and performance in 11,777 banks in U.S. The findings of study conducted by Francis (2013) also support the negative relationship of performance and bank size. It is noticed that if the bank size is forcibly functioned by government, the impact of size can produce diseconomies of scale, especially in developing countries (Pedera, 2013). On the other hand, Singh (2010) concluded that there is no evidence of size – performance link among Indian commercial banks.

Another strong argument is that large banks can enjoy implicit regulatory named “too – big – to – fail”. The root cause of “too big to fail” is the fact that in our financial system as it exists today, the failure of large complex financial firms generates large, undesirable externalities. When this happens, not only is the financial sector disrupted, but its troubles
cascade over into the real economy. (Dudley, C. 2012). As a result, when the bank is among the largest bank in the industry, it will be under “too – big – to – fail” protection. Bank will more likely to involve in risky activities as their cost of failure is reduced by the protection. More risky activities mean that banks can earn higher return as the compensation.

We expect a negative relationship between bank size and profitability as the size of banks in Vietnam mainly determined by history rather than economy benefit.

Bank Risk

The literature of bank profitability shows that bank risk is an important determinant of bank performance as banks are more vulnerable to risk than non – financial institutions. Typically, credit risk is used as proxy for bank risk. Credit risk is expected to be negatively related to bank performance as it associates to non – performing loans, thus default on these loans will produce low return (Miller and Noulas 1997).

There is consensus in the literature of credit risk and banks performance relationship. Academia found the negative relationship between bank performance and credit risk, meaning banks that involves in risky or non-performance loans with the purpose of earning higher return finally generate less profitability (Frederick, 2014; Karim et al.,2010a, 2014b; Kosmidou, 2008; Brissimis and Delis, 2008; Roman and Danuletiu, 2013; Osuagwu, 2014). We expect that banks face more credit risk actually perform less efficient and are risky, generating low profitability.

Income Structure

Income from loan activities has been of the oldest types of earning for commercial banks. However, under high competition rising from development of stock markets and bond markets, earning from traditional activities have reduced and banks now have to diversify their activities to improve the return and reduce the risk. Many researchers figured out that banks providing multiple activities usually have good performance. It can be argued that they are more dynamic in high competitive environment. Evidences proved by findings of Osuagwu (2014), Alper et al. (2011) and Singh (2010). In contrast, Roman (2013) stated that banks generating larger non – interest income have low performance. We expect commercial banks that are more active in dynamic environment will earn high profit.
Management Efficiency

The efficiency of management is believed to have impact on bank performance, evident by many researches. By using cost to income ratio as proxy for management efficiency, many researchers found that there exists negative relationship between management efficiency and bank profitability (Francis, 2013; Karim et al., 2010; and Kosmidou, 2008); meanwhile Antwi et al. (2014) found this relationship is positive. On the other hand, many researchers employ operating cost expense to total asset ratio to measure the efficiency of management of banks and found inconclusive results (Singh, 2010; Osuagwu, 2014; Karim et al., 2014; Athanasoglou, Brissimis and Delis, 2008).

However, the efficiency of banks must consider many characteristics such as profits, risk, strategies, employees, manager quality, or other input and output. Therefore, regular financial ratio may be bias and unreliable to measure the efficiency of the banks (Perera et al., 2013). In line with argument of Perera et al. (2013), in this study, we will apply the DEA mathematical programming methodology to evaluate the efficiency of the banks. Our input would be Total Deposit, Interest Expense, Non-Interest Expense, while output would be net interest income, non-interest income and Total Loan. We expect a positive relationship between management efficiency and bank profitability.

2.3 Other Determinants

Market Concentration

The market power hypothesis or structure – conduct – performance states that banking concentration is positively related to bank performance as high market power generates monopolistic profit (Bourke, 1989; Molyneux and Thornton, 1992). In addition, the collusion hypothesis support the positive relationship between bank concentration and performance under assumption that a small number of banks might be able to conspire, either explicitly or implicitly, helping banks raise low cost of capital such as lower interest rate on deposits and provide more expensive loans. This helps banks improve their profitability. Gilbert’s (1984) reviews 27 prior studies that provide supportive evidence that highly concentrated markets generate monopoly profits.

On the other hand, a Kosmidou (2008) figure out bank concentration is negatively related to bank profits. In addition, the studies of Osuagwu (2014), Roman (2013) and Karim
et al. (2010) also find supportive evidences for the negative relationship between market concentration and bank performance. This can be argued that increased bank concentration may cause inefficient operation and thus reduce profit. As the contradictory evidence, no a priori expectation is built with regard to the linkage between bank market concentration and profitability. We expect a positive relationship between bank profitability and market concentration under monopolistic profit that is quite common in transitional economy like Vietnam.

\textit{Inflation}

Many studies found that there is no supportive evidence on the impact of inflation on bank performance (Roman, 2013; Alper al et., 2011; Singh, 2010). On the other hand, Karim al et. (2010a, 2010b) illustrated the positive relationship between inflation and bank performance of Islamic banks in Syria. The authors investigate the impact of inflation on commercial banks in Vietnam as we want to explore how performances of Vietnamese domestic commercial banks change under high fluctuated inflation environment in recent year.

\textit{Refinancing rate}

Refinancing rate is considered as cost of intermediations. With under-developed banking system, it is expected that refinancing rate will be direct cost for those banks that do not manage risk well. We expect a negative relationship between refinancing rate and bank profitability.

3. METHODOLOGY

3.1 Data sample

In order to analyze the determinant of performance of banks in Vietnam, we use data of 32 commercial banks operating in Vietnam to get the bank-specific variables. These variables will be calculated from the financial statement from 2008 to 2013 using annual data. All 32 banks must have financial statement of at least 3 years.
We also used the data from General Statistics Office of Vietnam, International Finance Statistic to identify some industry and macroeconomic factors related to banks’ profitability.

3.2 Research model

3.2.1.1 Panel Data

Panel data, which is also called longitudinal or time-series cross-sectional data, is defined by Stock and Watson (2003) as a pooling observation on a cross-section of different sample over at least two periods. A panel data includes two major details: the information of cross-sectional related to the diversification of observed subject; and information of time-series which express the change of subject over different periods. Panel data is now applied widely for both academics sciences and social sciences. The purpose of panel data is to analyze the relation between many variables in financial, educational, or economic fields. There are some advantages of using panel data which are pointed out by Hsiao (2013) and Klevmarken (1989)

3.2.1.2 Diagnostic for Multicollinearity

Multicollinearity is one of the most common problems for regression modeling, thus detecting multicollinearity is an important task for every research, \( \beta \) coefficients cannot be recognized even though the value of explanatory variables is available along comparable regressors’ value. As a result, it is impossible to study the regression model. Multicollinearity is an unexpected characteristic of panel dataset. Higher standard errors are one consequence of multicollinearity, which make the estimated coefficients inefficient. The measure of variance inflation factor (VIF) is deployed. This indicator is defined as a multiplier estimator for coefficient of linear regression variables. VIF is used to gauge the variable tolerance, which is the proportion of variables variance that cannot be clarified by other variables. Besley, Kuh, & Welsch (1980) presents that VIF should be less than or equal to 10.

3.2.1.3 Diagnostic for Heteroskedasticity

One of the most important assumptions of OLS regression is that the residuals variance must be homogeneity. If the residuals variances are not identical through observations, the heteroskedasticity exists in the model. Furthermore, the existence of heteroscedasticity is the reason why OLS cannot give the smallest variance for the
estimation. Heteroscedasticity also cause biasness in standard errors, leading to the consequences of biased test statistics and interval of confidence. Greene (2000, p. 598) presents that heteroscedasticity among regression of fixed-effect can be recognized by utilizing Wald test. Wald test is implemented based on one-tailed Chi-square distribution. If p-value is lower than 0.01, we reject the null hypothesis and conclude that there is problem of heteroscedasticity. Heteroscedasticity can be test after fixed-effect is analyzed.

3.2.1.4 Diagnostic for Autocorrelation

The next assumption of Linear Regression Model is that covariance of error terms over time period is 0. In general, the errors should not be correlated with each other over time. Otherwise, the presence of autocorrelation would cause exaggeration to the effectiveness of the regression model. The standard error would be smaller than they actually are and R-squared value would be larger if autocorrelation exist in the model. However, Oscar Torrest-Reyna (2007) & Maryam Asghari (2013) claimed that autocorrelation is a serious issue for panel data with long period of about 20 or 30 years, while panel data within a few years is not affected by this problem.

3.2.1.5 Newey-West Standard Error

Regarding the heteroskedasticity and autocorrelation in regression model, it is critical to modify the model to reduce the biasness originated from these frictions. Therefore, we would apply regression of Newey-West standard errors to produce more reliable results.

3.2.1.6 Dependent variable

In general, there are two common methods to evaluate the profitability of commercial banks that are Return on Equity (ROE) ratio and Return on Asset (ROA). ROE reflects the actual assessment of the earning from the owner’s investments that is most concerned by shareholders. The leverage strategy can increase ROE significantly, yet bring a bank to dangerous situation (Euro Central Bank, 2010). It can be seen from the chart below that when ROA was quite stable from 2002 to 2007, the ROE was almost triple its value for the same period, which was backed up by the significant increase in leverage. As a result, ROE is sensitive to risk leverage.
Second, the previous crisis has proved that ROE failed to distinguish between the best banks and the others in term of the sustainable ability to generate revenue. There were evidences about the homogeneity in the banks’ profitability a quarter before the financial crisis (a high degree in ROE). In particular cases, banks with the best ROE were most influenced by the crisis. Therefore, it was not convinced to use ROE to recognize banks with best performance regarding sustainability of their outcome. ROE should be viewed as a temporary index and should be understand as a current state of the institutions since it does not consider any long-term effects.

On the other hand, ROA can be used to measure performance of banks as it reflects efficiency of using total assets and not subject to high leverage strategy. ROA seem being more suitable measurement in banking industry as it consider a sustainable development rather than focusing only on which shareholders want. However, the ROA does not provide information to the bank’s owners or equity holders.

In conclusion, we are motivated to investigate performance measurement as only sound and profit banking sector that can tolerate negative shocks and contribute to stability of financial systems and economic growth. As a result, we use ROA to measure bank performance. Our model is built as following:
\[ ROA = \beta_{ETA} ETA_{it} + \beta_{SIZE} SIZE_{it} + \beta_{RISK} RISK_{it} + \beta_{MEFF} MEFF_{it} + \beta_{NII} NII_{it} \\
+ \beta_{HHI} HHI_{it} + \beta_{INF} INF_{it} + \beta_{RFR} RFR_{it} + \varepsilon_{it} \]

### 3.2.1.7 Independent Variables

Capital adequacy (ETA): measured by Equity to Total Assets Ratio
Credit Risk (RISK): measured by the loan-loss provision to loan ratio (Athanasoglou, 2005).
Bank Size (SIZE): measured by the natural logarithm of total assets.
Management Efficiency (MEF): The technical efficiency scores are calculated by applying non parametric data envelopment analysis (DEA) (Charnes, Cooper, and Rhodes 1978).
Income structure (NII): measured by Non-Interest Income over Total assets.
Commercial Banks Market Concentration (HHI): Our measure of the market concentration is based on the Herfindahl-Hirschman Index. This index illustrates the number of competition among one specific industry. The HHI value is the sum of the squares of the market shares of each firm weighted by the market share. Value for \( HHI \) can be between 0 and 1. The HHI index close to one implies the monopoly market, which means there is weak competition, while a HHI index of 0 express perfect competitions.
Annual Inflation Rate (INF): Annual inflation rate would be acquired from World Bank statistics.
Refinancing rate from State Bank of Vietnam (RFR): Collected from International Financial Statistics

### 4. RESULT AND DISCUSSION

#### 4.1 Descriptive Statistic
The table above presents the descriptive statistic of the dependent and independent variables. It can be seen that the mean for SIZE is largest since the value of total asset of commercial bank is usually large.

### 4.2 Correlation Matrix for independent variables

<table>
<thead>
<tr>
<th></th>
<th>ETA</th>
<th>DPS</th>
<th>RISK</th>
<th>SIZE</th>
<th>LIQ</th>
<th>NIM</th>
<th>NII</th>
<th>HHI</th>
<th>INF</th>
<th>RFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETA</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPS</td>
<td>-0.511</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RISK</td>
<td>-0.0847</td>
<td>0.1345</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.6917</td>
<td>0.0868</td>
<td>0.0441</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIQ</td>
<td>-0.1568</td>
<td>0.0648</td>
<td>-0.0450</td>
<td>0.1798</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIM</td>
<td>0.5869</td>
<td>-0.3474</td>
<td>-0.0076</td>
<td>-0.1847</td>
<td>-0.1519</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NII</td>
<td>-0.0920</td>
<td>0.0422</td>
<td>-0.0430</td>
<td>0.0453</td>
<td>0.1756</td>
<td>-0.2971</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HHI</td>
<td>0.1265</td>
<td>0.1839</td>
<td>0.0784</td>
<td>-0.3414</td>
<td>0.2205</td>
<td>-0.0964</td>
<td>0.2764</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INF</td>
<td>0.0551</td>
<td>0.0315</td>
<td>0.1012</td>
<td>-0.1443</td>
<td>0.1219</td>
<td>-0.0065</td>
<td>0.0517</td>
<td>0.4696</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>RFR</td>
<td>-0.0390</td>
<td>-0.1112</td>
<td>0.0082</td>
<td>0.0334</td>
<td>-0.0052</td>
<td>0.0945</td>
<td>-0.0543</td>
<td>-0.0652</td>
<td>0.7127</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Overall, there is no issue with the correlation between independent variables, as our coefficients are within the acceptable zone.
4.3 Test for Multicollinearity

Our result for VIF shows no evidence of multicollinearity in our regression model.

4.4 Test for Heteroscedasticity and Autocorrelation

Modified Wald test for groupwise heteroskedasticity in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

\[ \chi^2 (32) = 2023.91 \]
\[ \text{Prob} > \chi^2 = 0.0000 \]

Wooldridge test for autocorrelation in panel data

H0: no first order autocorrelation

\[ F(1, 31) = 4.563 \]
\[ \text{Prob} > F = 0.0407 \]

It can be concluded that there is existence of Heteroscedasticity and Autocorrelation in our regression model, thus we would implement the Newey-West Standard Error regression to reduce the biasness.
4.5 Result and discussion

| ROA  | Newey-West Coef. | Std. Err. | t    | P>|t|  | [95% Conf. Interval] |
|------|-----------------|-----------|------|-------|---------------------|
| ETA  | .0655434        | .0232381  | 2.62 | 0.005 | .0196766            | .1114102  |
| RISK | .0125866        | .0034321  | 3.67 | 0.000 | .0058125            | .0193606  |
| SIZE | .00099          | .0009609  | 1.03 | 0.304 | -.0009606           | .0028865  |
| NII  | .3999772        | .1374329  | 2.91 | 0.004 | .128716             | .6712384  |
| HHI  | .2158215        | .0626104  | 3.45 | 0.001 | .0922428            | .3394001  |
| INF  | -.0664632       | .0137075  | -4.65| 0.000 | -.0935187           | -.0394078 |
| MEF  | .01044          | .0047093  | 2.22 | 0.029 | .001145             | .019735   |
| RFR  | .1728604        | .0287615  | 6.01 | 0.000 | .1160917            | .2296291  |
| _cons| -.0399762       | .0085353  | -4.68| 0.000 | -.056623            | -.0231295 |

In consistent with previous studies of Francis (2013), Perera et al. (2013), the effect of capital adequacy is found to have positive relation with profitability. It can be stated that that banks with high capital ratio can acquire their fund at a lower cost and less risky than regular source of funds (Bourke, 1989). Furthermore, efficient banks seem to have higher capital ratio in order to protect their future income resulting from high profit efficiency (Berger et al., 2006). The assumption of symmetric information may also explain the positive relationship between capital adequacy and profitability (Myers & Majluf, 1984). Finally, in reality, Vietnamese people apparently has a tendency to assimilate well-capitalized banks to their better reputation and a lower level of bankruptcy, this public general belief may also provide an edge to these banks in the market. Therefore, the effect of capital adequacy is significant to determine a positive relation with banks’ profitability and performance in overall.

The effect of bank size on profitability is not found, proving that there is no evidence of economies of scale among domestic commercial banks in Vietnam. It can be explained that the size of bank as a product of policy government or history may lead to inefficient operation. The argument is that the efficiency may not occur in too big banks that are state-owned banks or too small banks that have just established in recent year under the waves of privatization capital market. This is in line with study of However, Goddard et al. (2004) that find the evidence of economics of scale in relatively low level of asset size and diseconomies of scale at high assets level. Existing big gap in size among banks with many too small size
banks had been issue in the recent year. As a result, the Vietnamese government imposed the strictly capital requirement for banks by forcing small banks have to merger or reduce their scopes. In addition, Vander Vennet (1998) and Pallage (1991) show that diseconomies of scale can exist in large banks. This is found in Vietnam for some large and state – owned banks that have high ratio of non – performing loans.

Surprisingly, the unexpected positive relationship between bank profitability and credit risk is found. This is contradictory with the almost of prior researches(Frederick, 2014; Karim et al., 2010a, 2014b; Kosmidou, 2008; Brissimis and Delis, 2008; Roman and Danuletiu, 2013; Osuagwu, 2014). The positive relationship between bank profitability and credit risk can be argued thatcommercial banks in Vietnam have applied a risk-seeking strategy in lending activities in recent years. The higher the risks, the higher the return that banks expects from their investment. Indeed, there are evidences for this situation in Vietnam. According to the Announcement of State Bank of Vietnam in 2012, the rate of non-performing loan was still increase at the end of 2012. Risky investment can result in non-performing loan if the monitoring activities are not carried out strictly. Therefore, together with our research in Vietnam, these figures pointed out that commercial banks in Vietnam were following risky strategy to earn more revenue, which is explained by the high rate of non-performing loan. Another explanation is the procedure of categorizing loan performance that is mainly based on title of borrowers rather than the risk level of projects themselves. There is a fact that state – owned enterprises or state – sponsored projects are typically classified as less risky investment, and loans that provide to private or small and medium enterprises are considered as risky investment. As a result, loan loss provision measure may not reflect fully non – performance loans of commercial banks in Vietnam. Evident by the report on the Banking System Outlook: Vietnam of Moody’s on February 18, 2014, the rate of non-performing loan was approximate 15% of total assets, much larger than number reported by the government at 4.55% in 2013.

There is no surprising result for the income structure (NII). Banks diversifying activities beyond traditional lending operations generate higher profit by increasing non-interest income. This is the sign that commercial banks are changing strategy. Credit activities is not the only priority, banks also want to target the services sector and other non-
interest activities of commercial banks. This will consist of the improvement in customer services, customer relationship management, or portfolio investment. In fact, non-interest earning is safer than interest earning. If banks can take advantages and focus more on this segment, they can reduce significantly the risk related to loans. Thus, State Bank of Vietnam has issued document No. 1778/NHNN-VP date 24/03/2015 in order to encourage commercial banks to follow this strategy.

The management efficiency also shows positive and statistically significant relationship with the performance of banks. This is consistent with the finding of Perera et al. (2013) which also uses Data Envelopment Analysis instead of expense ratio to measure efficiency. It is clear that banks managing their resource efficiently can achieve better result than others. Minimize input and maximize output is the target. Therefore, profitability has positive relationship with management efficiency.

In the case of Market Concentration Index (HHI), the coefficient is positive and statistically significant, supporting to market – power hypothesis. An increase in market concentration has positive influence to the profitability of commercial banks since banks can earn monopolistic profit. In addition, the collusion hypothesis can be used to support the findings with assumption that a small number of banks might be easier to conspire, either explicitly or implicitly, helping banks achieve lower interest rate on deposits and provide more expensive loans. This helps banks improve their profitability.

Inflation showed a negative and statistically significant relation with profitability. This indicates that banks in Vietnam appear to have weaknesses in the reaction to inflation; in other words, Vietnamese banks seem to be slow in changing their interest rate with inflation. Under high and more volatile inflation circumstance, banks face difficulties in attracting money from depositors as they may allocate their capital in gold that is considered a safe heaven of value store against inflation (Ho et al., 2015). In addition, due to weak ability of forecasting expected inflation, for safe purpose, banks may offer higher lending interest rate to compensate for inflation and avoid the risk of loss from unexpected inflation. As a result, capital inflows and outflows of banks seem being frozen, affecting negatively to bank performance. If banks can anticipate expected inflation effectively, inflation and profitability should have positive relationship, generating positive real return.
Regarding the Refinancing rate from State Bank (RFR), there are positive and statistically significant relation between RFR and performance of banks. It can be seen that when State Bank of Vietnam increase the refinancing rate, there is indirect positive pressure to the profitability. Bank must consider more carefully when making any decision. The lending activities are one example. Banks will be more strictly when choosing borrowers. Because the cost of refinancing is high, banks do not want to lose their funds to bad borrowers. Therefore, the credit growth would slow down and credit risk would decrease as an indirect effect. Less risk means that banks can have better performance.

5. CONCLUSION

This study implemented panel data model in order to discover the relationship between the determinant factors and the performance of 32 commercial banks in Vietnam from 2008 to 2013. The Capital Adequacy shows positive and statistically significant with performance. Regarding the credit risk, our result is inconsistent with other authors. It shows negative and significant relationship with performance. Bank size is not important in determining profitability, this explained that economies of scale do not exist in commercial banks in Vietnam or banks in Vietnam cannot take this advantage to increase performance. Management efficiency also reflected positive and significant relation with performance. As market concentration increase, it put positive pressure on the performance. Concerning the macroeconomic factors, the inflation does show a negative influence to banks’ performance, while refinancing rate implies a positive and significant relationship.

The limitation of this study is that there are other factors which are not measured and analyzed in the model due to the limitations of available data and resource constraints. For further research, we would like to improve the result by consider two more important determinants which are remarkable for the banking industry in Vietnam. Type of Ownership and the event of financial crisis should be concern in order to provide the best analysis of commercial banks in Vietnam.
REFERENCES


