COMPETITION AND EFFICIENCY OF SELECTED UNIVERSAL BANKS IN THE PHILIPPINES FOR THE YEAR 2011

Edralin Lim
De La Salle University

ABSTRACT

The researcher based his sample on nine universal banks in the Philippines from 2003 to 2011. This research used a correlational analysis to determine the relationship between competition and bank efficiency. The scope of the study is limited to the removal of entry barriers which is one of the six policies of financial liberalization that allowed the entry of the ten foreign banks. To assess the competition among universal banks, Herfindahl index (HI) was used. The study showed that financial liberalization brought greater competition, improved efficiency and less market concentration. It showed that Herfindahl index is negatively related with net interest margin to assets and loan to asset ratio. It also showed that Herfindahl index is positively related with provision for loan losses ratio.

Keywords: Competition; Efficiency; Financial Liberalization

INTRODUCTION

Three significant events begin the enormous reformation in the Philippine banking industry for the past twenty years. These are the Bank Liberalization Act in 1994, the General Banking Law in 2000 and the mergers and acquisitions from 1998 to 2012.

In 1994, the Ramos administration passed the Republic Act No. 7721 or the Banking Liberalization which allowed the entry of ten foreign offshore banks. In 2000, former President Joseph Estrada signed the Republic Act No. 8791 or General Banking Law of 2000 which is an act for the regulation of the organization and operations of banks, quasi-banks, trust entities and for other purposes. Such reforms increased competition (Claessens & Laeven, 2003; Njie, 2006; Ribon & Yosh, 2001). Increasing the level of competition will result into reducing interest spreads. (Njie, 2006; Pasadilla, 2004; Unite & Sullivan as cited in Dacanay, 2007). However, Yee, Sakinah & Mohamad (2009) found that Malaysian domestic banks’ interest margin have not limited with financial liberalization. High competition will expand the loan loss provisions and loans that local banks become less prudent in approving the loan of the borrowers to compete with the foreign banks (Unite & Sullivan, 2001). On the other hand, Chen (2005), Kim (2005) and Kim & Lee (2004) revealed that a decrease in loan loss provisions is a result of better asset quality. Financial liberalization broadened availability of credit supply to domestic investors (Reinhart & Tokatlidis, 2002). Unite and Sullivan (as cited in Pasadilla & Milo, 2005) found that foreign bank entry corresponds with improvements in operating efficiencies.

Pasadilla and Milo (2005) showed sixteen mergers from 1998 to 2003. Four more mergers were made from 2004 to 2012, namely: Bank of the Philippine Islands and Prudential Bank in 2005, Union Bank and International Exchange Bank in 2006, Banco de Oro and Equitable PCI Bank in 2007 and Philippine National Bank and Allied Bank in 2012. This development is relative to expected increased in competition from foreign banks and an outcome from the Bangko Sentral ng Pilipinas’ (BSP) call for mergers and acquisitions of local banks to meet higher capital requirements. BSP also required a schedule of increases in banks’ minimum capital requirements from 1995 to 2000.
To show how domestic universal banks deal with competition, the paper aims to examine the competition and efficiency of domestic universal banks from 2003 to 2011. The researcher uses the Herfindahl index (HI) to measure the degree of competition of universal banks in the Philippines and correlates HI with net interest margin to assets, provision for loan losses ratio and loan to assets.

**REVIEW OF RELATED LITERATURE**

**Liberalization**

Aizenman (2002) emphasized that financial liberalization boosts the competition in banking industry. This situation may lead to a short-run consequence of financial difficulty among banks. Raised competition may cause banks to be frail. As for the long-run impact, financial liberalization is of great advantage to the banking industry to obtain progress. It promotes growth in banking sector. The stiff competition encourages banks to operate in the most efficient way possible to ensure their existence.

Furthermore, previous studies showed that financial liberalization helps in attaining development in financial sector - where in banks were said to be efficient (Bekaert, Harvey & Lundblad, 2005), savings were backed up by the increased real interest and the broadened availability of credit supply to domestic investors (Reinhart & Tokatlidis, 2002). Nevertheless, the possibility to undergo financial crisis is still probable.

In Malaysia, some of the factors that had caused crisis to its banking sector were the foreign exchange reserve ratio, banks’ lending rates and financial liberalization. Yee, Sakina and Mohamad (2009) found that liberalization affected banks negatively and that they became less productive after liberalization.

In the Philippines, the administrations of financial institutions adopt more liberalized financial system in order to keep up with the developing trend in globalization present in the financial institutions (Suliek, 1993). Laeven (as cited in Hermes and Nhung, 2007) stated the implemented financial liberalization policies in six different areas in the Philippines namely: removal of credit controls (1983), liberalization of interest rates (1985), introduction of prudential regulation (1993), removal of entry barriers (1994), lowering of reserve requirements (1994) and privatization of state-owned banks (1996).

Republic Act 7721 or Banking Liberalization gave privilege to the ten foreign banks to enter our country. As revealed by Hapitan (2003) in his survey, the coming of the foreign banks had caused a great number of clients to transfer accounts from local banks to foreign banks. Added to this, competent employees of the local banks seek employment in foreign banks due to bigger salary offer. However, these foreign banks diversified bank services in the Philippines. They brought technological advancement. They opened doors for more job opportunity. The entry of the foreign banks to the Philippines brought challenge to the local banks to level up with the system and technology of the foreign banks.

**Liberalization and Competition**

The study of Pasadilla and Milo (2005) discussed about the impact of liberalization on bank competition. They focused on moderating the restrictions in the banking industry of the Philippines particularly bank entry and branching in the 1990s that gave way to the fast expansion of the Philippine Banking System. From 1990 to 1999, the banking services were made more available due to the doubled number of branches of all types of banks. However, bank failures and consolidation resulted to closure of several head offices of thrift and rural banks. Results showed that most of increase in competition came from small banks.

Pasadilla (2004) stated that the financial liberalization in the 1990s helped increase the competition among banks although banks engaged in mergers. No cartel is manifested even with the existence of few large universal banks and several small banks. Furthermore, these small banks have sustained the level of competition to large banks.

Montinola and Moreno (as cited in Pasadilla & Milo, 2005) classify the relatively minor effect on competition and efficiency to the narrow scope of
Dacanay (2007) stated that the statutory limit of six branches for foreign bank does not fully make the sector competitive. Yee, Sakinah and Mohamad (2010) recommended that the discreet supervision and regulation should go with the method of financial liberalization. Lee (2002) emphasized that privatization of local banks is a requirement to promote foreign entry. Lastly, Denizer (1997) suggested that encouraging competition will require dealing with barriers to entry and mobility. The primary barrier to mobility appears to be the size of the large banks, which put forth a significant negative impact on competition. Establishing new banks of a certain size with an adequate number of branches will aid the competition with the top banks.

Liberalization and Bank Efficiency

Unite and Sullivan (2001) pointed out that the entry of foreign banks influences the increase in operating efficiencies of domestic banks. This was proven by the decrease in the operating expenses and loan portfolios of banks. The findings of Unite and Sullivan propose that liberalization produces greater efficiency. The increase in loan loss provisions connected with the foreign banks entry verifies the issue that local banks become less discreet in extending loans to clients to keep up with the tight competition with the foreign banks.

A number of authors conform that financial liberalization explicitly affects the efficiency of banks. Increased bank efficiency can also manifest in the high competition prevalent in the banking sector, in the new technology being patronized and in the new features of products intended to reach various kinds of consumers (Meso & Kaimo, 2008). The existence of foreign banks urges local banks to diminish costs, to improve efficiency and to develop diverse financial services. Local banks are required to deliver better service to maintain their market (Lensink & Hermes, 2003).

Fathi (2010) showed that high competition in the banking industry promotes efficiency among banks. To survive the competition, domestic banks are driven to enhance their productive efficiency. However, with the existence of the foreign banks, the competition in the banking industry is more likely to be unmanageable to the local banks according to Fathi. The most efficient banks would win more valuable clients and establish more stable position in the market. As a result, the local banking sector may possibly be controlled by the foreign financial institutions.

Measure of Competition

Krishnamurthy (2000) defines Herfindahl index (HI) as “a simple, yet sophisticated way of measuring industry concentration”. Liston-Hayes and Pilkington (2004) defines HI as “the sum of the squares of the market shares of the 50 largest firms (or summed over all the firms if there are fewer than 50) within the industry.

This procedure takes into account the number of firms in a given industry and the entire size distribution of the firms. Herfindahl Index may be further examined by enumerating it as follows:

$$HI = \sum_{i=1}^{n} S_i^2$$

Where: 
- \(n\) = number of market participants
- \(S_i\) = market share of participant \(i\)

HI has a value less than one. A competitive industry gains small index result. On the contrary, large index or an index equal to one implies that the industry is passive or there is a monopolistic behavior.

Measures of Bank Efficiency

Kim (2005) illustrated a number of variables to identify the bank efficiency among banks. These variables are net interest margin to total assets, loan to asset ratio and provision for loan losses ratio.

Net interest margin to total assets (NIM/TA). Abdelaziz, Mouldi and Helmi (2011), Demirguc-Kunt and Huizinga (1999), and Kim (2005) used the Net Interest Margin to Total Assets Ratio (Net Interest Income / Total Assets) to measure the profit efficiency. Kim (2005) emphasized that local banks have a tendency to
reduce their net interest margin. This is caused by the higher overhead cost resulting from competition in short-term basis. Nevertheless, local banks are more likely to be cost efficient in their operation in the long run. Several studies (Njie, 2006; Pasadilla, 2004; Unite & Sullivan as cited in Dacanay, 2007) stated that increasing the level of competition will result into reducing interest spreads. On the other hand, Yee, Sakinah and Mohamad (2009) found that Malaysian domestic banks’ interest margin have not limited with financial liberalization.

**Loan to asset ratio (LAR).** This indicates how much asset is used to supply the loan operation of the bank. Income generated from the loan operation of the bank is larger than any leading activities of the bank (Kim, 2005). Loans signify the major part of the company’s profits as stated by Dacanay (2007). Local banks become less discreet in extending loans to clients to keep up with the tight competition with the foreign banks. This results to higher loans and higher profitability (Unite & Sullivan, 2001). Financial liberalization stretches accessibility of credit supply to local investors, as well (Reinhart & Tokatlidis, 2002).

**Provision for loan losses ratio (PLLR).** This presents information on how the bank manages its loan portfolio. Increase in competition will increase the loan loss provisions that local banks become less discreet in extending loans to clients to keep up with the tight competition with the foreign banks (Unite & Sullivan, 2001). On the other hand, Chen (2005), Kim (2005) and Kim & Lee (2004) revealed that a decrease in provision for loan losses is a result of better asset quality.

**HYPOTHESIS**

**H1:** Herfindahl Index is significantly related to Net Interest Margin to Total Assets

**H2:** Herfindahl Index is significantly related to Loan to Asset Ratio

**H3:** Herfindahl Index is significantly related to Provision for Loan Losses Ratio

**FRAMEWORK**

Liberalization refers to the course of action in which the government detaches the economy from its control. It may also be defined as the autonomy to hold economic activities locally or in abroad (Ognivstev, 2005). The governing body takes away any infiltrator in the capital markets and financial markets. It eliminates impediments in trading that brings better chances to encourage various players. What makes liberalization different from deregulation is that deregulation is reducing, simplifying and or disposing of the government limitations on business to promote efficiency and to create competition. On the other hand, liberalized markets permit the involvement of the limitless number of market players to increase competition and to provide protection to the end consumers.

The Liberalization act seeks to bring out an independent national economy which is efficiently administered by the citizens of the Philippines. The act is intended to free the economy from any political influence. In order to benefit from liberalization and to maintain economic stability, the banking industry needs continuous excellent performance to withstand the consequences brought by liberalization and to attain efficiency, effectiveness and competitiveness. Liberalization broadens the chances for the provision of wider financial services to local businesses, households and individuals. It brings connections and alliance with foreign investors. It strengthens relations with universal financial centers. It promotes competitiveness in the international market. It leads to industrialization (Bangko Sentral ng Pilipinas, 2010).

This study adapted from the article of Pasadilla and Milo (2005) gauged competition using the Herfindahl index. Using the formula:

$$HI = \sum S_i^2$$

To study the competition and bank efficiency after the removal of entry barriers (R.A. 7721), the research used the correlation analysis in determining the following relationships: Herfindahl index and net interest margin to asset ratio, Herfindahl index and loan to asset ratio, and
Herfindahl index and provision for loan losses ratio.
Below is the research framework of the study.

FIGURE 1
The Research Framework

The Variables and Expected Relationships
1. **NIM/TA = f(HI)**

A negative relationship is expected. It is expected of NIM/TA not to follow the same direction as the changes in HI. The lower the HI, the higher is the NIM/TA. The stiff competition encourages domestic banks to operate in the most efficient way possible to ensure their existence. (Aizenman, 2002; Kim, 2005; Unite & Sullivan as cited in Pasadilla & Milo, 2005). Local banks become less discreet in extending loans to clients to keep up with the tight competition with the foreign banks. This results to higher loans and higher profitability (Unite & Sullivan, 2001).

2. **Loans/TA = f(HI)**

A negative relationship is expected. It is expected of Loans/TA not to follow the same direction as changes in HI. This is based on the findings of Unite & Sullivan (2001). This is consistent with the findings of Reinhart and Tokatlidis (2002) that financial liberalization broadens availability of credit supply to domestic investors.

3. **PLL/Loans = f(HI)**

A positive relationship is expected. It is expected of PLL/Loans to follow the same direction as changes in HI. A decrease in provision for loan losses ratio is a result of better loan quality and stability (Chen, 2005; Kim, 2005; Kim & Lee, 2004).

METHODOLOGY

The study utilizes correlation analysis. It intends to analyze the relationship between bank efficiency measures (NIM/TA, loan to asset ratio and provision for loan losses ratio) and competition (Herfindahl index) after the entry of foreign banks in the Philippines.

The researcher focuses on the banks categorized by the Bank Sentral ng Pilipinas (BSP) as universal banks. BSP (2010) defines universal banks as “banks that offer the widest variety of banking services among financial institutions. In addition to the function of an ordinary commercial bank, universal banks are also authorized to engage in underwriting and other functions of investment banking.”

### TABLE 1
Market Share of Domestic Universal Banks Based on Total Assets

<table>
<thead>
<tr>
<th>BANK</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>5.1%</td>
<td>5.0%</td>
<td>4.6%</td>
<td>4.4%</td>
<td>3.9%</td>
<td>4.1%</td>
<td>4.0%</td>
<td>3.0%</td>
<td>2.9%</td>
</tr>
<tr>
<td>BDO</td>
<td>5.6%</td>
<td>6.1%</td>
<td>7.4%</td>
<td>17.7%</td>
<td>16.4%</td>
<td>18.8%</td>
<td>18.4%</td>
<td>18.9%</td>
<td>18.5%</td>
</tr>
<tr>
<td>BPI</td>
<td>15.6%</td>
<td>16.0%</td>
<td>16.7%</td>
<td>16.4%</td>
<td>16.9%</td>
<td>15.6%</td>
<td>15.5%</td>
<td>16.6%</td>
<td>11.9%</td>
</tr>
<tr>
<td>CBC</td>
<td>3.9%</td>
<td>3.9%</td>
<td>4.2%</td>
<td>4.4%</td>
<td>4.7%</td>
<td>4.9%</td>
<td>5.0%</td>
<td>4.9%</td>
<td>4.5%</td>
</tr>
<tr>
<td>MHTC</td>
<td>18.7%</td>
<td>17.9%</td>
<td>18.5%</td>
<td>18.3%</td>
<td>19.0%</td>
<td>17.9%</td>
<td>18.3%</td>
<td>16.7%</td>
<td>13.0%</td>
</tr>
<tr>
<td>PNB</td>
<td>7.4%</td>
<td>7.5%</td>
<td>7.0%</td>
<td>6.9%</td>
<td>6.4%</td>
<td>6.5%</td>
<td>6.1%</td>
<td>5.7%</td>
<td>5.5%</td>
</tr>
<tr>
<td>PTC</td>
<td>1.4%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.6%</td>
<td>1.7%</td>
<td>1.7%</td>
<td>1.8%</td>
<td>1.8%</td>
<td>1.8%</td>
</tr>
<tr>
<td>RCBC</td>
<td>6.9%</td>
<td>6.2%</td>
<td>5.8%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>6.2%</td>
<td>6.0%</td>
<td>6.0%</td>
</tr>
<tr>
<td>UBP</td>
<td>2.9%</td>
<td>3.5%</td>
<td>3.4%</td>
<td>5.2%</td>
<td>5.2%</td>
<td>4.8%</td>
<td>5.2%</td>
<td>4.8%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Total Market Share</td>
<td>67.5%</td>
<td>67.6%</td>
<td>69.1%</td>
<td>81.2%</td>
<td>80.5%</td>
<td>80.6%</td>
<td>80.5%</td>
<td>78.4%</td>
<td>68.8%</td>
</tr>
</tbody>
</table>
houses and to invest in equities of non-allied undertakings”. As of now, there are twenty (20) universal banks. However, the researcher was only able to complete the data from 2003 to 2011 of the 9 banks specifically, Allied Banking Corporation (ABC), Banco de Oro Unibank, Inc. (BDO), Bank of the Philippine Islands (BPI), China Banking Corporation (CBC), Metropolitan Bank & Trust Company (MBTC), Philippine National Bank (PNB), Philippine Trust Company (PTC), Rizal Commercial Banking Corporation (RCBC), and Union Bank of the Philippines (UBP). Total market share based on total assets is more than 65% of the universal banks’ total assets which is a good representative of the whole universal banks. All figures of the said banks are retrieved from OSIRIS database and Securities and Exchange Commissions (SEC).

RESULTS AND DISCUSSION

Competition

The researcher used the Herfindahl Index (HI) to measure competition. Competition and Herfindahl index are inversely related. An increase in the HI shows a decrease in competition and a decrease in HI illustrates an increase in competition.

The above graph depicts the fluctuating Herfindahl Index. Over the nine-year period, HI had decreased from 0.108 in 2003 to 0.098 in 2011. With regards to competition with foreign banks, the combined 2011 market share of the 6 foreign universal banks was 6.5% based on total assets. In terms of branching, foreign banks were limited up to 6 branches in the Philippines. On the other hand, 4 universal banks had 2-digit market share specifically, BDO (18.5%), MBTC (13.0%), BPI (11.9%) and LBP (11.8%). These results were consistent with the findings of Pasadilla (2004) that no cartel is manifested even on the existence of few large universal banks and several small banks. In addition, these small banks have sustained the level of competition to large banks.

In terms of technology, leading banks are at par with the foreign banks. A good example is BPI that offers touch-screen ATMs and deposit transactions at all ATMs sites. All universal banks are offering mobile banking to their clients. This supports the findings of Hapitan (2003) that the entry of the foreign banks to the Philippines brought challenge to the local banks to level up with the system and technology of the foreign banks.

Herfindahl Index and Net Interest Margin to Total Assets Ratio

The 9 domestic universal banks continued to increase their net interest margin over the period 2003 to 2011. These banks improved their net interest margin to total assets over the period 2003 to 2011 except CBC, PTC and UBP. The data proved that majority of these banks were successful in improving their interest spread and in competing with foreign banks.

Table 2

Table 2 indicates that the Herfindahl Index and the Net Interest Margin to Total Assets ratio move together 23.3 percent of the time, but the negative sign attached to that scalar .233 means that the two variables move in the opposite direction, in
accordance with the *a priori* expectations of this paper (Unite and Sullivan, 2001). The error of rejecting a correct null hypothesis (that the Herfindahl Index is not correlated with the Net Interest Margin to Total Assets ratio) is .036 or thirty-six times in a thousand trials.

For this paper, the significance test of 5 percent indicates that five errors in a hundred are already acceptable but the test results are even better.

The results showed that the 9 domestic banks maintain to increase profits (increasing NIM/TA values) as the competition increases (decreasing HI values). These banks find ways to compete with foreign universal banks as well with each local universal bank. They offer competitive pricing. They continue to attract more clients because depositors can withdraw their money anytime at ATM sites of their bank. Unlike deposits in foreign banks with limited branches, a depositor will pay Php11 for every ATM transaction made at ATMs of domestic banks.

The cost of raising deposits is lower than the cost of raising capital (Dacanay, 2007). Thus, improves the interest margin of domestic banks as these banks accept more deposits from their clients.

**Herfindahl Index and Loan to Asset Ratio**

The 9 domestic universal banks maintained to increase their loans over the period 2003 to 2011. These banks enhanced their loan to asset ratio over the period 2003 to 2011 except PTC and RCBC. The data proved that majority of these banks were successful in increasing their loans and in competing with foreign banks.

### Table 3

<table>
<thead>
<tr>
<th>HI</th>
<th>LOANS_TA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-.177</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.058</td>
</tr>
<tr>
<td>N</td>
<td>81</td>
</tr>
</tbody>
</table>

Table 3 indicates that the Herfindahl Index and the Loan to Asset ratio move together 17.7 percent of the time, but the negative sign attached to that scalar .177 means that the two variables move in the opposite direction, in accordance with the *a priori* expectations of this paper (Unite and Sullivan, 2001; Reinhart and Tokatlidis, 2002).

The error of rejecting a correct null hypothesis (that the Herfindahl Index is not correlated with the Net Interest Margin to Total Assets ratio) is .058 or fifty-eight times in a thousand trials.

For this paper, the significance test of 10 percent indicates that ten errors in a hundred are already acceptable but the test results are even better.

The results showed that the 9 domestic banks continue raising their loans (increasing Loans/TA values) as the competition increases (decreasing HI values). These banks offer competitive loan pricing that catch the attention of clients. Income from loans is more than the investment in bonds and other debt instruments (IBODI) that increase the banks’ profits.

### Herfindahl Index and Provision for Loans Losses Ratio

The domestic universal banks maintained to decrease their provision for loan losses over the period 2003 to 2011 except BDO, CBC, PTC and UBP. Nine banks enhanced their provision for loan losses ratio over the period 2003 to 2011. The data proved that these banks were successful in decreasing their loan loss provision ratio and in competing with foreign banks.

### Table 4

<table>
<thead>
<tr>
<th>HI</th>
<th>PLL_LOANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.445**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>81</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the .01 level (2-tailed)

Table 4 indicates that the Herfindahl Index and the Provision for Loan Losses ratio move together 44.5 percent of the time, in accordance with the *a priori* expectations of this paper (Chen, 2005; Kim, 2005; Kim & Lee, 2004). This means that
the provision for loan losses in relation to total loans granted has also been decreasing over time, from 2003 through 2011.

The error of rejecting a correct null hypothesis (that the Herfindahl Index is not correlated with the Provision for Loan Losses ratio) is .000 or zero times in a thousand trials.

For this paper, the significance test of 1 per cent indicates that one error in a hundred is already acceptable but the test results are even better.

The results showed that the 9 domestic banks maintain to decrease their provision for loan losses ratio (decreasing PLL/Loans values) as the competition increases (decreasing HI values). This means that a decrease in provision for loan losses is a result of better asset quality, paying interbank borrowing on time and prompt submission of financial statements to Securities and Exchange Commision (SEC) which contribute more profits to banks.

CONCLUSION

Banking liberalization appears to have a positive impact on the banking industry. A gradual decrease in Herfindahl index as a measure of competition among universal banks is shown. This implies that small banks have sustained the level of competition to large banks even with the existence of few large universal banks and several small banks. Domestic universal banks are investing in technology to be at par with the system and technology of foreign banks. Wide variety of services will then increase the consumer’s preference in choosing the bank that will suit their taste.

Competition is found to improve the bank efficiency. A significant negative relationship between Herfindahl index and net interest margin to total asset ratio is found based on correlation results. The outcome supports the findings of Unite and Sullivan (2001). Domestic banks offer competitive pricing and attract more depositors because of strategic location of ATM sites. This gets more deposits and improves the interest spread of these banks.

A significant negative relationship between Herfindahl index and loan to asset ratio is found based on correlation results. The outcome is consistent with the findings of Unite and Sullivan (2001), Reinhart and Tokatidis (2002) and Yee, Sakinah and Mohamad (2010). Domestic banks continue raising their loans because they offer competitive loan pricing. Thus, increase the banks’ profit.

A significant positive relationship between Herfindahl index and provision for loan losses ratio is found based on correlation results. The outcome is consistent with the findings of Chen (2005), Kim (2005) and Kim and Lee (2004). A decrease in provision for loan losses is a result of better asset quality, paying interbank borrowing on time and prompt submission of financial statements to Securities and Exchange Commision (SEC) which contribute more profits to banks.

Further study is still considered necessary. A research can be made in other methods of estimating competition such as Panzar-Rose structural approach, Bresnahan model and Lau model. A study can focus on different types of banks. A comparison of competition before and after the entry of foreign banks can also be made.

REFERENCES


