

THE CAMEL RATING SYSTEM IN BANKING SUPERVISION A CASE STUDY

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| <p>Abstract:</p> <p>Banking supervision has been increasingly concerned due to significant loan losses and bank failures from the 1980s till now. In the light of the banking crisis in recent years worldwide, CAMEL is a useful tool to examine the safety and soundness of banks, and help mitigate the potential risks which may lead to bank failures. The research has been conducted as a case study of American International Assurance Vietnam (AIA). It aims to determine whether the CAMEL framework plays a crucial role in banking supervision. Furthermore, the purpose is to identify the benefits as well as drawbacks which the CAMEL system brings to AIA. The research problem was explored by quantitatively analyzing a bank's overall performance. The paper firstly starts to collect theory relevant to the empirical research, and then draws conclusions from the findings by relating them back to the literature stated in the early stage. Although this study is based on collected data and numerical figures, it is a qualitative study. The findings revealed that CAMEL rating system is a useful supervisory tool in the U.S. CAMEL analysis approach is beneficial as it is an internationally standardized rating and provides flexibility between on-site and off-site examination; hence, it is the main model in assessing banks' performance in AIA. On the other hand, it has disadvantages of not following the Vietnamese bank closely, ignoring the interaction with bank's top management and overlooking the provisions as well as allowance for loan loss ratios. The paper further discusses the current financial crisis and the banking supervisory tool in Europe by an in-depth interview with a banker.</p> | |
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FOREWORD

First and foremost, I am most grateful to my thesis supervisor, Mr. Andreas Stenius. The guidance and support that he gave really help me for the progression and fluency of the thesis.

I wish to express my sincere gratitude to Mr. Nigel Kimberley who gave time and patience to comment on the text of this paper. My particular thanks also go to the colleagues at AIA Vietnam for providing me with necessary material. Great appreciation goes to my friends: Bishal Sharma helped me proofread the thesis; Michelle Ngan Lam gave me a great deal of ideas on how the study usually works.

Last but not least I thank my beloved parents for their support, strength, encouragement while I worked on this research.

1 INTRODUCTION

This chapter opens the research with a brief of the motivation for the choice of the research topic. The author then discusses the research's objectives and research questions, and concludes this beginning chapter with the explanation of research methodology

1.1 Motivation for the choice of research topic

Banks serve as backbone to the financial sector, which facilitate the proper utilization of financial resources of a country. The banking sector is increasingly growing and it has witnessed a huge flow of investment. In addition to simply being involved in the financial intermediation activities, banks are operating in a rapidly innovating industry that urges them to create more specialized financial services to better satisfy the changing needs of their customers. Sundararajan et al. (2002) argues that the financial system, the bank in particular, is exposed to a variety of risks that are growing more complex nowadays. Furthermore, the economic downturn of 2008 which resulted in bank failures, are triggered in the U.S. and then wildly spread worldwide. It therefore increasingly urges the need of more frequent banking examination.

In order to cope with the complexity and a mix of risk exposure to banking system properly, responsibly, beneficially and sustainably, it is of great importance to evaluate the overall performance of banks by implementing a regulatory banking supervision framework. One of such measures of supervisory information is the CAMEL rating system which was put into effect firstly in the U.S. in 1979, and now is in use by three U.S. supervisory agencies-the Federal Reserve System, Office of the Comptroller of the Currency (OCC), and Federal Deposit Insurance Corporation (FDIC). It has been proved to be a useful and efficient tool in response to the financial crisis in 2008 by U.S. government.

The author had the opportunity to work in American International Assurance Vietnam (AIA) as an intern in the investment division for five months. Because of the fact that the writer is completely passionate about the finance world, in particular the banking sector, this internship perfectly inspired the researcher with the choice of research topic. Thanks to the real working environment, the feasibility of the theoretical framework mentioned in this paper is successfully tested by the company. In the context of AIA, the CAMEL rating is used as a private rating framework in bank analysis for its own investment purposes rather than that used by regulatory bodies in supervising the banks. It may be similar in the way that applying CAMEL rating in AIA aims at protecting itself as a depository from losses. A real case done by AIA has been included in the empirical section in order to clarify the objectives of the paper.

1.2 Aim of research and research questions

The research aims to familiarize the reader with basic knowledge about banking supervision, of which the CAMEL framework is the main measure to evaluate the overall safety and soundness of a bank. It also provides the significance of the CAMEL rating system in banking examination. The first objective helps frame the research questions as follows:

Research question 1: Why does the CAMEL rating system play a crucial role in banking supervision?

This paper further reflects on how AIA uses its own CAMEL framework. By using AIA's method to analyze a real bank, the researcher is able to identify the benefits as well as drawbacks of the method. The following question is asked to fulfill the purpose of this research:

Research question 2: What are the benefits as well as drawbacks of AIA applying the CAMEL framework in evaluating the banks' performance?

1.3 Research methodology

1.3.1 Research approach and strategy

The study intends to investigate the use of the CAMEL rating system in AIA in evaluating the banks' performance so that based upon the evaluation results; the company is able to finalize the investment decision-making. To begin with, the paper follows the approach of deductive theory which represents "the commonest view of the nature of the relationship between theory and research; or in other words, theory guides the research" (Allan and Emma, 2003). The paper firstly starts to collect theory relevant to the empirical research, and then draws conclusions from the findings by relating them back to the literature presented earlier.

The research design is selected in order to investigate the research questions and answer the research objectives in a relevant way. The work of Saunders, Lewis, and Thornhill (2009, p. 146) highlight the importance and capability of the case study in responding to the research questions like "why", "how", and "what". Bell (2005) adds "a case study approach is particularly appropriate for individual researchers because it gives an opportunity for one aspect of a problem to be studied in some depth within a limited time scale". Alan and Emma (2003) define that the case study entails the detailed and intensive analysis of a single case which can be a single organization, a single location, a person, and a single event. The case study here is AIA as a single organization since the author is a participant, an intern, of AIA.

In short, the research strategy as deductive case study has been chosen to meet the objective of this paper since it follows the hypothetic-deductive logic by first identifying the hypotheses and then attempting to test those (Lee 1989.)

1.3.2 Research method

1.3.2.1 Research method and data collection

Alan and Emma (2003) stress that “research method is simply a technique for collecting data, which can be associated with different kinds of research design”. In the context of this research, the case study employs the qualitative data collection techniques and data analysis procedures to deal with different aspects of research problems. Although this study is based on collected data as numerical figures, it is a qualitative study.

The qualitative method aims for exploratory purposes (hypotheses-generating), dealing with the non-numeric data. It is commonly undertaken manually helping researcher develop the theory from his data, rather than organized and analyzed in computer software (Saunders, Lewis, and Thornhill, 2009, p. 414 and 480). The current banking crisis and its effects on Finnish financial market, as well as the ideas of how CAMEL rating model relates to other similar model like the stress test are discussed in the practical research of this paper. The discussion is supported by the in-depth interview with a financial negotiator (rahoitusneuvottelija in Finnish), who now works at Corporate Finance department in OP-Pohjola Bank, in Helsinki.

Primary data gathered by the researcher serves mainly in the empirical research. The primary data is superior to secondary data because it is collected by the writer to suit the research’s objectives the best. The primary data refers to the intensive numeric data collected from banks ‘annual reports, funding sources, budget and cash flow, which contain bank-specific variables in the latest four-year period (2007-2010). Moreover, these data are supported with the in-depth interviews (face-to-face interview) to generate the results which help answering research questions.

Contrary to the primary data, the secondary data, including facts and figures, is chiefly presented in the literature review of the study. The collection of these data derives from numerous sources of books, journals, working papers, market research, and other internet sources. This type of data acts the same way as the primary data as to aid responding to research questions.

1.3.2.2 Validity and reliability

Easterby-Smith et al. (2008, p. 109) discuss that if other research methods generate the results to which is similar to what has been done before, it is called reliability. It is

possible to stem a quantitative reliability in this case from the transparency and credibility of the financial ratios as they are possibly manipulated to yield the results subject to the objectiveness of the researcher. The final reports of the bank analysis had to be submitted and approved by the portfolio manager before heading to the top management. Being employed by AIA, the author was engaged in its operation and any document fallacies will subject to the serious punishment.

Face validity is to determine the valid research methods which do make sense to the purposes of a research (Greener, 2008). Since the author wanted to ascertain the effects of the current financial crisis as well as the current risk management tool in Europe, she contacted Mr. Jussi Brantberg-the financial negotiator (i.e. rahoitusneuvottelija in Finnish) at OP- Pohjola Bank in Helsinki. A banker is the proper one to get to know impacts of the financial crisis. Moreover, OP-Pohjola is the only Finnish bank was selected to undergo the stress test over the last two years. Hence, interviewing a banker from OP bank strengthens the understanding of how to implement the stress test in European banks.

1.4 Limitation

Due to the confidentiality of AIA, the author found it fairly tough to access certain types of materials, which would limit the perfection of this study. The author is not allowed to reveal the name of the investigated bank, which she took as an example to depict the applying of CAMEL framework in AIA. Instead, it has been recommended to call the bank as 'Bank X'.

1.5 Thesis method and structure

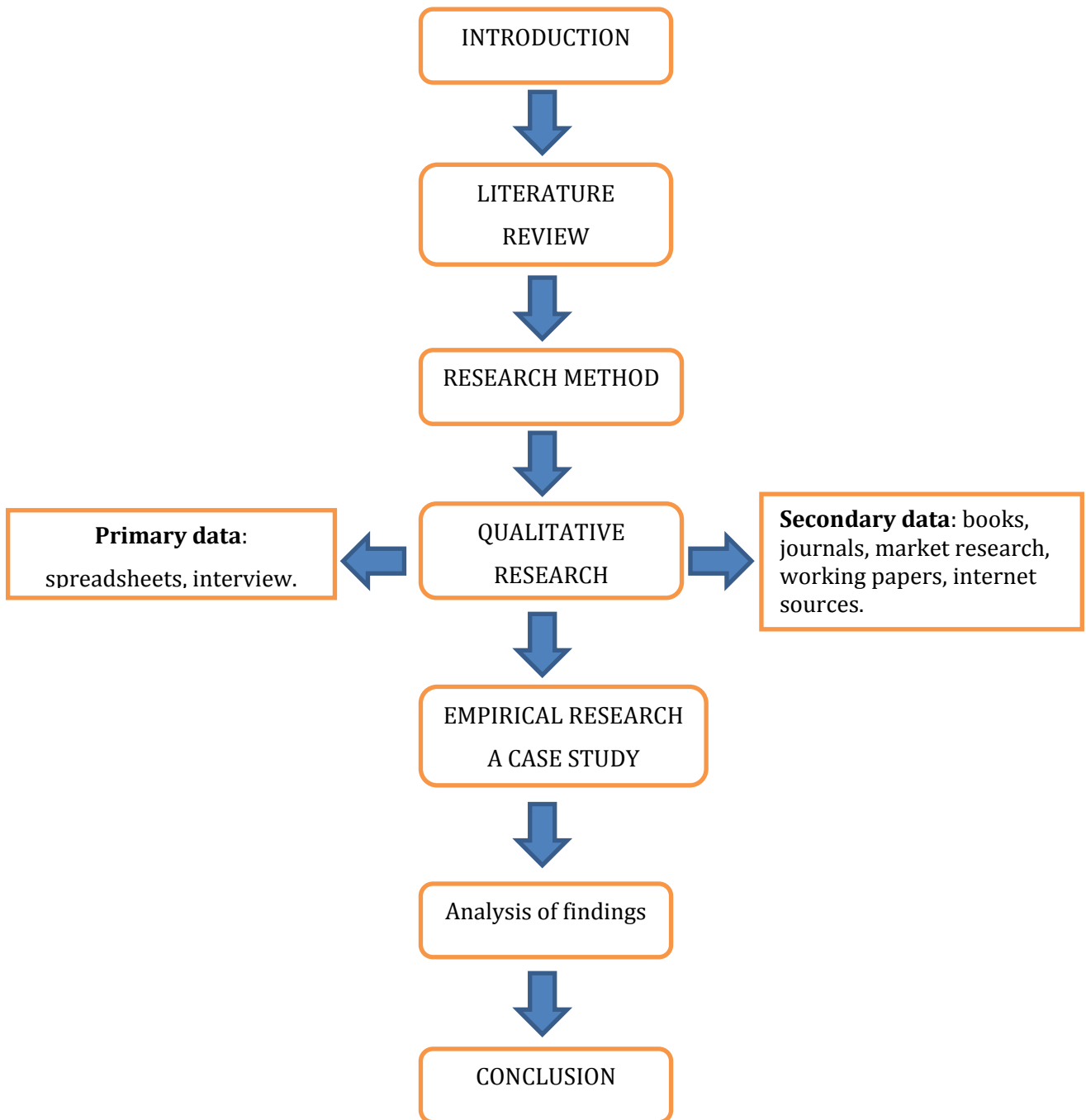


Figure 1. Thesis method and structure

2 LITERATURE REVIEW

This section reviews the on-site examination and off-site surveillance which significantly contribute to U.S. banking supervisory tool. Of these monitoring, the CAMEL is an important measure. The definitions and measurements of each factor in this framework are subsequently explained.

2.1 On-site bank examination

Pettway and Sinkey (1980) have generally discussed that on-site bank examination has been the backbone of the supervisory process conducted by both U.S. Federal and state banking agency. It includes the regular visit on banks followed by the interviews with management, evaluating the accuracy of the financial statements, accounting records, internal controls and the compliance with law and regulations. At the end of the exam, the bank supervisors assign the composite rating for those supervised banks based on the summary of findings collected through the on-site inspection. Such composite rating is basically determined in line with the CAMEL rating system.

Banking supervision in U.S. is primarily conducted by the Federal Reserve in addition to its role as of monitoring the monetary policy. On the contrary, such role is assigned to a single financial supervisory agency rather than to the central bank, in United Kingdom and Japan. The banking supervision mainly ensures that the commercial banks operate in a safe and sound manner, and do not take the excessive risks. It also makes sure that those banks operate in accordance with federal banking regulations. The Fed examines the safe and sound of financial stability in banks through the on-site bank examination with the support of the CAMEL rating, and in complement with the off-site monitoring (Bernanke, 2007).

The annual on-site bank inspection was officially mandated for most commercial banks under the adoption of the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). Nevertheless, it is not necessary to conduct the bank examination every twelve months because it is performed every twelve to twenty-four months according to

their inspection priority. Such priorities are given to financially problematic banks and thereby lower priority given to banks which are well-capitalized and have acceptable earnings.

However, the work of Gilbert et al. (2002) argued that despite the fact that on-site examination is an effective tool; it is costly and burdensome since the supervisors have to be involved in daily operations and it may take a long of time. Thus, it is supported with the off-site surveillance. Moreover, Cole and Gunther (1998) found that the CAMEL rating improved forecast accuracy, but only of the examination which had occurred during the previous six months.

2.2 Off-site banking surveillance

The financial market, admittedly, changes rapidly over years so bank examination is required to be conducted more frequently. It results in the bank supervisor relying more often on the off-site surveillance to complement the on-site inspection. However, it provides up-to-date and reliable financial information, and offers the basis for financial evaluation of the bank between examinations. Off-site surveillance highlights the risk exposure based on the annual or quarterly financial data, and it helps the banks ‘supervisors schedule the exams on those suspected banks.

Gilbert et al. (2002) suggest that most of the off-site surveillance is based on the call reports (reports of condition and income filled by Banks) which is produced by the bank supervisory agencies, for the quarter prior to the examination. Off-site monitoring is conducted between on-site examinations in the supervisory cycle. The bank supervisors go through the results of on-site inspection and suggest the potential full-scope examinations, if necessary; and they also compares the bank’s performance to that of its peer in the industry. Two commonly used off-site tools are supervisory screens and econometric models:

- *Supervisory screens* include financial ratios from periodic balance sheets and income statements, which play an important role in off-site surveillance.

- *Econometric models* gather information from financial ratios. These models rely on statistical tests rather than human judgment to summarize the bank condition.

Off-site surveillance is also helpful due to the fact that it is less costly than the on-site supervision program, and new information can be updated frequently through quarterly financial statements and the basis for financial assessment between examinations is given.

2.3 Fundamentals of the CAMEL rating system

This section outlines the definition as well as fundamentals of the CAMEL rating system and the five components. This framework follows both U.S. regulation and AIA' CAMEL Approach to Bank Analysis.

2.3.1 What is the CAMEL rating system?

The Uniform Financial Institution Rating system, commonly referred to the acronym CAMEL rating, was adopted by the Federal Financial Institution Examination Council on November 13 1979, and then adopted by the National Credit Union Administration in October 1987. It has proven to be an effective internal supervisory tool for evaluating the soundness of a financial firm, on the basis of identifying those institutions requiring special attention or concern. (The United States. Uniform Financial Institutions Rating System 1997, p.1).

Barr et al. (2002 p.19) states that "CAMEL rating has become a concise and indispensable tool for examiners and regulators". This rating ensures a bank's healthy conditions by reviewing different aspects of a bank based on variety of information sources such as financial statement, funding sources, macroeconomic data, budget and cash flow. Nevertheless, Hirtle and Lopez (1999, p. 4) stress that the bank's CAMEL rating is highly confidential, and only exposed to the bank's senior management for the purpose of projecting the business strategies, and to appropriate supervisory staff. Its

rating is never made publicly available, even on a lagged basis. CAMEL is an acronym for five components of bank safety and soundness:

- Capital adequacy
- Asset quality
- Management quality
- Earning ability
- Liquidity

2.3.2 Capital Adequacy

Fundamentals of Capital Adequacy

Capital adequacy is the capital expected to maintain balance with the risks exposure of the financial institution such as credit risk, market risk and operational risk, in order to absorb the potential losses and protect the financial institution's debt holder. "Meeting statutory minimum capital requirement is the key factor in deciding the capital adequacy, and maintaining an adequate level of capital is a critical element" (The United States. Uniform Financial Institutions Rating System 1997, p. 4).

Karlyn (1984) defines the capital adequacy in term of capital-deposit ratio because the primary risk is depository risk derived from the sudden and considerably large scale of deposit withdrawals. In 1930, FDIC created a new capital model as capital-asset ratios since the default on loans came to expose the greatest risk instead of deposit withdrawals. To gauge the capital adequacy, bank supervisors currently use the capital-risk asset ratio. The adequacy of capital is examined based upon the two most important measures such as Capital Adequacy Ratio (CAR) or Capital to Risk-weighted Assets ratio, and the ratio of capital to assets.

The capital requirements are taken into AIA's CAMEL approach to Bank Analysis (1996) as below:

- Interpret what are the capital requirements and which banks meet them; what banks are privatizing or merging; are requirements different for private and state banks?

- Actual capital adequacy ratio is above regulatory minimum
- Good ability to raise capital through government injection or private/public issues

Capital Adequacy Ratios

The capital adequacy is estimated based upon the following key financial ratios, and to be considered as good banks in U.S., they must meet certain criteria detailed below:

Table 1. Capital Ratios Analysis (AIA's CAMEL Approach for Bank Analysis, 1996)

| Ratios | Formula | Criteria |
|--------------------------------|---|-----------------|
| CAR ¹ | $\frac{(\text{Tier 1 capital} - \text{goodwill}) + \text{Tier 2 capital}}{\text{Risk - weighted assets}}$ | ≥8% |
| Equity capital to total assets | $\frac{\text{Total capital}}{\text{Total assets}}$ | ≥4-6% |

This capital ratio is required to meet a minimum of 8% set by the Bank for International Settlement (BIS). However, it is important to note that in some countries the required minimum capital may vary depending on the local regulators; and the bank might like to have as high a capital ratio as possible.

Rating of Capital Adequacy

Each of components in the CAMEL model is scored from 1 to 5. In the context of capital adequacy, a rating of 1 indicates a strong capital level relative to the financial institution's risk. Meanwhile, the rating of 5 indicates a critical deficient level of capital, in which immediate assistance from shareholders or external resources is required. (Uniform Financial Institutions Rating System, 1997, p. 4).

¹ Tier 1 capital (core capital) is shareholder equity capital. Tier 2 capitals (supplementary capital) are the bank's loan loss reserves plus subordinated debt which consists of bonds sold to raise funds. Risk-weighted assets are the weighted total of each class of assets and off-balance sheet asset exposures, with weights related to the risk associated with each type of assets. (See *Croushore, Dean 2006*)

2.3.3 Asset quality

Fundamentals of asset quality

According to Grier (2007), “poor asset quality is the major cause of most bank failures”. A most important asset category is the loan portfolio; the greatest risk facing the bank is the risk of loan losses derived from the delinquent loans. The credit analyst should carry out the asset quality assessment by performing the credit risk management and evaluating the quality of loan portfolio using trend analysis and peer comparison. Measuring the asset quality is difficult because it is mostly derived from the analyst’s subjectivity.

Frost (2004) stresses that the asset quality indicators highlight the use of non-performing loans ratios (NPLs) which are the proxy of asset quality, and the allowance or provision to loan losses reserve. As defined in usual classification system, loans include five categories: standard, special mention, substandard, doubtful and loss. NPLs are regarded as the three lowest categories which are past due or for which interest has not been paid for international norm of 90 days. In some countries regulators allow a longer period, typically 180 days. The bank is regulated to back up the bad debts by providing adequate provisions to the loan loss reserve² account. The allowance for loan loss to total loans and the provision for loan loss to total loans should also be taken into account to estimate thoroughly the quality of loan portfolio.

The asset quality requirements are taken into AIA’s CAMEL approach to Bank Analysis (1996) as below:

- Trends should be noted such as loan concentrations, intra-group lending, and real-estate exposure. For a bank which heavily exposes to lend some specific business sectors and/or business entities, lack of diversification will make its loan portfolio vulnerable. Therefore, AIA designs the portfolio mix shared equally by a third of each of consumer, commercial and industrial loans.

² Loan loss reserve is the money put aside to pay off loan defaults and serve as an insurance to absorb potential losses caused by risky assets. (See *Croushore, Dean* 2006)

- Loan growth: has there been a large increase in loan growth and in what type of lending; are prudent standards being followed or are they becoming lax due to competition.
- Non-performing loans: amount, composition, causes for large increase or decreases, how NPLs are defined.
- Reserves: what levels of reserves in relation to total loans and non-performing loans?
- Real-estate exposure: what percentage of loans are real estate based and what type of real estate lending-commercial or residential.
- Intra-group exposure: what level of lending is to affiliated companies; what is the group's primary businesses; what is the level of ownership.

The asset quality is estimated based upon the following key financial ratios, and to be considered as good banks in U.S., they must meet certain criteria detailed below:

Table 2. Asset Quality Ratios Analysis (AIA's CAMEL Approach for Bank Analysis 1996)

| Ratios | Formula | Criteria |
|--|---|-----------------|
| NPLs to total loans ³ | $\frac{NPLs}{Total\ loans}$ | ≤ 1% |
| NPLs to total equity | $\frac{NPLs}{Total\ equity}$ | ≤ 1% |
| Allowance for loan loss ratio ⁴ | $\frac{Allowance\ for\ loan\ loss}{Total\ loans}$ | ≥ 1.5% |
| Provision for loan loss ratio ⁵ | $\frac{Provision\ for\ loan\ loss}{Total\ loans}$ | ≥ 100% |

³ The target is to reach the minimum of 1%; however, the higher of such ratio, the more capital a bank commonly requires supporting the loan portfolio. (See CAMEL approach to Bank Analysis by AIA, 1996).

⁴ Allowance for loan loss shows in the balance sheet as a credit. (See CAMEL approach to Bank Analysis by AIA, 1996).

⁵ Provision for loan loss shows in the income statement as an expense. (See CAMEL approach to Bank Analysis by AIA, 1996).

Rating of Asset Quality

Each of the components in the CAMEL rating system is scored from 1 to 5. In the context of asset quality, a rating of 1 indicates a strong asset quality and minimal portfolio risks. On the other hand, a rating of 5 reflects a critically deficient asset quality that presents an imminent threat to the institution's viability. (Uniform Financial Institutions Rating System 1997, p. 5).

2.3.4 Management quality

Fundamentals of management quality

Management quality is basically the capability of the board of directors and management, to identify, measure, and control the risks of an institution's activities and to ensure the safe, sound, and efficient operation in compliance with applicable laws and regulations (Uniform Financial Institutions Rating System 1997, p. 6).

Grier (2007) suggests that management is considered to be the single most important element in the CAMEL rating system because it plays a substantial role in a bank's success; however, it is subject to measure as the asset quality examination.

AIA approach to bank analysis states that the management has clear strategies and goals in directing the bank's domestic and international business, and monitors the collection of financial ratios consistent with management strategies. The top management with good quality and experience has preferably excellent reputation in the local communication. The management requirements are taken into AIA's CAMEL approach to Bank Analysis (1996) as below:

- Ownership: the bank is majority-owned by the government because government support is the most important mitigating factor to potential financial problems, or by large Private Corporation that have economic significance.
- Size: top local ranking in term of assets.
- Year of operations: long operation history since establishment.

The Management is estimated based upon the following key financial ratios, and to be considered as good banks in U.S., they must meet certain criteria detailed below:

Table 3. Management Quality Ratios Analysis (AIA's CAMEL Approach for Bank Analysis 1996)

| Ratios | Formula | Criteria |
|-------------------------|---|--------------------|
| Total asset growth rate | Average of historical asset growth rate | Nominal GNP growth |
| Loan growth rate | Average of historical loan growth rate | Nominal GNP growth |
| Earning growth rate | Average of historical earning growth rate | ≥ 10-15% |

Rating of Management

Each of components in the CAMEL rating system is scored from 1 to 5. In the context of management, a rating of 1 is assigned to note the management and board of directors are fully effective. On the other hand, the rating of 5 is applicable to critically deficient management. Replacing or strengthening may be needed to achieve sound and safe operations. (Uniform Financial Institutions Rating System 1997, p.7).

2.3.5 Earning ability

Fundamentals of earning ability

This rating reflects not only the quantity and trend in earning, but also the factors that may affect the sustainability of earnings. Inadequate management may result in loan losses and in return require higher loan allowance or pose high level of market risks. The future performance in earning should be given equal or greater value than past and present performance. (Uniform Financial Institutions Rating System 1997, p.7).

In accordance with Grier (2007)'s opinion, a consistent profit not only builds the public confidence in the bank but absorbs loan losses and provides sufficient provisions. It is also necessary for a balanced financial structure and helps provide shareholder reward. Thus consistently healthy earnings are essential to the sustainability of banking institutions. Profitability ratios measure the ability of a company to generate profits from revenue and assets.

The earning requirements are taken into AIA's CAMEL approach to Bank Analysis (1996) as mentioned below:

- Majority of earnings is annuity in nature (low volatility).
- The growth trend of the past three years is consistent with or better than industry norm and there are multiple sources of income (both interest and non-interest income).

The profitability is estimated based upon the following key financial ratios, and to be considered as good banks in U.S., they must meet certain criteria detailed below:

Table 4. Earning Ability Ratios Analysis (AIA's CAMEL Approach for Bank Analysis 1996)

| Ratios | Formula | Criteria |
|----------------------------------|---|-----------------|
| Net interest income Margin (NIM) | $\frac{\text{Net interest income}}{\text{Average earning assets}}$ | > 4.5% |
| Cost to income ratio | $\frac{\text{Operating expenses (excludes provision loss)}}{\text{Net interest income} + \text{non - interest income}}$ | ≤ 70% |
| Return on asset (ROA) | $\frac{\text{Net interest income}}{\text{Asset growth rate}}$ | ≥ 1% |
| Return on equity (ROE) | $\frac{\text{Net interest income}}{\text{Shareholder's equity growth rate}}$ | ≥ 15% |

Rating of Earning Ability

Each of the components in the CAMEL rating system is scored from 1 to 5. In the context of earning, a rating of 1 reflects strong earnings that are sufficient to maintain adequate capital and loan allowance, and support operations. On the other hand, a rating of 5 experiences consistent losses and represents a distinct threat to the institution's solvency through the erosion of capital. (Uniform Financial Institutions Rating System 1997, p.8).

2.3.6 Liquidity

Fundamentals of liquidity

There should be adequacy of liquidity sources compared to present and future needs, and availability of assets readily convertible to cash without undue loss. The fund management practices should ensure an institution is able to maintain a level of liquidity sufficient to meet its financial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss. (Uniform Financial Institutions Rating System 1997, p. 8).

Rudolf (2009) emphasizes that “the liquidity expresses the degree to which a bank is capable of fulfilling its respective obligations”. Banks makes money by mobilizing short-term deposits at lower interest rate, and lending or investing these funds in long-term at higher rates, so it is hazardous for banks mismatching their lending interest rate.

The liquidity requirements are taken into AIA’s CAMEL approach to Bank Analysis (1996) as below:

- Majority of the funding is coming from customer’s deposits, and no concentration of funding sources.
- Is there a maturity or interest rate mismatch?
- Does the central bank impose reserve requirements?

The profitability is estimated based upon the following key financial ratios, and to be considered as good banks in U.S., they must meet certain criteria detailed below:

Table 5. Liquidity Ratios Analysis (AIA’s CAMEL Approach for Bank Analysis 1996)

| Ratios | Formula | Criteria |
|---------------------------------------|--|-----------------|
| Customer deposits to total assets | $\frac{\text{Total customer deposits}}{\text{Total assets}}$ | $\geq 75\%$ |
| Total loan to customer deposits (LTD) | $\frac{\text{Total loans}}{\text{total customer deposits}}$ | $\leq 80\%$ |

Rating of Liquidity

Each of the components in the CAMEL rating system is scored from 1 to 5. In the context of liquidity, a rating of 1 represents strong liquidity levels and well-developed

funds as the institution has access to sufficient sources of funds to meet present and anticipated liquidity needs. On the other hand, the rating of 5 signifies critical liquidity-deficiency, and the institution demands immediate external assistance to meet liquidity needs. (Uniform Financial Institutions Rating System 1997, p.9).

2.4 Composite rating and exposure limit

After computing the rating for each of elements, the composite rating is the average of the sum of five elements. The composite rating is defined in AIA's CAMEL approach to Bank Analysis, 1996 as a tool to select the better banks among potential banks. Depending upon the composite rating of an individual bank, the financial analyst proposes an exposure limit comparable to the level of the bank.

The general guidelines for setting the maximum limits for each bank are presented in the proposed limits (AIA's CAMEL approach to bank analysis) as follows:

Maximum and 2nd limit -for banks rated 1-2 (the CAMEL rating):

- Maximum 20% of banks' shareholders' equity or 3% of total liabilities whichever is lower; may be subject to a maximum amount imposed in some countries.

3rd limit-for banks rated 3 (the CAMEL rating):

- Maximum 15% of banks' shareholders equity or 3% of total liabilities whichever is lower; may be subject to a maximum amount imposed in some countries.

Not recommended limit- for banks rated 4and 5

- No investment considered.

It is to note that the ratings are not comparable across countries, as below:

Table 6. The CAMEL's Composite rating (AIA's CAMEL Approach for Bank Analysis 1996)

| Rating Scale | Rating Range | Rating Analysis | Exposure limits | Rating interpretation |
|--------------|--------------|-----------------|---------------------|---|
| 1 | 1.0-1.4 | Outstanding | 1st limit (maximum) | The bank outperforms the average bank in all respects and by easily measurable differences |
| 2 | 1.6-2.4 | Superior | 2nd limit | Measurably better than the average bank, but not quite outstanding in all respects |
| 3 | 2.6-3.4 | Average | 3rd limit | a well-run, good bank that just meets all of the major standards |
| 4 | 3.6-4.4 | Under-perform | Not recommended | The bank demonstrates a major weakness that if not corrected, could lead to a very severe or unsatisfactory condition that will threaten its existence. This would also include major financial and/or managerial surprises |
| 5 | 4.6-5 | Doubtful | Not recommended | The bank's financial health is substandard, with asset quality impairing over half of the bank's primary capital. If not corrected further deterioration will lead to regulatory control and a high probability of failure |

2.5 The significance of CAMEL rating framework in banking supervision

Providing a general framework in evaluating overall performance of banks is of great importance due to the increasing integration of global financial markets. CAMEL model reflects excellently the conditions and performances of banks over years as well as enriches the on-site and off-site examination to bring better assessments towards banks' conditions. Its purpose is to provide an accurate and consistent evaluation of a bank's

financial condition and operations in the areas such as capital, asset quality, management, earning ability and liquidity. Muhammad (2009) claims that the strength of these factors would determine the overall strength of the bank. The quality of each component further underlines the inner strength and how far it can take care of itself against the market risks.

Furthermore, it serves the purpose of summarizing the significant compliance information needed for the regulators. It also assists them to ensure the degree of supervisory concern and type of supervisory response to generate timely warnings to minimize the adverse effects on banks. In the financial crisis of 2008, this rating was being used by American government respond to the crisis to help decide which banks needed the special help and which not as part of its capitalization program authorized by the Emergency Economic Stabilization Act of 2008.

Barker and Holdsworth (1993) find that the CAMEL system is useful, even after controlling for a wide range of publicly available information about the condition and performance of banks. This composite index further acts as a bank's failure predicting model. The rating is assigned based on both quantitative and qualitative information of the bank. If a bank's index is less than two, it is regarded as a high-quality bank, whereas institutions with grade four or five are rated to be insolvent (Curry, Elmer and Fissel, 2009.) The up-to-date examination ratings help identify if the banks require increased supervisory attention well before they actually fail. Although Gaytán and Johnson (2002) argue that the model is only parallel with the performance of the bank at the time of the examination, while variables in banks are highly volatile to market forces; the CAMEL model is still very much popular among regulators due to its effectiveness.

3 CASE STUDY- APPLYING THE CAMEL FRAMEWORK IN ANALYZING BANK X AT AMERICAN INTERNATIONAL ASSURANCE (AIA) VIETNAM

3.1 AIA Vietnam profile

AIA Group used to be a part of American International Group (AIG), but separated from AIG in 2009. AIG finalized the AIA's transaction with Federal Reserve Bank of New York in order to reduce the debt it suffered during the financial crisis in 2008.

The successful completion of its Hong Kong initial public offering (IPO) on 29 October 2010, it resulted in the Group becoming an independent listed company. At US\$20.5 billion it was the largest ever IPO on Hong Kong Stock Exchange, and the third largest IPO ever globally at that time. AIA now is a leading life insurance organization in Asia Pacific region. It provides individuals and businesses with products and services for life insurance, retirement planning, accident and health insurance as well as wealth management solutions. Through an extensive network of more than 320,000 agents and approximately 23,500 employees across 15 geographical markets, the AIA Group serves over 23 million customers in the region. The AIA group has branch offices, subsidiaries and affiliates located in jurisdictions including Australia, Brunei, China, Hong Kong, India, Indonesia, Macau, Malaysia, New Zealand, Philippines, Singapore, South Korea, Taiwan, Thailand and Vietnam. (AIA Annual Report, 2010).

After officially separating from AIG just a year ago, AIA Group Limited as well as AIA Vietnam currently uses the CAMEL Approach to Bank Analysis in the context of U.S. regulations, as a main framework for banks' evaluation. AIA applies the CAMEL system not due to the banking supervision but for investment purpose.

3.2 The CAMEL approach to bank analysis on Bank X

This section intends to apply the AIA's CAMEL framework to analyze a real bank which helps identify the strengths and weaknesses of the method. The author

implements the CAMEL model in analyzing the investigated bank's overall performance from 2007 to 2010 on capital, asset, management, earning and liquidity. However, the company aims to quantitatively analyze the financial year 2010 to point out the latest information. After assigning the composite rating, an investment-decision is made. However, AIA mostly invests in the top banks; of which government ownership contribute to at least 80% of total ownership structure, to mitigate the risks. So the point here is not to determine the Go/ No Go decision-making but to find out how much exposure is acceptable instead.

Bank X was founded in March 1988, upon the separation of the State Bank of Vietnam. Although the bank saw a 121.2 million shares listed on Ho Chi Minh Stock Exchange on July 16, 2009, the government however still remains the largest shareholder, owning 89% stake in the bank as of December 2010.

3.2.1 Bank X's Capital Adequacy

Bank X's capital adequacy analysis

As of December 31, 2010, the chartered capital of the bank reached VND15.2 trillion, an increase of 34.8% against the previous year. Its chartered capital ranked the 2nd largest in the sector. The bank shareholders' equity also increased at a record pace of 44.5% to VND18.2 trillion. With rapid asset growth, shareholders' equity to total assets ratio remained stable at around 5% for the past 4 years.

The C13 Decree sets out CAR must be at least 9% as of October 1st FY2010. The bank, in response, reported a CAR ratio of 8.02% at the year-end 2010, lower than planned as well as lower than that of its peers because the share sale to International Finance Corporation did not meet up its expected time schedule in 4Q2010. However, on March 10, 2011, upon IFC investment, the CAR ratio will be more than 9%.

Table 7. Bank X's capital adequacy

| Capital Adequacy | 2010 | 2009 | 2006 | 2007 |
|------------------------|-------|-------|-------|-------|
| CAR | 8% | N/A | N/A | N/A |
| Equity to total assets | 4.90% | 5.20% | 6.40% | 6.40% |

Bank X's capital adequacy rating

Even though the bank's CAR did not meet the required minimum of the State Bank of Vietnam and was slightly lower than that of its peers, it is reinforcing its capital sources by cooperating with foreign investors this year. However, the bank was not endangered by the seriously insufficient capital, and the other capital ratios performed generally well. **Thus, the rating of 3 is granted.**

3.2.2 Bank X's Asset Quality

Bank X's asset quality analysis

By December, 2010, the total assets reached VND 367.7 trillion and ranked second biggest in term of assets, increased by 51% y/y, of which 63% were loans to customers; 17% were investment securities, and 16% in cash and deposits at central bank and other financial institutions. The bank's investment portfolio invested 54% in government bonds, 35% in debt issued by local business entities, 11% in debt issued by local credit institutions and a small fraction of 0.05% in equities.

Total loans to customers as of yearend 2010 were VND 231 trillion, up 42% y/y. The loan breakdown by maturity was: short-term (61%), medium-term (12%) and long-term (28%). Lending to state-owned companies accounted for 39% of total loans, loans to individuals accounted for 19%; the proportion did not change much from last year. NPLs ratio was 0.66% as of end 2010 which appeared satisfactory. In terms of borrower's sector, the bank lent most to processing and manufacturing firms (28%),

followed by households (19%), trading and service (12%), construction (11%) and agriculture and forestry (2%).

Customer deposits as of 31 December 2010 climbed to VND205.9 trillion, up 39% from last year's VND 148.5 trillion and funded 56% of total assets. Other funding sources were borrowings from the central bank and credit institution (21%), trusted funds (12%), CD and valuable papers (3%).

Table 8. Bank X's asset quality ratios

| Asset Quality | 2010 | 2009 | 2006 | 2007 |
|----------------------|-------------|-------------|-------------|-------------|
| NPLs to total loans | 0.70% | 0.60% | 1.80% | N/A |
| Asset growth rate | 50.80% | 25.90% | 16.50% | 22.60% |
| Deposit growth rate | 38.60% | 22.10% | 8.20% | 22.90% |

Bank X's asset quality rating

The bank continues to expand and create a strong funding base in 2010 with the lowest NPLs ratio compared to its peers which is considered as an outstanding achievement. Furthermore, it is the second largest commercial bank in term of asset in 2010. **It is, therefore, worthy of the best rating, 1.**

3.2.3 Bank X's Management

Bank X's management analysis

Amid the tough economic conditions in 2010, the bank saw impressive growth. The total assets increased by 51% to VND367.7 trillion, shareholders' equity increased by 46% to VND18.4 trillion, total mobilized funds and total loans increased by 54% and 44% respectively and profit before tax increased by 36% to reach VND 4,598 billion. Additionally, profit after tax growth was 31% as posted at VND 3,405 billion.

The bank credit has experienced a very strong growth over years which are almost double the rate of nominal GDP growth. Consequently, bank credit as a percentage of GDP is estimated to hit roughly 118% in FY2010, which is a very high number for a developing economy; while the starting point a decade ago was just 35% of GDP.

Table 9. Bank X's management quality ratios

| Management | 2010 | 2009 | 2006 | 2007 |
|-------------------|--------|--------|--------|--------|
| Asset growth rate | 50.80% | 25.90% | 16.50% | 22.60% |
| Loan growth rate | 41.80% | 35.10% | 15.20% | 27.50% |
| Income after tax | 31.30% | 43.70% | 57% | 90.70% |

The local institutions and individuals own 98.61% of total shares, while the remaining 1.39% is owned by foreign investors. The table below displays the ownership structure of the bank:

Table 10. Bank X's ownership structure

| Shareholders | Number of shares | Percentage of ownership |
|-----------------------|------------------|-------------------------|
| State Bank of Vietnam | 1,353,808,479 | 89.23% |
| Bank X Trade Union | 36,491,652 | 2.41% |
| Others | 126,928,990 | 8.36% |

Bank X's management rating

The bank is majority-owned by the government with 89% ownership, which is regarded as the best mitigating factor to financial problems. Also, the board of directors has performed fairly effectively. Meanwhile, the bank's net income after taxes ranked only 4th in 2010. **It can therefore be given a rating of 2.**

3.2.4 Bank X's Earning

Bank X's earning analysis

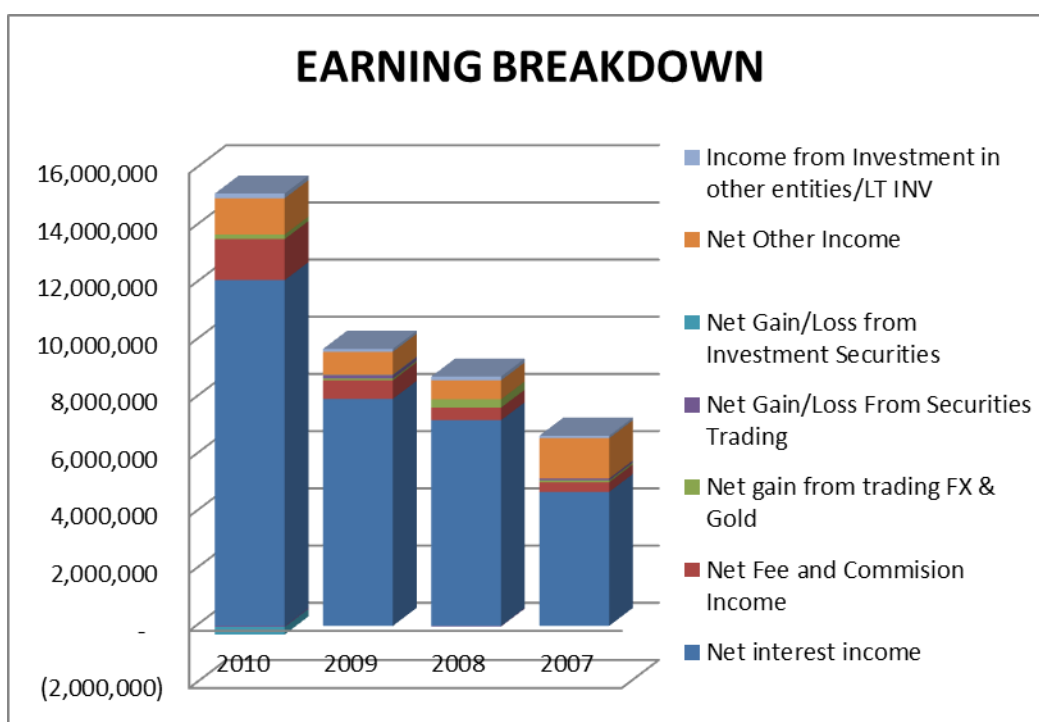


Figure 2. Bank X's earning breakdown

Profit before tax well exceeded the target and reached VND 4,598 billion and increased remarkably by 36.3% y/y. Profit after tax growth was 31% as posted at VND 3,405 billion. ROA and ROE were 1.11% and 22.2% respectively. The good performance was due to the increase of 51% in total assets and low bad debt ratio of 0.66%.

Net interest income accelerated by 52.3% y/y to VND12, 089 billion and contributed to 81.6% of operating income. NIM increased to 4.2% by year-end 2010 from 3.8% of last year. The non-interest income increases by 56.2% y/y to VND 2,370 billion. The bank posted VND 1,436 billion (up 121% y/y) in net income from fees and commissions and VND 158 billion (up 167% y/y) of gain from FX trading. However, in 2010, it incurred a net loss (VND 300 billion) from securities trading and investment securities due to the sharp decline of stock market.

The cost-to-income ratio in 2010 was 49%, lower than 60% previous year because the operating expenses in 2009 surged to spend on pre-listing procedures. ROA of 1.1% failed to meet the target of 1.53% even though total assets increase. The key reason is that the local monetary market faced pressures from policies and inflation leading to

turbulent competition in capital. On the contrary, ROE went up to 22.2% in 2010 while it was 20.8% a year earlier.

Table 11. Bank X's earnings ratios

| Earning | 2010 | 2009 | 2006 | 2007 |
|----------------------|-------------|-------------|-------------|-------------|
| NIM | 4.20% | 3.80% | 4.10% | 3.20% |
| Cost-to-income ratio | 48.90% | 60% | N/A | N/A |
| ROE | 22.20% | 20.80% | 15.70% | 14.10% |
| ROA | 1.10% | 1.20% | 1% | 0.80% |

Bank X's earning rating

The bank reflects moderately strong earnings of which the profit before taxes is well-exceeded the target, the cost-to-income ratio performs well, and the net interest income has been increasing. The bank's net income after taxes is not the biggest and its ROA fails to meet the target. **It has thus been assigned a rating of 2.**

3.2.5 Bank X's Liquidity

Bank X's liquidity analysis

As of December 31, 2010, customer loans to customer deposits ratio increased to 112%. The robust lending growth during an inflationary environment raised Fitch's concern on the bank's liquidity. However, a large deposits base (VND 206 billion, 56% of total assets) would help. In addition, its large government bond portfolio (VND 33 trillion) will add more liquidity to the bank via its uses in the open market operations and interbank market in order to meet its funding needs if raised.

Table 12. Bank X's liquidity ratios

| Liquidity | 2010 | 2009 | 2006 | 2007 |
|-----------------------------------|---------|---------|--------|--------|
| LTD | 112.40% | 109.90% | 99.30% | 90.90% |
| Customer deposits to total assets | 56% | 60.90% | 62.80% | 67.70% |

Bank X's liquidity rating

The overall liquidity situation of the bank is well-managed, but the robust lending growth is a matter of great concern. **The rating of 2 has been given** due to strong access to various types of funding sources and vigilantly-watched robust lending growth.

3.2.6 Bank X's Composite Rating and Comparable Exposure Limit

In fact, the bank's performance last year was fairly good compared to both the overall sector and closely comparable peer domestic banks. The composite rating, computed an average of the five elements of the CAMEL rating, was 2. This means the bank has superior rating which is better than the average bank, but not quite outstanding in all respects.

The rating of 2 indicates a must-invested with the second largest exposure limits for the coming financial year. The second limit indicates the total amount of investment as of 3% of total liabilities.

Table 13. Bank's X composite rating and exposure limit

| | Rate | Exposure limit |
|-------------------------|----------|--------------------------------|
| Capital Adequacy | 3 | |
| Asset Quality | 1 | |
| Management | 2 | |
| Earning | 2 | |
| Liquidity | 2 | |
| Composite rating | 2 | 3% of total liabilities |

As illustrated above, the numerical data extracted from the banks' annual reports which are used to determine the required financial ratios by Excel such as capital ratios, asset ratios, earning ratios and liquidity ratios. Thereby determining relevant exposure limit for a single bank based on the weighted composite score. Thus, the bank analysis is an excellent example to show how well AIA method is used to evaluate the bank's overall performance.

3.3 Benefits and drawbacks in implementing the CAMEL model at AIA Vietnam

The analysis of bank X as above is an outstanding example to discover how well CAMEL rating system works in a real bank. It results in supporting the researcher to figure out both benefits and drawbacks in implementing the CAMEL framework at AIA as follow:

Advantages

- The CAMEL rating index is getting internationally standardized; it allows the AIA's subsidiaries all over Asia not to get out of track. AIA is a multinational corporation, thereby resulting in the single use of analyzing bank's performance model among countries. Consequently, it is a perfect choice to follow and supervise between countries and the Group.
- In regard to the flexible use of the CAMEL, this model can be applied as an off-site examination which makes it possible to use historical financial and accounting data to achieve a good assessment. Instead of on-site examination, this, to some extent enables AIA to save the expenses in visiting the target bank back and forth.
- It is the main framework to evaluate a bank's overall performance that assists excellently the decision of investment in AIA.

Disadvantages

- The current CAMEL approach to bank analysis utilized by AIA is designed to follow strictly the U.S. banking law and regulations. This is to some degree not completely relevant to the nature of Vietnamese banking system. Thus, it requires the flexibility to adapt to the Vietnamese market.
- The AIA's CAMEL framework overlooks or ignores the interaction with top management of investigated banks due to the cost-efficient policies. The comprehensive analysis on management may reveal the effectiveness of board of directors and management which is significant factor in identifying the soundness of the bank.
- Due to the nature of the Vietnamese banking system, which has limited allowances and provision for loan loss to cushion banks against potential risks, the role of allowances and provision for loan loss ratio in the CAMEL have been overlooked.

3.4 The current banking crisis and the stress test

The interview aims to discuss also the current financial crisis in Finland. The stress test as the supervisory tool to evaluate the banks has been used in most of the European countries including Finland. The in-depth interview was carried out with Mr. Jussi Brantberg, the financial negotiator (i.e. rahoitusneuvottelija in Finnish) at OP- Pohjola Bank; and the interview details are attached in the Appendix. The researcher conducted the interview face to face, which allowed both the interviewer and the interviewee to discuss the issue freely.

Mr. Jussi claimed that banking is the sector which gets affected first from the current financial crisis. In fact, this crisis is getting worse. A sovereign debt crisis has been spreading over European countries such as Greece, Ireland, Italy, Spain and Portugal, and the debt crisis and banking crisis now roll into one. As Jussi's main task is to finance the corporate loan, he admits that it is more expensive for companies to get a bank loan recently. Because the credit risk is higher, it results in the bank raising the

lending margin. This contributes to the clarity of the fact that the higher the credit risk is, the more collateral is required to get a bank loan.

EU banks just started the new stress test regulated by the European Banking Authority. The authority designed to operate the exercise over the three-year horizon between 2010 and 2012. The stress test evaluates the resilience of the sample of 90 banks in European Union, of which OP-Pohjola Group is the only Finnish bank to be selected to experience the test. It focuses on the banks' transparency on and capital position to assess their resilience for investors, analysts and other market participants. The bank may perform a variety of scenarios in line with the economic growth, unemployment rates, housing prices and equity prices. Nevertheless, the current stress test does not represent all possible outcomes of the current sovereign crisis, but mostly concentrates on some certain types of financial risks such as market and credit risk. Consequently, the resilience is assessed against the capital threshold of Core Tier 1 by the benchmark of 5%. The banks, which fail the stress test, have to reinforce the capital requirements. During the last two years, OP- Pohjola Group has maintained a strong capital position as of over 12%.

EU banks have followed the Basel Accords standard, which typically confronts with the credit risk, market risk and operational risk. It is issued by the Basel Committee on Banking Supervision. According to Jussi, although he has not heard the term before, the CAMEL system works in the similar way to Basel Accords. They both generate the measures which bank supervisor can use to evaluate the overall bank's performance in line with the capital requirements, liquidity, solvency, and profitability. It is tough to say which tool is better, but Basel is more European approach. Moreover, EU banks would step up demand for a proper risk management tool at the right time.

4 CONCLUSION

Bank supervision has been increasingly concerned due to significant loan losses and bank failures from the 1980s till now. Added to the fact that the financial market has changed dramatically over years, it is in need of the thorough bank examination

including on-site and off-site examination, of which the CAMEL rating model plays a crucial role in the supervisory process.

The researcher focused on two main themes to approach this topic. She firstly aimed to find out whether the CAMEL assessment framework is a useful tool in banking supervision. Then, she continued to explore the benefits as well as drawbacks which the CAMEL system brings to AIA. The practical part was explored by quantitatively analyzing bank X's overall performance. In order to ascertain the current financial crisis and the banking supervision method in Europe, the author conducted an in-depth interview with the financial negotiator, Mr. Jussi Brantberg at OP Bank.

The findings revealed that the CAMEL rating is significant to banking supervision and is currently popular among regulators worldwide. Its approach is beneficial as it is an internationally standardized rating, and provides flexibility between on-site and off-site examination; hence, it is the dominant model in assessing banks' performance in AIA. Meanwhile, it has disadvantages of not following the Vietnamese banks closely, ignoring the interaction with bank's top management and overlooking the provisions as well as allowance for loan loss ratios. The interview with an expert helped the writer further discuss the current sovereign debt crisis and banking crisis in Europe which tend to rise sharply. The stress test is introduced to be a practical risk management tool to identify the failed banks with inadequate capital position. The discussion continued to explore how CAMEL model is similar to Basel Accords. The results showed that they are remarkably similar, but the difference is that Basel is more popular in Europe than in U.S. In regard to the situation of Europe, it is in need of a proper tool to deal with financial risks in the market.

4.1 Relevance of the thesis to individual investors

Banking investments among individual investors are increasing and a basic CAMEL rating knowledge can help them gain better understanding about their investment on their own rather than seeking the investment agencies. It will assist the investors in understanding the current situation of the banks and their strengths and weaknesses. This helps them make precise and timely decisions towards their investment.

4.2 Relevance of the thesis to the bank

As Vietnamese banks are increasingly seeking for the co-operation of international investors, following the CAMEL rating system as an international standard would add a great support to ease such co-operation. The banks are advised to equip their staffs with comprehensive knowledge about CAMEL rating to guide the bank growth rate in a positive direction such as enhancing the capital adequacy, improving asset quality and management, gaining earnings and strengthening liquidity. Equally important, banks always play the most important role in protecting themselves from unfavorable incidents but bank regulators still have their vital responsibilities. Therefore, maintaining the strong bond between banks and bank supervisors is necessary.

4.3 Recommendations for further research

The scope of this paper was to discuss and provide the CAMEL rating system in evaluating the bank's performance in AIA Vietnam. However, this framework's process and objectives may vary among countries, among companies, and among banks. A single bank was selected to describe how the CAMEL rating works though it works equally well with other type of financial institutions. Additionally, the other researchers may want to go further on whether the CAMEL model is capable to be used as a banking supervisory tool in Europe or not. Therefore, in the further research one might want to consider this paper as a reference to expand the scope and improve results of the research.

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APPENDIX

Appendix 1: Expert Interview

The interview was carried out with Mr. Jussi Brantberg, who is the financial negotiator at OP Bank Helsinki. The interview questions and results are presented as follow:

1. What are your currently task in OP Bank?

I am currently working as a financial negotiator (rahoitusneuvottelija in Finnish). My tasks focus on financing the corporate loan. It means to facilitate which deposit will be matching with which funding needs, in particular the corporate funding's.

2. What do you think about the current financial crisis?

Banking is the sector which gets affected first from the current financial crisis. In fact, this crisis is getting worse. You might have heard or read the news that the sovereign debt crisis firstly boomed in Egypt and gradually spread to other European countries. This turmoil seems not to finish at the moment.

3. How does this crisis hit the banking sector in Finland?

I will take OP Bank as an example to better explain the crisis's influences on Finnish banks. In fact, the crisis results in the financial risks increasing in the global market. As a bank, we cannot take that many risks. We therefore have to lift the risk margin higher. Consequently, the lending rate is higher. In financing the corporate loan, we ask for more collateral due to the higher credit risks. Generally speaking, it is more expensive for companies to get the loan from banks.

4. Have you ever heard the term "CAMEL rating system"?

No, I have not heard this term before.

Because Mr. Jussi had no ideas of what is the CAMEL rating, the interviewer started to explain what CAMEL is. After he had got to know the definition of the CAMEL model and how it works, the interviewer continued asking questions.

5. Do you know whether the CAMEL rating framework has been used in Europe including Finland?

Well, I am afraid that Europe does not apply such a framework in evaluating the banks' performance. However, as far as I know, another tool has been used. It is called the stress test.

6. Can you tell me more about the stress test in Europe?

The European Central Bank regulates and monitors all the banks in Europe. The European Banking Authority began the stress test in European banks in 2010, and it planned to run from 2010 to 2012. The stress test assesses the resilience of the sample of 90 banks in European Union. It focuses on the banks' transparency and capital position to evaluate their resilience for investors, analysts and other market participants. OP-Pohjola Group is the only one representative from Finland. The stress test requires banks to perform the number of scenarios in regard to the national economic growth, unemployment rates, housing prices and equity prices. However, their resilience is assessed against the capital threshold currently. The banks, which fail the stress test, have to reinforce the capital requirements. OP-Group has maintained a strong capital position as of over 12% during the last two years.

7. Although the CAMEL framework has not been used in Europe ever, does it remind you of other similar model?

Actually it reminds me of the Basel Accords standard issued by the Basel Committee on Banking Supervision. Both the CAMEL and Basel form some of the similar financial measures such as capital, earning, and solvency and liquidity ratios. To some degree, they both indicate the similar standard in evaluating the overall bank's performance.

8. Would you think CAMEL can help manage the credit risk in Europe?

It is extremely tough for me to say that whether this model can work in Europe or not. In order to determine the feasibility of the CAMEL rating, it needs to be assessed and tested over and over by the professional banking supervisor committee. However, I

would say the Basel is more European style. Moreover, EU banks would step up demand for a proper risk management tool at the right time. It would be interesting to conduct the further research on the feasibility of the CAMEL framework in Europe.

Appendix 2: Summary of Bank X's financial data (2007-2010)

| Bank X | 2010 | 2009 | 2008 | 2007 |
|--|-------------------|------------------|------------------|------------------|
| Income Statement (VND million) | | | | |
| Interest Income | 31,919,188 | 18,912,533 | 21,062,887 | 12,769,280 |
| Interest Expense | (19,830,186) | 10,976,345 | 13,873,456 | 8,085,890 |
| Net interest income | 12,089,002 | 7,936,188 | 7,189,431 | 4,683,390 |
| Fees and Commissions Income | 1,769,499 | 847,864 | 588,190 | 437,656 |
| Fees and Commission Expense | (333,393) | (198,651) | (150,205) | (102,909) |
| Net Fee and Commission Income | 1,436,106 | 649,213 | 437,985 | 334,747 |
| Net gain from trading FX & Gold | 158,444 | 59,278 | 290,046 | 64,087 |
| Net Gain/Loss From Securities Trading | (38,591) | 119,764 | (22,787) | 71,374 |
| Net Gain/Loss from Investment Securities | (260,177) | 14,246 | - | - |
| Net Other Income | 1,270,398 | 804,164 | 664,479 | 1,406,835 |
| Income from Investment in other entities | 164,220 | 101,421 | 135,099 | 88,247 |
| Operating Expenses | (7,197,137) | (5,803,230) | (4,957,685) | (2,766,027) |
| Operating profit before credit losses | 7,622,265 | 3,881,044 | 3,736,568 | 3,882,653 |
| Credit Provision Loss | 3,024,227 | (507,900) | (1,300,180) | (2,353,568) |
| Net Income Before Taxes | 4,598,038 | 3,373,144 | 2,436,388 | 1,529,085 |
| Income Taxes | (1,183,691) | (790,013) | (631,924) | (379,643) |
| Net Income After Taxes | 3,414,347 | 2,583,131 | 1,804,464 | 1,149,442 |
| Minority Interest | 8,869 | 10,613 | - | - |
| Net Income for the year | 3,405,478 | 2,593,744 | 1,804,464 | 1,149,442 |
| Balance Sheet (VND million) | | | | |
| Cash and cash equivalents | 2,813,948 | 2,204,060 | 1,980,016 | 1,743,604 |
| Deposits in Central Bank | 5,036,794 | 5,368,942 | 6,010,724 | 8,496,135 |
| Deposits in Credit Institutions | 50,960,782 | 24,045,152 | 18,273,849 | 12,841,040 |
| Trading Securities | 224,203 | 299,033 | 755,256 | 739,381 |
| Derivatives & Other Financial Assets | 19,242 | 75,228 | 86,810 | 258 |
| Total Loans to Customers | 231,434,907 | 163,170,485 | 120,752,073 | 102,190,640 |
| Loans Loss Provisions | (2,769,902) | (1,551,109) | (2,150,396) | (1,708,407) |
| Investment Securities | 61,585,378 | 38,977,048 | 40,959,079 | 37,404,891 |
| Securities Available for Sale | 55,645,824 | 33,864,198 | 37,039,093 | 32,352,839 |
| Securities Held to Maturity | 6,208,700 | 5,112,850 | 3,919,986 | 5,052,052 |
| Provision for Investment | (269,146) | - | - | - |
| Long-term investment | 2,092,756 | | | |
| Investment in Joint Venture Companies | 1,782,208 | 1,297,310 | 761,330 | 579,531 |
| Other Long Term Investment | 310,548 | 166,446 | 146,394 | 104,607 |
| Fixed Assets | 3,297,645 | 3,297,530 | 1,995,515 | 1,214,196 |
| Tangible Assets | 2,206,346 | 1,775,244 | 1,279,280 | 996,671 |
| Intangible Assets | 1,091,299 | 1,522,286 | 716,235 | 217,525 |
| Other Assets | 10,246,536 | 6,435,083 | 4,019,707 | 2,507,095 |

| | | | | |
|---|--------------------|--------------------|--------------------|--------------------|
| TOTAL ASSETS | 367,712,191 | 243,785,208 | 193,590,357 | 166,112,971 |
| Borrowings from Central Bank | 43,220,678 | 13,718,689 | 769,677 | 712,745 |
| Borrowings from Credit Institutions | 35,096,726 | 15,012,157 | 8,824,710 | 5,259,911 |
| Customer Deposits | 205,918,705 | 148,530,242 | 121,634,466 | 112,425,814 |
| CD & Valuable Papers | 10,728,283 | 8,585,257 | 3,459,121 | 3,672,024 |
| Trusted Funds | 44,734,885 | 34,525,002 | 40,217,706 | 29,296,023 |
| Other Liabilities | 9,640,638 | 10,636,548 | 6,348,518 | 4,099,925 |
| Total Liabilities | 350,269,510 | 231,007,895 | 181,254,198 | 155,466,442 |
| Owner's equity | 18,170,363 | 12,572,078 | 12,336,159 | 10,646,529 |
| Chartered capital | 15,172,291 | 11,341,317 | 8,003,587 | 7,905,708 |
| Other equities | 89,778 | 88,344 | 106,061 | 66,472 |
| Funds Held in Reserve | 571,897 | 335,750 | 3,947,333 | 2,420,702 |
| FX Revaluation | 118,766 | 58,735 | 94,880 | 61,585 |
| Retained Earnings | 2,217,631 | 836,276 | 184,298 | 192,062 |
| Minority Interest | 201,913 | 205,235 | - | - |
| Total Liabilities & Shareholders' Equity | 367,712,191 | 243,785,208 | 193,590,357 | 166,112,971 |