

FINANCIAL AND EFFICIENCY ANALYSIS OF THE ISLAMIC BANK OF THAILAND

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การวิเคราะห์ทางการเงินและประสิทธิภาพของธนาคารอิสลามแห่งประเทศไทย

นายคุณเรล ทามาต มาราชโค

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต

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อุเรล ทามาส มาราชโค: การวิเคราะห์ทางการเงินและประสิทธิภาพของธนาคารอิสลามแห่งประเทศไทย (FINANCIAL AND EFFICIENCY ANALYSIS OF THE ISLAMIC BANK OF THAILAND) อ. ที่ปริกษาวิทยานิพนธ์หลัก: รศ.ดร.อิสรา ศานติศาสตร์ 146 หน้า

จุดประสงค์ในการวิจัยนี้เพื่อต้องการวิเคราะห์เชิงลึกเกี่ยวกับผลประกอบการของธนาคารอิสลามแห่งประเทศไทยที่ถูกจัดตั้งขึ้นตามพระราชบัญญัติธนาคารอิสลามแห่งประเทศไทย พ.ศ. 2545 การศึกษาใช้อัตราส่วนทางการเงิน (financial ratio) และการวิเคราะห์หุ้มห่อข้อมูล (Data Envelopment Analysis) เป็นตัวศึกษา งานวิจัยนี้ได้ประเมินผลประกอบการของธนาคารอิสลามแห่งประเทศไทย ในทางผลกำไร (profitability) ทางสภาพคล่อง (liquidity) ทางความเสี่ยง (risk) ทางประสิทธิภาพ (efficiency) และทางแผนการกำกับดูแล (corporate governance) ตั้งแต่เริ่มก่อตั้งจนถึงปี พ.ศ. 2552 ธนาคารเริ่มมีผลกำไรเป็นบวกหลังจากดำเนินกิจการไปแล้ว 5 ปี จึงเกิดคำถามสำคัญว่าต้องใช้เวลารเริ่มต้นพอสมควรก่อนเกิดกำไรหรือไม่ หรือกำไรแท้จริงนั้นเกิดเพราะการเปลี่ยนแปลงในการตัดสินใจของฝ่ายบริหาร ถ้าใช่ จะเป็นการดีต่อธนาคารหรือไม่ถ้าให้เดินหน้าไปตามแนวทางการบริหารเดิม หรือมีแนวทางบริหารใดที่มีประโยชน์มากกว่าในอนาคต และเนื่องจากประเทศไทยมีประชากรมุสลิมมากประมาณ 6-8 ล้านคน จึงเกิดคำถามว่าจะทำอะไรเพื่อเพิ่มส่วนแบ่งการตลาด งานวิจัยนี้ใช้อัตราส่วนทางการเงิน 18 ตัวด้วยกัน เพื่อวัดและเปรียบเทียบผลการประกอบการของธนาคารอิสลามและของธนาคารรูปแบบเก่า เช่น อัตราผลตอบแทนจากสินทรัพย์ทั้งหมด (Return on Assets: ROA) อัตราผลตอบแทนจากส่วนของผู้ถือหุ้น (Return On Equity: ROE) อัตราส่วนสินเชื่อต่อเงินฝาก (Loan to Deposit ratio: LDR) อัตราส่วนหนี้สินต่อส่วนของผู้ถือหุ้น (Debt to Equity ratio: DER) การใช้ประโยชน์ของสินทรัพย์ (Asset Utilization: AU) และ อัตราส่วนรายรับต่อรายจ่าย (Income to Expense ratio: IER) การวิเคราะห์ Data Envelopment สามารถวิเคราะห์เชิงประสิทธิภาพได้ทั้งในธนาคารรูปแบบทั่วไปและธนาคารอิสลาม การประเมินผลประกอบการเป็นแนวทางหนึ่งในการวัดความสำเร็จของบริษัทที่เกิดจากเป้าหมายที่วางไว้ในตอนแรก เป็นส่วนหนึ่งของการดำเนินงานแนวควบคุม ซึ่งทำให้บริษัทสามารถปรับปรุงผลประกอบการในอนาคตได้และยังชี้ถึงความบกพร่องของการปฏิบัติงานในปัจจุบันได้เป็นอย่างดี งานวิจัยนี้เปรียบเทียบอัตราส่วนทางการเงินแต่ละตัวและผลลัพธ์แบบปีต่อปีตั้งแต่เริ่มก่อตั้งธนาคาร เพื่อศึกษาและอธิบายถึงเหตุผลในการเปลี่ยนแปลงค่าของตัวชี้วัดแบบปีต่อปี จากหลักฐานพบว่าช่วงที่ไม่เกิดกำไรมาจากการที่ธนาคารยังใหม่อยู่ไม่ได้เกิดจากการบริหารงานที่ผิดพลาดยิ่งไปกว่านี้ งานวิจัยนี้ให้ข้อมูลและหลักฐานเกี่ยวกับประสิทธิภาพเชิงสัมพัทธ์ของธนาคารอิสลามแห่งประเทศไทยในช่วงวิกฤติทางการเงิน โลกปี ค.ศ. 2008

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ลายมือชื่อ อ.ที่ปริกษาวิทยานิพนธ์หลัก.....

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KEYWORDS : ISLAMIC BANK OF THAILAND / ISLAMIC FINANCE / EFFICIENCY ANALYSIS/
DATA ENVELOPMENT ANALYSIS

AUREL TAMAS MARACSKO: FINANCIAL AND EFFICIENCY ANALYSIS OF THE
ISLAMIC BANK OF THAILAND. ADVISOR: ASSOC. PROF. ISRA SARNTISART, Ph.D.,
146 pp.

The aim of this study is to give an in-depth analysis, using both financial ratios and Data Envelopment Analysis (DEA) of the first Islamic bank in Thailand, i.e. Islamic Bank of Thailand (Act, B.E.2545). The study evaluates performance of the Islamic bank in profitability, liquidity, risk and efficiency, corporate governance effects from the opening of the bank until 2009. The first question is arising from the fact that the bank started to earn positive profit after 5 years of existence. Was it because the time needed from the beginning or it has something to do with the changes in the management decision making? If yes, would it be beneficial for the bank to move in the same direction or there is any other more efficient way to move forward in the future. Also a question arise from the fact, Thailand has a Muslim population around 6-8 millions, which is a relatively big number. How the Islamic Bank of Thailand could possible increase her market share? The study include eighteen financial ratios such as Return on Asset (ROA), Return on Equity (ROE), Loan to Deposit ratio (LAR), Debt to Equity ratio (DER), Asset Utilization (AU), and Income Expense ratio (IER) are used to measure banking performances, both in Islamic and conventional banking sectors. Moreover, the use of the Data Envelopment Analysis is the frontier technique of efficiency analysis either in conventional or Islamic banks. Performance evaluation is a method of measuring a company's achievement based on the targets set earlier. It is a part of control measures that can help a company to improve its future performance while identifying the deficiencies of its operation through the financial year. This study compares each ratio from the beginning of the existence of the bank on a yearly basis, compare the results, attempt to find the reasons if there is a change from year to year, and explain those reasons. Moreover, evidences found and presented that the early years of unprofitability was a result of the early development of the bank and not because of a bad management. Hence, the research provides further information and evidences about the relative effectiveness of the Islamic Bank of Thailand during the 2008 global financial crisis.

Field of Study : International Economics and Finance

Student's Signature.....

Academic Year : 2010.....

Advisor's Signature

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CHAPTER I

INTRODUCTION

1.1 Rationale

The financial and efficiency analysis of the Islamic Bank of Thailand is a necessary and missing research from the field of business and economics. Since the Islamic Bank of Thailand does not focus only on the Islamic market when launch new financial products but for everybody in Thailand who wish to invest, deposit, save in a different financial environment than conventional banks. Globally Islamic financial institutions emerged into a fierce competition of banking industry with a core principle differ from other commercial banks. The unique type of services offered by Islamic banks opened up a huge financial market and demand for the Muslim population. However, the beneficiaries of this new type of banking are not just for the religious Muslim people but also for everybody who wishes to be involved in a new and arguably safer type of banking. Being a unique institution with fairly unknown business ethics and conduct, the Islamic Bank of Thailand faces a big challenge not just what fierce financial rivals opposing but the lack of knowledge of the public about the bank.

1.2 Objective

The main objective of this study is to find evidences that the Islamic Bank of Thailand is a safe and trustworthy financial institution for every member of the society whether Muslim or not. Concerns about the bank's inefficiency rose recently because of its five years unprofitability. For this reason, the other research question is to find whether the first five years of the bank's operation is a result of a bad management or the early development of the bank. Hopefully this research will contribute for both, business societies and public to understand the operation, the business conduct and the efficiency of the Islamic Bank of Thailand through academically accepted and widely used efficiency measurement methods.

1.3 Motivation

Evaluating the performance of an Islamic financial institution is as important as measuring the achievement of an individual. Obviously, roles and responsibilities of Islamic banks are not only confined to the financial needs of various stakeholders, but have as an imperative to obey in their business conduct to the divine principles derived from the *Holy Quran* and *Sunnah*. Therefore this work is concerned with the task of exposing (using comparison of other Islamic bank, with similar size from another country) the interior performance of this relatively new bank, the Islamic Bank of Thailand, to an in-depth analysis. Moreover the study includes an Introduction from Islamic finance and Islamic law, to give an overview about Islamic finance. Using as an international benchmark, the study include the Al-Amanah Islamic Investment Bank of the Philippines for performance comparison with the Islamic Bank of Thailand.

1.4 Benefits of the study

The benefits of this study can be identified in many different ways. The first benefit of this study is not a clearly academic, but more a social benefit. Identify the banks efficiency over time, and the explanation of the changes due to different policy implications or political-economic changes, could give an overall picture of the bank's potential of dealing with difficulties, or managing shareholders, depositor's money. The Islamic Bank of Thailand is a unique financial institution in the mean of its religious service, and focus on the Muslim minorities. Muslim and non-Muslim depositors and future depositors could benefit from this study by seeing whether the bank has a history of efficiency operation, or if the banks operation showing an increasing trend in efficiency or not. On the other hand, the Islamic Bank of Thailand receives an in-depth performance evaluation of its operation in the first seven years. This study also functions as a benchmark for future policy making and re-structuring. This study covers past re-structuring of the bank, with its consequences and effects on operation which can be a help for planning future re-structuring. Moreover, the academic benefits of the study are the uniqueness of the dual method efficiency analysis for an Islamic financial institution. Recently, only a few studies analyzed Islamic banks with Data Envelopment Analysis, even fewer with both techniques, and non in Thailand or subjecting a non-Muslim majority country.

1.5 Introduction to Islamic Banking and Finance

The aim of this part is to give an introduction about Islamic Banking and Finance. In order to understand the importance of this research, one might have to

understand the differences and the real aim of the Islamic Banking. There are three major differences between Islamic banking and conventional or traditional banking (hereafter conventional banking). First, and foremost, Islamic law prohibits usury, the collection and payment of interest (riba). There are debates whether usury and riba are the same; the literal translation of the Arabic word riba is increase, addition or growth, though it is usually translated as 'usury'. Usury is not to be regarded solely as the practice of taking interest on a loan. The concept of interest as a reward to the providers of money is replaced with a reward based on profit and loss sharing to the providers of capital (labor and money taken together are 'capital'). Second, Islamic law prohibits investing in businesses whose activities are considered inconsistent with Islamic teachings and principles and are therefore unlawful (haraam) or forbidden. Haraam is the antonym of the well known halal. For examples, business activities such as gambling, pornography industry or trading with drugs or alcohol is considered haraam. Also it is haraam to participate in any business knowing that it generates haraam income regardless of the business activities being primarily lawful. Also the gain acquired from investment in equities is riba and not lawful due to the unlawfulness of equities. Since dealing in shares in public companies is not valid, hence haraam, the yield is haraam riba. The gain of this type of investment will not be halaal simply because the trading activities or the products sold by the company happen to be halaal. Additionally, students who tend to cheat on his test also considered haraam. Finally, Islamic banks pay alms (zakat) which are required under Islamic law. Consequently, Islamic banking institutions are required to establish Shariah advisory committees to advise them and to ensure that the operation and activities of the bank comply with Sharia principles. The first modern experiment

with Islamic banking could be traced back to 1963, when an Egyptian bank (Mit Ghamr Savings Bank) started to offer Islamic services. However, Islamic Banking grown rapidly, and nowadays more than 50 countries have Islamic Financial institutions. Countries like Iran and Sudan only Islamic banking are allowed. In other countries, such as Bangladesh, Egypt, Indonesia, Jordan and Malaysia, Islamic banking co-exists with conventional banking. Islamic banking, moreover, is not limited to Islamic countries. In August 2004, the Islamic Bank of Britain became the first bank licensed by a non-Muslim country to engage in Islamic banking. The HSBC, University Bank in Ann Arbor and Devon Bank in Chicago offer Islamic banking products in the United States. Recent industry estimates show that Islamic banking, which managed around US\$250 billion worth of assets worldwide as of 2004, is expected to grow at the rate of 15% per annum. The rapid growth of Islamic Banking raises a few important questions. Was this growth originated from the comparative advantage of the Islamic banks paradigm? Or more because of the increasing amount of resources of Muslim countries since the late 1960's. Many researchers and policymakers also raised the question if Islamic banks should be regulated differently than its conventional counterparts. This thesis will focus less on these questions, since previously many researchers contributed on this issues, mainly in Malaysia, since Malaysia have both Islamic and conventional banking running simultaneously, and hence, by the World Bank 2006 data, Malaysia has the largest amount of Islamic capital, financial and insurance market. From a theoretical perspective, Islamic banking is different from conventional banking because interest (riba) is prohibited in Islam, i.e., banks are not allowed to offer a fixed rate of return on deposits and are not allowed to charge interest on loans. A unique feature of

Islamic banking is its profit-and-loss sharing (PLS) paradigm, which is predominantly based on the *mudarabah* (profit-sharing) and *musharakah* (joint venture) concepts of Islamic contracting.

Under the PLS paradigm, the assets and liabilities of Islamic banks are integrated in the sense that borrowers share profits and losses with the banks, which in turn share profits and losses with the depositors. Advocates of Islamic banking, thus, argue that Islamic banks are theoretically better poised than conventional banks to absorb external shocks because the banks' financing losses are partially absorbed by the depositors (Khan and Mirakhor, 1989) / (Iqbal, 1997). Similarly, the risk sharing feature of the PLS paradigm, in theory, allows Islamic banks to lend on a longer-term basis to projects with higher risk-return profiles and, thus, to promote economic growth (Chapra, 1992) / (Mills and Presley, 1999). The PLS paradigm, moreover, subjects Islamic banks to greater market discipline. Islamic banks, for example, are required to put in more effort to distinguish good customers from bad ones because an Islamic financial institution tends to be more vulnerable for adverse selection because of the closer relation and dependants on its customers. The banks also need to monitor their investments and borrowers more closely to ensure truthful reporting of profits and losses. Islamic bank depositors, furthermore, are required to choose their banks more carefully and to monitor the banks more actively to ensure that their funds are being invested prudently. Advocates of Islamic banking, therefore, argue that a primary advantage of PLS banking is that it leads to a more efficient allocation of capital because the return on capital and its allocation depend on the productivity and viability of the project (Khan, 1986).

First of all, as many referred to the money as a kingpin of a bank, examine the Islamic view on this issue should not be left out from this research. The Shariah has placed gold and silver in a prominent position in its monetary system. It considers that these two precious metals best function as a medium of exchange, measure of value and the store of wealth. Shariah also maintain that the legal currency should be from gold and silver in order to stabilize the monetary system. However, Shariah attached many legal injunctions (hukm), to these two precious metal, for example; minimum value of theft, payment of diyah, zakat and overall transactions. After the collapse of the gold standard, and the new coming paper money leads to an increasing turmoil and other ills in the economies. Currency values measured in gold and silver stabilized in the monetary systems in mankind's history until it was abandoned and superseded by paper money (Sanusi, 2001)

Functions of money as commonly known are the followings.

- As a medium of exchange (White, Nd: 237), permitting the separation of exchange into distinct acts of buying and selling.
- As a measure of value in serving as a unit, in terms of which the relative value of different commodities and services can be expressed.
- A standard for deferred payments, so permitting the calculation of payments due at some future date.
- As a store of value.

The Islamic Approach to the money is a slightly different. In order to continue discussion about the Islamic concept of money, we must acknowledge that Islamic

principles ought to govern our everyday money matters. These principles based on the guidance of the Qur'an and Hadith. Therefore we are under an obligation to abide by the rules of conduct of the Shari'ah which is based on belief, justice and equality. Human legalization is biased towards the self, people, race or country. The values of justice and equality enacted are relative, and justified according to particular interest, sometimes underlying injustice and persecution.

“And who is further astray than one who follows his vain desires without guidance from God”

[Al-Qasas:]

In the Islamic point of view, money is the means of fulfillment of human needs and desires. It is a need of every society as it is means of exchanging commodities.

Other concepts in Islamic banking are the prohibition of paying interest (riba), as previously mentioned. While interest as a reward to providers to money is not consistent with Islamic principles, profit sharing among the providers of both labor and money is acceptable because it involves sharing of both risks and rewards. However, the definition of what is, and what is not riba, differs among scholars and therefore among individual Islamic banking institutions.

In conventional banking, a bank customer, desiring to acquire specific goods, might borrow money from a bank and agree to make regular installment payments to the bank for an amount that includes both repayment of principle and payment of interest. That contract will generally include a provision for penalties for late payment and title to the property is generally in the name of the customer. In an Islamic bank,

that same bank customer might identify the asset he/she wishes to purchase and have the bank acquire the asset and then resell the asset to the bank customer at an amount greater than the bank's acquisition cost. The bank can then allow the customer to repay the 'marked-up' price in installments. However, since the transaction is not a financing transaction there can be no penalties for late payment. To protect itself from default, the bank will retain title to the property. This is a murabaha arrangement. In a murabaha transaction both parties must be aware of the cost incurred by the bank so the profit margin earned by the bank is also known by both parties. A variation of the murabaha arrangement is the deferred payment sale (bai' biathaman ajil) in which the bank sells the goods to the customer at a profit margin to which they have both "agreed". In addition, the bank determine the profit margin depending on the duration of the payment, the longer the period the higher the payment. The customer has no power to change the profit margin. Hence, this deferred payment is rose debate about the injustice of the agreement where the bank suspected to impose hidden interest rate. In case of default of the installments, the bank gets the property for auction, and recovers easily. However, if the default is in the early loan period, a blundering injustice occur, since the price was fixed according of long period, whereas the auction is done earlier. First, A Wahab bin Patil, a Judge of the High Court Malaya (Malaysia) noted this injustice. He held that the bank was allowed only for the principal sum. This note rose attention amongst Islamic banks and also appealed on the court which decided in favor of Islamic Banking Institutions, only in the case if the contract is a sale and not a loan agreement.

Another variation of murabaha is a credit sale (bai muajjal) in which the bank earns a profit margin on the purchase price and allows the buyer to pay the price in a

lump sum or in installments. The contract has to expressly mention cost of the commodity and the margin of profit to which the parties have mutually agreed. Yet another variation of the murabaha arrangement is an advance payment plan (bai salam) in which the bank collects in advance for goods to be delivered at some point in the future. The contract must specify clearly the quality of the goods to be delivered. Except for gold, silver or currencies, almost any product can be conveyed in this type of arrangement.

1.6 Introduction to the Islamic Bank of Thailand

Thailand as the second largest economy in the ASEAN countries, with a fairly high number of Muslims on its soil, the establishment of a financial institution, which operates according to the Islamic law, have been an issue recently in the country. Especially the need of such an institution rose in the southernmost provinces of Thailand, where the majority of the population is Muslim, and they live their life according to Islamic scholars. No surprising that the initiation of the Islamic bank is from those provinces. In 1998, the Thai government impelled the development of an Islamic financial institution for the minority. There are reasons to believe that the idea was to supply the southern Thai Muslims with financial products acceptable by their religious lifestyle and laws. However, the government wanted to keep this institution under its surveillance. To support this fact, the Government becomes the major shareholder and owner of the bank through the Ministry of Finance. In 2002, the Parliament approved the Government's act of the Islamic Bank of Thailand, Islamic Bank of Thailand (Act, B.E.2545).

The Bank started its operation in 2003 June with a paid up capital of 1 billion baht. The major shareholder of the Bank was the Government through the Ministry of Finance, the Thailand Prosperity Fund and the Government Savings Bank Company Limited. However, in the early years of the bank existence, there were foreign shareholders as well, namely the Islamic Bank of Brunei Berhad, the Perbadanan Tabung Amanah Islam Brunei, the Dhibbaya Insurance Public Limited Company. Some of the major shareholders were conventional banks like SCB and Krung Thai Bank. In later years, this shareholder structure changed as shown under the part of 1.6 Corporate Governance.

The Islamic Bank of Thailand started to operate with 9 branches and had 27 at the end of 2005. The bank continued its business expansion with the acquisition of the Krung Thai Bank's Shariah Banking Services. After the acquisition, the bank gained 18 branches from Krung Thai Bank. The Bank earned positive profit first time in 2008, after five years of operation. The headquarters of the bank is in Asoke, Bangkok, one of the most exclusive business locations in Thailand.

1.7 Corporate Governance

In an efficiency evaluation of a firm, one aspect that no researcher should avoid is the corporate governance. Measuring financial ratios or calculating relative efficiency without a broad picture of the company's corporate governance is like forecasting the weather without considering the dominating climate in an area. In the result of the improved technology in the Islamic Bank of Thailand, corporate

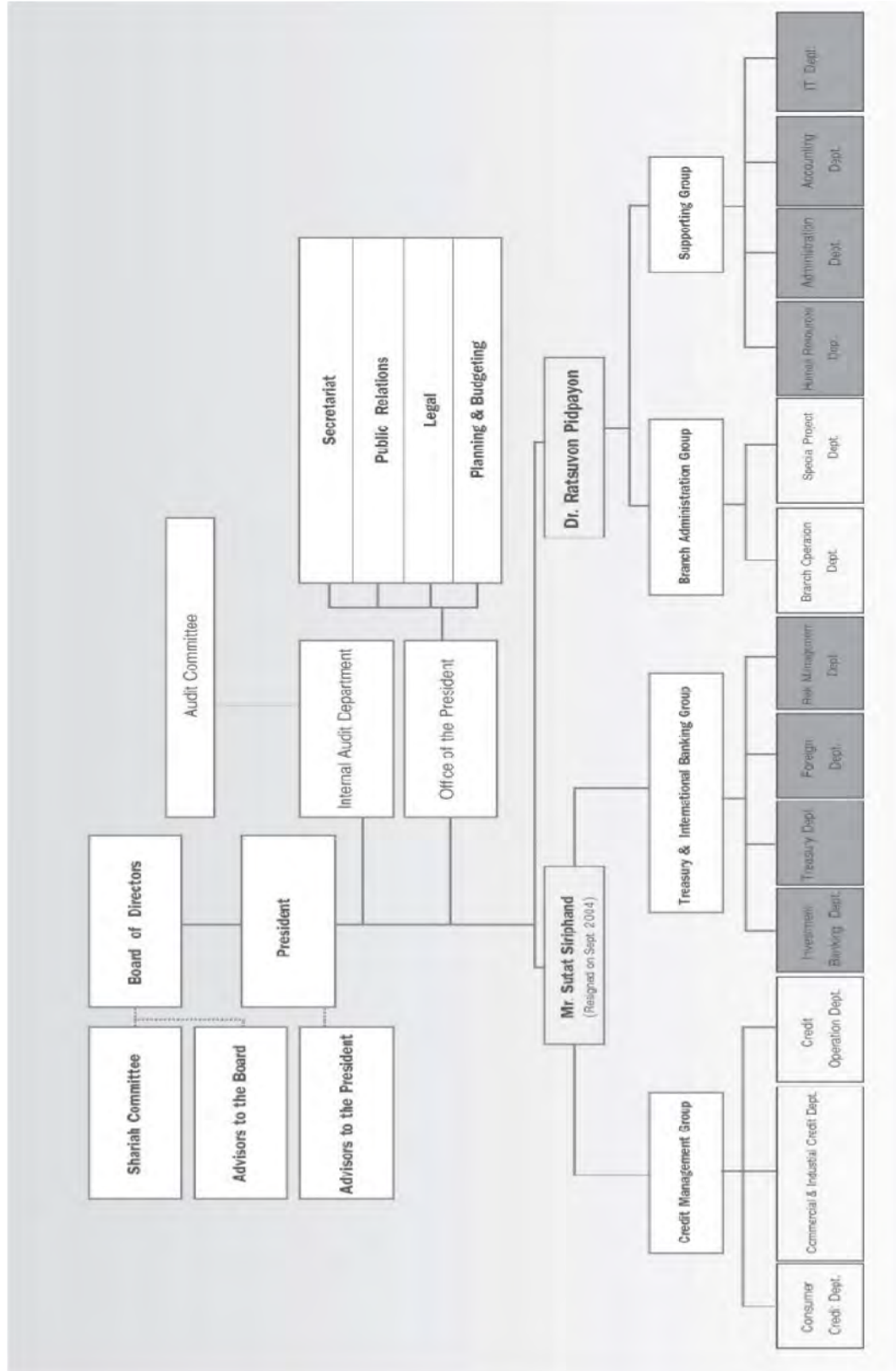
governance aspects now available over time for shareholders, researchers and anyone who have interest to the bank.

Corporate governance as phenomena is sometimes a misleading and misunderstood thing. Globally, and inter industry, there are many different explanation of corporate governance. Recently, (O'Donovan 2009) defined corporate governance as the follows. Corporate governance is an internal system encompassing policies, processes and people, which serve the needs of shareholders and other stakeholders, by directing and controlling management activities with good business savvy, objectivity, accountability and integrity. Consideration of good corporate governance in any industry is a crucial thing. There are many problems arises from a bad corporate governance, such as unprofitability, inefficiency, bad credibility of the firm. Bad corporate governance is mostly originated from the principal-agent problem. Principal agent problem is defined as treats and difficulties that arise under conditions of incomplete and asymmetric information when a principal hires an agent, such as the problem of potential moral hazard and conflict of interest. In many cases, the company tries to align the interests of the agent in solidarity with those of the principal, such as piece rates/commissions, profit sharing, efficiency wages. In the case of the Islamic Bank of Thailand, the different interest of the executives, shareholders and managers are less as a danger then in a western conventional bank, since the surveillance of the religious advisory board. The Islamic Bank of Thailand defined the good corporate governance in 2006 as the follows; "Good corporate governance is a system that leads to a structure and relationship between the Board of Directors, the Management and stakeholders that aims to nurture competitiveness,

which eventually should bolster ISBT's growth and add value to its shareholders in the long run."

The structure of the Islamic Bank of Thailand in 2004 was the follows. The Board of Directors with the Shariah Committee was the head of the bank. The President, Mr. Anant Tangtatswas is under the Board of Directors, with the advisors to the president. Under the President is the internal audit department, which belongs to the Audit committee. The Audit Committee is established in 2005 April. The bank has two Senior Executive Vice President, Dr. Ratsuvon Pidpayon and Mr. Sutat Siriphand, who resigned in 2004 September, after seven months of service. Under Dr. Ratsuvon there are two groups, the Branch Administration Group and the Supporting Group. group with six departments. The Branch Administration Group is contains the Branch Operation Department and the Special Project Department. Under the Supporting Group is the Human Recruitment Department the Administration Department the Accounting Department and the IT department. Mr. Sutat managed also two groups and seven departments. The two groups is the Credit Management Group, with the Consumer Credit Department, the Commercial and Industrial Credit Department and the Credit Operation Department. The Treasury and International Banking group has four departments under its management, the Investment Banking Department, the Treasury Department the Foreign Department and the Risk Management Department.

Figure 1.7.1 The Structure of the Islamic Bank of Thailand in 2004



The shareholders structure in 2004 was the follows;

Table 1.7.1 Shareholder and ownership structure of the Islamic Bank of Thailand in 2004

Shareholders	Ownership percentage
Thailand Prosperity Fund	15 %
Ministry of Finance	14.207%
SME Venture Capital Fund	10.763%
Government Savings Bank	10.045%
Bank Thai Public Limited	8.610%
The Islamic Bank of Brunei Berhad	7.5%
Perbadanan Tabung Amanah Islam Brunei	7.5%
Dhibbaya Insurance Public Comp. Limited PLC	7.175%
Krung Thai Public Limited Bank	5.74%
Siam City Public Limited Bank	5.74%
Others	7.72%
Total	100%

Source: Islamic Bank of Thailand Annual Report 2004

This table gives us a deeper look into the ownership of the bank, which can be a crucial question over time. The major shareholder of the bank is the Thailand Prosperity Fund. Thai Prosperity Advisory Company Limited (TPA) is an investment advisory firm that specializes in equity investments. The company was established in 2003, as a joint venture between the Government Pension Fund and the Brunei Investment Agency, in the same year as the Islamic Bank of Thailand. Interesting fact is that the Islamic Bank of Thailand ownership and the TPA's ownership is jointly a Government-Islamic venture. The Thai government has 24.252 percent clear

ownership in the bank through the Ministry of Finance and the Government Savings Bank, also 25.763 percent ownership through the SME venture capital fund and the TPA. 22.175 percent of the ownership is in foreign hands, mostly in Brunei, and 19.99 percent ownership for Thai conventional banks. The bank accounted 9 branches in 2004, with 4 deposit product launched, also offer foreign services, mainly financing facility for international trade. Hence, the IBT proposed to become a linkage in international trade for Muslim business to help their expansion, for example in HALAL food business. Other two main operation of the bank is the investment banking and credit-financing service, both for international and domestic costumers.

In the year 2005, one major operating event took place. The Islamic Bank of Thailand Extraordinary Shareholders Meeting No. 1/2005 dated 26 October 2005 resolved to acquire with the Krung Thai Bank Public Company Limited's Shariah Banking Services to strengthen the Islamic financial system, which was part of the government's policy to reinforce the country overall financial institutions. The government body which assisted in the merge was the Ministry of Finance, one of the major shareholders of the IBT. The Shariah Banking Service was a separate body of the Krung Thai bank, with its own headquarter and branches, but under the KTB's surveillance. With this merge, the IBT expanded its size by 18 branches, mostly in South Thailand, and with 223 staff. IBT also expanded its branches by itself, opening the Krabi branch, which was the ninth branch; all together with the KTB's merge the Islamic Bank of Thailand had 27 branches in 2005.

The Islamic Bank of Thailand's ownership structure is unchanged from the previous year. Significant corporate governance changes happened in the Board of

Directors Meeting No. 11/2005 dated June 8, 2005, resolved to appoint Mr. Dheerasak Suwannayos as the Chairman of the Executive Boards, replacing the Chairman (Mr. Sanit Rangnoi), and Dr. Ratsuvon Pidpayon, Senior Executive Vice President and Acting President as Secretary, from June 16, 2005 onwards. Mr. Suwannayos remained the acting president in recent days. Shareholder structure of the Islamic Bank of Thailand changed in respectively in the year 2007.

Table 1.7.2 Shareholder and ownership structure of the Islamic Bank of Thailand in 2007

Shareholders	Ownership percentage
Ministry of Finance	48.540%
Government Savings Bank	39.81%
Krung Thai Bank	9.83%
Others	1.86%
Total	100%

Source: Islamic Bank of Thailand Annual Report 2007

The merge with the Krung Thai Bank's Shariah Banking Service increased the KTB's ownership by 4.09 percent. Also, the IBT's Government ownership increased tremendously to a 48.54 percent (Ministry of Finance) plus the Government Savings Bank's 39.81 percent, what made the bank become 88.35 percent Government owned. Hence, the Brunei Islamic bank's moved out from the major shareholders list, which means the IBT has no major foreign shareholder. In the new bank structure, there are

new certain corporate governance aspects. The Islamic Bank of Thailand defined five major corporate governance aspects in 2006. First is the creativity in new visions for adding new values to businesses in long run. The bank must work securely sophisticatedly for offering excellent service under sufficient management. Moreover in the second point, the bank aimed to earn accountability and be responsible, high managers and Board are entrusted with certain responsibilities, with the help of certain sub committees. The following sub committees operating for help the Board and executives; management sub-committee, the audit sub-committee, the risk management sub-committee, the credit review sub-committee, the assets and liabilities sub-committee and the structure and compensation sub-committee.

Another aspect in corporate governance is the operation transparency and information disclosure. Making financial statements clear and reliable, available for public, shareholders and investors, for the convenient access to any information. The bank also provides equity treatment to all stakeholders based on their rights and duties. Treatment of major and small shareholders aimed to be equal. And last but not least, the Islamic Bank of Thailand promote business ethics where directors, executives, managers must perform their duties with the honestly, with integrity and without and self interest.

The structure of the Board of Directors is another aspect we should consider during this research. The structure and so on the structural changes of any firm's Board of Directors could affect the efficiency of the firm.

Table 1.7.3 The Islamic Bank of Thailand Board Structure in 2004

Name	Background	Position
Mr. Sanit Rangnoi	Dep. Per. Sec. of the Ministry of Finance	Chairman
Mr. Bantoon Waitanomsat	Director, The Mass Rapid Transit Authority of Thailand	Vice Chairman
Mr. Visit Tantisunthorn	Chairman of BAAC 30 year Fund	Director
Mr. Aroon Boonchom	Secretary General of Government Pension Fund	Director
Mr. Jaran Maluleem	Director of Dhibbaya Ins. Pub. Co. Ltd	Director
Mr. Somnuk Tanatipat	Director of Halal Food Standard Institute	Director
Haji Mohd Roselan bin Haji Mohd Daud	Advisor of Financial Services according to the Islamic Precepts, Government Savings Bank	Director
Mr. Anant Tangtatswas	Chairman of the Committee of Following, Office of the PM.	Director
Mr. Sanit Rangnoi	Advisor of the PM.	Director and Secretary
Mr. Bantoon Waitanomsat	Chairman of the Sub-Committee of the Following –Up the Govt. Operation of Zone 12 th (Trang, Pattalung, Songkla, Pattani, Yala, Narathiwat	Chairman

Source: Islamic Bank of Thailand Annual Report 2004

The highlighted positions denote the company which has ownership in the Islamic Bank of Thailand.

The only change in the Board of Directors from 2004 to 2005 is the new member Mr. Dheerasak Suwannayos, Director, Chairman of the Executive Sub Committee, Acting President. Mr Suwannayos replaced Mr. Anant Tangtatswas from Jun 1 2005 onwards. This decision made in the Annual Shareholders Meeting No. 2/2005. The significance of this change is that Mr. Suwannayos came from the

advisor of the Board of Directors, therefore one advisor of the Board of Directors missing.

The year 2006 brought changes to the structure of the Board of Directors due to some resignation and retirement. The main event of the changes, similarly as in 2005, was the Annual General Meeting of Shareholders. On the meeting Mr. Sanit Rangnoi re-elected as a Chairman of the board, after his retirement on rotation through the lottery-drawing method, for another term. Mr. Kitti Patpong Pibul appointed to replace Mr. Somnuk Thanathipat who also retired on rotation through lottery-drawing method. The last change in 2006 in the Board of Directors is that Haji Mohd Roselan Bin Haji Daud, director from Brunei Darussalam, was asked to resign from the directorship.

The year 2007 brought numerous changes to the structure of the Board of Directors. In the first half of the year, two of the members was resigned, Mr. Visit Tantisunthorn on 1st of March and Mr. Sanit Rangnoi on 30th of March. On the second half of the year other two members resigned from its post in the Board of Directors. Mr. Bunthoon Vaithanomsat resigned on the 9th of October and Mr. Dheerasak Suwanayos resigned on the 27th of November. On the Extraordinary Shareholders' Meeting No. 2/2550 on the 29th of November, Assoc. Prof. Sarita Bunnag, Mr. Theera Wittawuthisak and Ms Chompoonut Sumanaseranee were appointed as new directors.

One can argue that these frequent changes result a relative inefficiency of the bank during the period of 2004 to 2007. There is no clear computable evidence that the frequent changes affected negatively the bank's efficiency. However, the effectiveness and so on the efficiency must be affected by the changes since the

Annual Shareholders Meeting's main attention focused on the resignations and re-elections of the members of the Board. Another reason to support this statement is the relative short time the members spend in the Board. Effectively anticipate in the building of the bank is required longer period of time.

Opposing this argument, the changes continued in the Board of Directors in 2008 and 2009, however, the efficiency of the bank increased tremendously. In fact, originate high efficiency change from only one factor is not compulsory in any research, especially when this factor, in our case the Board of Directors, cannot include in any kind of efficiency calculation for find evidences. The Board of Directors structure in 2008, when the efficiency of the bank improved, and when the first positive profit earned since the existence of the bank was the follows;

Table 1.7.4 Board of Directors in 2008¹

Name	Background	Position
Professor, Doctor Lieutenant General Somchai Virunhaphon	Executive Director, The Halal Standard Inst. Of Thailand State Audit Commissioner, Office of the Auditor General Thailand Professor and Dean of the Economics Faculty, Chulachomklao Royal Military Academy School	Chairman
Mr. Suthep Suebsantiwoangse	Director, Miwan Co, Ltd Ex. Vice President, Commercial Dept., HR and Gen. Man, Ground Cost. Service, Marketing, Thai Airways Intl. Pcl. Area Manager, Japan, Indonesia, Thai Airways Intl. Pcl.	Director
Associate Professor Isra Sarntisart	Chairman of the Board of Director to Performance Appraisal, CDePS, Vice Dean, Faculty of Economics, Chulalongkorn University	

¹The listed carrier background of the directors may not represent the complete carrier path of each individual.

	Committee, Board of Director, Thai Health Found Director of Muslim Center, Asian Study Center, Chulalongkorn University Board of Director of the R&D Center, Petroleum Authority Thailand	Director
Mrs. Jinda Teppatra	Committee of Khong Song Co. Ltd Committee of Krung Thai Business Serv. Co. Ltd Committee of NEP Real Estate and Industry Pub. Co. Ltd	Director
Mr. Sayan Satangmongkol	Deputy Managing Director, Risk Management Dept., Interior Audit Dept., Krung Thai Bank Public Co. Ltd Committee of Bangchak Petroleum Public Co. Ltd Committee of Thanathep Printing Committee of Krung Thai Law	Director
Mr. Krissada Kaweeyarn	Counselor, Thai Investment, Lehman Brothers Counselor to the Minister of ICT, ICT	Director
Mr. Alan Wonganan	Counselor to the Committee of the Ministry of Finance Director of the Domestic Relation Center, the PM's Office Counselor to the President of the State Railway of Thailand	Director
Mr. Jesadavat Priebjivat	Director of Investment Banking, Siam City Credit Security Public Co. Ltd Dep. Man. Director, MFC Asset Management Public Co. Ltd Committee of Sansiri Public Co. Ltd Committee of Apex Circuit (Thailand) Co. Ltd	Director
Mr. Dheerasak Suwannayos	Chairman of the Board of Directors, Krung Thai Asset Management Co. Ltd Chairman of the Board of Directors, Shariah Banking Krung Thai Bank Public Co. Ltd President, Islamic Bank of Thailand Director, MCOT Public Co. Ltd Counselor of Krung Thai Asset Management Co. Ltd	Director
M.R. Mr. Sasiprin Chandaratat	Director, Phillip Investment (Thailand) Public Co. Ltd Chairman of the Board of Directors, Ayudhaya Derivative Co. Ltd Managing Director, Ploenchi Capital Co. Ltd	Director

Source: Annual Report 2008, Islamic Bank of Thailand

As seen from this table, neither of the original members from 2004 appears in the Board of Directors in 2008. The Chairman also changed from 2007. It is important to see that Mr. Dheerasak Suwannayos is once again in the board after his resignation in 2006.

Additionally the changes regarding to the Board of Directors in the year of 2009 was the follows.

Table 1.7.5 Board of Directors in 2009

Name	Background	Position
Bandhit Sothiplarit	Ambassador to South Africa, India and Australia Retired Gov. Official, Ministry of Foreign Affairs Advisor, Ministry of Foreign Affairs	Chairman
Mr. Sasiprin Chandaratat	Director, Phillip Investment (Thailand) Public Co. Ltd Chairman of the Board of Directors, Ayudhaya Derivative Co. Ltd Managing Director, Ploenchi Capital Co. Ltd	Director
Associate Professor Isra Sarntisart	Chairman of the Board of Director to Performance Appraisal, CDePS, Vice Dean, Faculty of Economics, Chulalongkorn University Committee, Board of Director, Thai Health Found Director of Muslim Center, Asian Study Center, Chulalongkorn University Board of Director of the R&D Center, Petroleum Authority Thailand	Director
Mrs. Jinda Teppatra	Committee of Khong Song Co. Ltd Committee of Krung Thai Business Serv. Co. Ltd Committee of NEP Real Estate and Industry Pub. Co. Ltd	Director

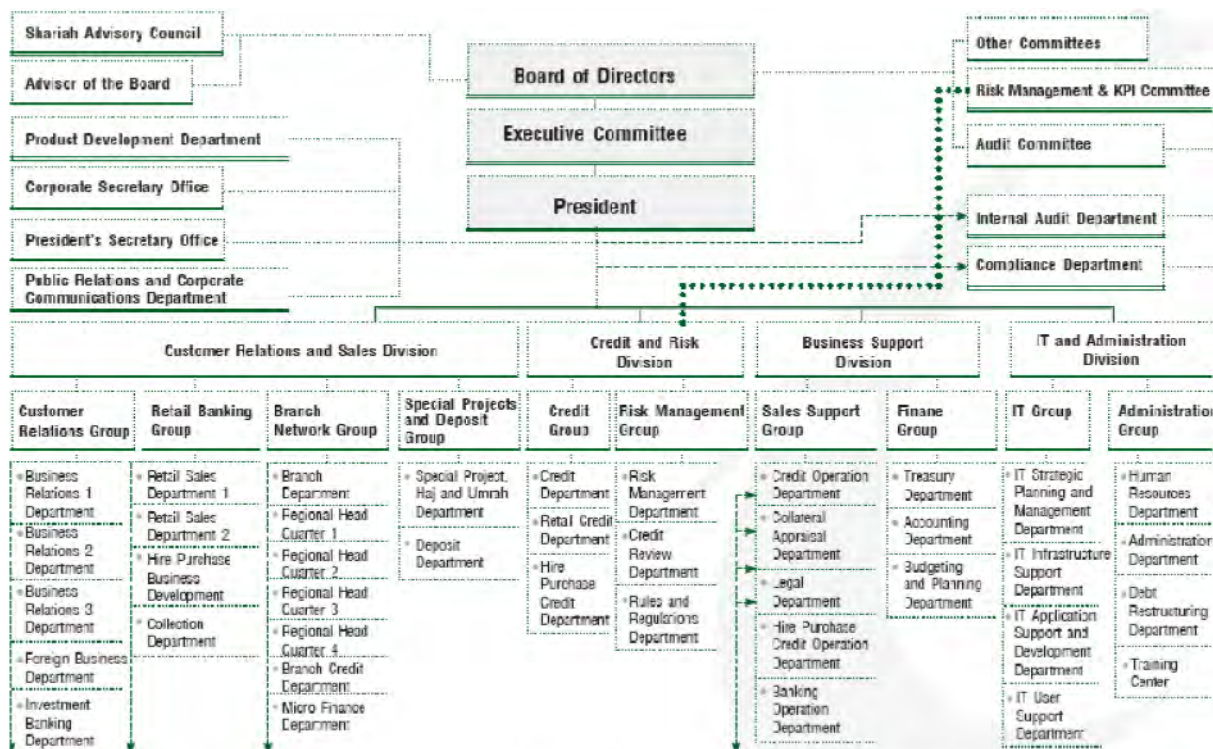
Mr. Sayan Satangmongkol	Deputy Managing Director, Risk Management Dept., Interior Audit Dept., Krung Thai Bank Public Co. Ltd Committee of Bangchak Petroleum Public Co. Ltd Committee of Thanathep Printing Committee of Krung Thai Law	Director
Mr. Krissada Kaweeyarn	Counselor, Thai Investment, Lehman Bothers Counselor to the Minister of ICT, ICT	Director
Mr. Alan Wonganan	Counselor to the Committee of the Ministry of Finance Director of the Domestic Relation Center, the PM's Office Counselor to the President of the State Railway of Thailand	Director
Mr. Jesadavat Priebjrivat	Director of Investment Banking, Siam City Credit Security Public Co. Ltd Dep. Man. Director, MFC Asset Management Public Co. Ltd Committee of Sansiri Public Co. Ltd Committee of Apex Circuit (Thailand) Co. Ltd	Director
Mr. Dheerasak Suwannayos	Chairman of the Board of Directors, Krung Thai Asset Management Co. Ltd Chairman of the Board of Directors, Shariah Banking Krung Thai Bank Public Co. Ltd President, Islamic Bank of Thailand Director, MCOT Public Co. Ltd Counselor of Krung Thai Asset Management Co. Ltd	Director
Mr. Ekapab Polsue	Representative of Roi Et Province, House of Representatives Deputy Secretary to the PM Assist. Secretary to Minister of Interior and Transportation	Director
Mr. Akekasak Ocharoe	Advisor, Excise Control Development, Ministry of Finance Board Member, The Transport Co. Ltd Deputy Director, Department of Excise	Director

Source; Annual Report 2009, Islamic Bank of Thailand

Interesting fact that, the board is gone through less change in this last two years than it did previously. The chairman has been changed but the majority of the board remained in their position. This is could be a supporting fact that the bank's efficiency closely related to the stability and the structure of the board.

In 2008, the Board again realized the importance of good corporate governance, and ordered the establishment of the Sub-Committee on Good Governance. The sub-committee includes member of the board, high level executives and representatives from labor union. As the role of this sub-committee, new policies and corporate governance guideline being issued in 2008. The new policies contain ethic regulations in practice for employees in every level. However, the principles of the IBT's corporate governance have not been changed by the new sub-committee just extended. What has been changed since 2004 is the bank's Organization.

Figure 1.7.3 Operation structure of the Islamic Bank of Thailand in 2009



Source: Islamic Bank of Thailand, Annual Report 2009

The Operating structure as observable from figure 1.7.3, is changed significantly since the banks opening. This change mainly originated from the increased size of the bank, and the periodically established committees. Due to the restructuring of the bank, the four group changed to Divisions, a new Executive Board established and many sub-committee established under, and for the Board's help. In 2009, the last researched year, the Islamic Bank of Thailand's executives presented on the next page.

Table 1.7.6 Islamic Bank of Thailand, Executives 2009

Mr. Dheerasak Suwannayos, President	
Mr. Pongstorn Kuanusorn Senior	Mr. Ratchasuwan Pitpayan, Ph.D. ,

Executive Vice President, Customer Relations	Senior Executive Vice President, Retail Banking and Special Projects and Deposits
Mr. Che Lasin bin Che Deraman, Senior Executive Vice President Information Technology	Ms. Saleeporn Natebhukkana, Executive Vice President, Finance
Ms. Uraiwan Maneechote, Executive Vice President, Branch Network	Mr. Korkiat Wongaree, Executive Vice President, Administration

Source; Islamic Bank of Thailand, Annual Report 2009

1.8 The Shariah Advisory Committee

As in every Islamic Financial or Insurance institution, where the main objective is the business conduct according to the Islamic Law, the Shariah, there is a religious advisory committee required. The Islamic Bank of Thailand is not an exception from these requirements. The main role of the Shariah Advisory committee in every Islamic financial institution is to advise and to ensure that the operations and activities of the banking institution comply with Shariah principles. Before launching a new product, the bank's management has to discuss and get approved from the advisory council. The council's main role is to determine whether the new product violates Islamic laws or not. In some case, bank's has they own advisory council, but there are existing independent council for mainly smaller institutions. The Islamic Bank of Thailand in fact has its own Shariah Advisory committee. However, the Shariah Advisory committee of the Islamic Bank of Thailand not just observing and

advising the upcoming new financial products and policies of the bank, but with awareness of its duties and responsibilities, the council has searched and followed upon development of Islamic products globally, to be e help of the bank's management. In average, the council organizes ten meetings per year. Until now, the Islamic Bank of Thailand's financial products are all passed the requirements of the Shariah, which means the bank operate without any violation of the Islamic law. The advisory committee has five members include the Chairman. The Chairman of the Advisory Committee has not been changed since the opening of the bank, and until recent days, Mr. Aroon Boonchom has been the head.

CHAPTER II

LITERATURE REVIEW

This part is aimed to introduce some of the previously published literature, those which help to contribute and write in this research topic. The literature review is divided into three parts. The importance of dividing the literature review is the three different kind of required field study which presented in this work. The first part will include the literature corresponding for the Islamic banking and finance. There are several work explaining and introducing the characteristic of Islamic banking. Some of them contribute in Islamic banks efficiency analysis as well. The second part contains reference works for the financial ratio analysis. Since this part restrain the most common analysis in banking, literatures are well supplied. The third part is the references for the data envelopment analysis. This method is a relative new mathematical modeling, which quiet under published in economic review and researches. On the other hand, sufficient amount of literature already available to find satisfying references for this research topic, set up the mathematical model, and organize determinants especially for Islamic banking, as some researcher previously ran this method on Islamic financial institutions.

2.1 Literature referring on Financial Ratios

(Moin, 2008) made an effort to find out whether the conventional or Islamic banks are more profitable. He used the financial ratios among both kind of banking systems to find answers for his question. He then calculated the ratios, compared its

standard deviation and means to each other and concluded the result after every each ratios. This research and his paper shares 11 financial ratios, and consider being the biggest benchmark paper for the first part. The result of his paper is the conventional banks are more profitable and are significantly different from Islamic bank in Return on Equity (ROE) and Profit Expense Ratio (PER). Return on Equity is widely used to measure the corporation's profitability, with the simple mean of how much the profit the company generates with the shareholders money. The Profit Expense Ratio is a common term measures the expenses as a percentage of revenue. However, conventional banks are not significantly different from their counterpart in terms of Return on Asset (ROA). Further analysis of ROE and PER reveals that Islamic bank is getting closer to conventional banks in an upward trend. Moreover, in a separate study of one to one comparison of each of conventional bank in the group with Islamic bank reveals that Islamic bank (MBL) outperforms some of the conventional banks in the selected group.

The use of financial ratios to measure the performance of banks is popular for numerous reasons, such as the easy way to calculate and interpret them especially for people with less academic knowledge, then the complicated econometric results. The following authors, (Johnes, Izzeldin and Pappas, 2009) in their article "The efficiency of Islamic and conventional banks in the Gulf Cooperation Council (GCC) countries: An analysis using financial ratios and data envelopment analysis", also argued that fact of using financial ratios, similarly as in this work, but moreover the interesting part is, they also use Data Envelopment Analysis (DEA), but in a different way as here presented.

(Hassan, Abdel-Hameed and M. Bashir, 1996) analyzed how bank characteristics and the overall financial environment affect the performance of Islamic banks in the research, *Determinants of Islamic Banking Profitability*. They use a variety of internal and external banking characteristics, which were used to predict profitability and efficiency. They found that the Islamic banks' profitability measures respond positively to the increases in capital and negatively to loan ratios. The results revealed that larger equity to total asset ratio leads to more profit margins. This finding is intuitive and consistent with previous studies. It indicates that adequate capital ratios play a weak empirical role in explaining the performance of Islamic banks. The aim of this research is to explain the changes between every period; the *Determinants of Islamic Banking Profitability* could help considering various micro and macroeconomic variable changes which could be the origin of changes in this work.

Apart from the Islamic Finance literature, other researches attempt to identify strengths and weaknesses of the financial ratios. (DeThomas, A., and Pophal, L. 2001) pointed out that the Return on Equity (ROE) ratio is a leading indicator for investors. The result of this ratio reflects the efficiency with which the owners' invested capital has been employed. This ratio is widely used and accepted in the field of business and economics

(Brigham, E. F., and Ehrhardt, M. C., 2005). In their text book *Financial management: theory and practice: study guide*, introduced other leading financial ratios. *The Return on Asset (ROA) ratio*, similarly the (ROE) ratio, identifies the firm effectiveness of using its total assets to generate income. However, the authors argue

that the ROA and other profitability ratio could be misleading. This lag is a result of absence of the accounts receivable from the balance total assets. In their argument stated that all kind of receivables and doubtful accounts should include in the consideration in any profitability ratio analysis, for overtaking misleading results.

(Brigham, E. F., and Ehrhardt, M. C., 2005) argued the relation between the capital adequacy ratio and the non-performing loan ratio. To clarify the relation main-bank health and its effects on efficiency, they used multivariate regression analysis. The aim of this analysis is to find evidence whether if the capital adequacy ratio and the non-performing loan ratio give leading information about the financial wealth and efficiency of the bank. In their research found that customers accounting bigger losses in a bank which has lower CAP and NPL ratio, than another bank with a better ratio, during financial turndown. This clarify that the CPL and NPL ratio is a good indicator for efficiency, risk and solvency.

2.2 Literature referring on Islamic Banking.

Zakat (alms) is the name of what a believer returns out of his or her wealth to the neediest of Muslims for the sake of the Almighty Allah. It is called Zakat because the word Zakat is from Zakaa which means, to increase, purify and bless. Zubair Iqba and Abbas Mirakhor (1985) moreover gave an in depth introduction and explanation in Islamic Banking. Their book in this field provides information's about Zakat, the Islamic tax, also explain the characteristic of Mudarabah and Musharaka. Those Islamic principles widely used in the Financial and Efficiency Analysis of the Islamic Bank of Thailand as a base of Islamic banking principles.

Mudaraba and Musharaka are equity-based investment arrangements similar to partnerships. In a Mudaraba, the project is financed by the investor and the entrepreneur (borrower) contributes skills and experience. In a Musharaka each party involved contributes cash to the venture. In both, a Mudaraba and a Musharaka, profits can be distributed according to any previously agreed ratio, but losses can only be shared according to the original investment. Thus in a Mudaraba investors bear all the losses. In a Wakala arrangement, funds of the investor (as principal) are managed by the other person (as agent). The agent may be remunerated in the form of a fixed fee and or a share in the profits (Jahangiri, 2009) Discussed and introduced the Musharaka and Mudarabah principles with his recent work “The rise and rise of Islamic Finance”. Unlikely to other scholars, Kashif approached to the topic with the business economist viewpoint, instead of the religious viewpoint. Applications such as graphic structural pictures contributed to make some of the recently thought difficult principles applicable into business schemes.

The difference between traditional fixed-interest financial scheme (FRS) versus an Islamic variable-return and profit-sharing scheme (VRS) from the viewpoint of welfare-maximizing economic agent (Shaghil Ahmed, 1989) published a review essay about Islamic banking with the title of “Islamic Banking and Finance”. The importance of this review is the concentrate of information about the practical and religious principle of Islamic Finance. This explanation of the debt versus equity financing and the variable returns to scale will come back again in Chapter 3, Data Envelopment Analysis, where the used model’s direction identified.

2.3 Literature Review for Data Envelopment Analysis

Data Envelopment Analysis, which apart from the common statistical analysis, use mathematical modeling for determine the efficiency of companies, organizations, governments, schools. First they identified the Decision Making Units DMU, which allowed them to evaluate the efficiency of every department or division of the researched firm, organization. The base model of the DEA linear programming introduced by (Charnes, A., Cooper, W. W., and Rhodes, E., 1978) the authors introducing the first in their work, “Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2, 429-444.” This equation presented in chapter 4 of this thesis, and later re composed for the characteristic of my research.

(Srinivas Talluri, 2000) pointed out that the linear equation proposed by Charnes in 1978, allows unrestricted weight flexibility when determining the efficiency points of the decision making units. This bias later will lead to an inappropriate high or low efficiency point of the DMU’s. The importance of the right efficiency points of each DMU is crucial when during the efficiency analysis of the Islamic Bank of Thailand. The reason for this is because each DMU represents the whole bank’s performance during a calendar year, and not just represents some division or branch. Incorrect weights and method could change the efficiency points for the DMU’s and leads to a very misleading result.

(Dyson and Thannassoulis, 1988) found that the weight restrictions allow for the integration of managerial preferences in terms of relative importance levels of various inputs and outputs. This means identifying the weights for each input and

output can be done by, not just observe the characteristic of the data, as usually been done in statistics, but also set up a priority rank by the investigated institution's management. This kind of weighting will give an overall picture of the bank's corporate governance, and a big help in the last part of the data envelopment analysis, where the modeling part take place. Therefore the bank's decision making process could be change any time in the simulation, for the sake of finding the better efficiency points for each year or so mentioned decision making units.

CHAPTER III

FINANCIAL RATIOS

3.1 Introduction to the Financial Ratios

Financial ratios are very useful indicators of a firm's financial situation and performance. Previously, some scholars are using financial ratios to predict firm's performance, credibility, liquidity and numerous other important characteristics. Hence, financial ratios are also commonly used for previous performance analysis of Islamic Banks, for example, bank regulators use financial ratios to evaluate bank's performance gave employed ratios for evaluating a bank's performance (Samad and Hassan 2000) / (Patnam, 1983) / (Meister and Elyasiani 1988) / (Spindler, 1991) / (Akkas, 1994) / (Sabi, 1996) and (Samad, 1999) / (Ali and Rami, 2006). Most ratios can be calculated by the firm's financial statement. The method of the calculation is very simple, without any complicated econometric or mathematical method; it is easily interpretable for shareholders and for other people who do not generally have deep understanding of the complicated econometric outcomes.

“The use of financial ratios to measure the performance of banks and firm is popular for a number of reasons. Financial ratios are easy to calculate and to interpret, especially for shareholders who usually prefer financial ratios over complex econometric outputs.” (Hassan and Bashir, 2000).

In order to see how Islamic Bank of Thailand performed since it has been operated; this study uses 16 financial ratios to measure the performance. These ratios are broadly categorized into eight groups. The main objective of this part is not just to

distinguish the results of the ratio calculation but to explain the changes and investigate the reasons behind the changes in every ratio annually. However, by only calculating financial ratios might not give us the comprehensive answer for the profitability of the bank; it gives us a strong picture about the yearly performance of the bank and the benchmark for understanding the more complex outcome of data envelopment analysis.

Since Thailand has only one Islamic Bank, comparing the calculated results to another conventional bank in Thailand might be a mistake. It can mislead our views because the essentially different governance of the two kinds of institutions is different. For this reason, I decided to find another Islamic Bank which has similar characteristics and size from outside of Thailand who shares accessible data. The bank must not only share the size and management characteristics but also shares similar political and financial environment as the Islamic Bank of Thailand. To be able to find a bank which is similar to the one in Thailand, I have looked into non-Muslim countries with an estimating size of Muslim population similar to Thailand. The Muslim population in Thailand is around 3.930.000 person by 2009 (Mapping the global Muslim population. Report on the Size and Distribution of the World's Muslim Population [Pew Research Centre] October 2009). This number is 5.8% of the whole population; hence Muslims in Thailand takes 0.3% of the World Muslim population. For the best comparison I find a country with similar data according to the Muslim population. A few countries came in focus during the data collection. One of them is Thailand's neighbor, Myanmar with a 1.9 million Muslim population, which takes around 3.8% of the total population. Other countries came in my scope is Nepal (1.2 million and 4.2%), Kenya (2.8 million and 7%), and the Philippines with 4.7 million

Muslims and 5.1%. However, by number of population and percentage, it is still difficult to predict which country is the best to compare to Thailand in Muslim environment and Islamic banking. Finding the right country by financial environment is not an easy task. The determinants of the similar economic environment are too broad to define in both developed and developing countries. Finding GDP and GNP data is a little bit closer answer, but it is still not satisfying, in my opinion, to give the complete answers to my research questions. Nevertheless, a method has been found by a Pakistani economist Mahbub ul Haq in 1990 and had an explicit purpose: “to shift the focus of development economics from national income accounting to people centered policies.” (Haq, 1990). The name of this method is the Human Development Index. The Human Development Index (HDI) is a composite static used to rank countries by the level of their “human development”. The index separates developed (high development), developing (middle development), and underdeveloped (low development) countries. “The HDI is a summary composite index that measures a country's average achievements in three basic aspects of human development: health, knowledge, and a decent standard of living. Health is measured by life expectancy at birth; knowledge is measured by a combination of the adult literacy rate and the combined primary, secondary, and tertiary gross enrolment ratio; and standard of living by GDP per capita (PPP US\$)” (What is Human Development Index? [UNDP] nd.). According to this statement, it illustrates a more complex and more social aspect than the economical determinants. I found the Human Development Index the best for comparing my focused countries. By the United Nations Development Program, Thailand considered to be a Medium Human Developed (developing) country, with a highly increasing numbers, which already made Thailand to be the top of the Medium

Human Developed countries list at 2007, with a number of 0.797. Thus the highest HDI point in the Medium Human Developed countries is 0.798, slightly more than Thailand is the country Ecuador. The ultimate highest point is received by Norway. Norway's HDI at 2007 is 0.978.

From here on we just have to find a country which shares the same Muslim characteristics as Thailand does, and a similar Human Development Index's number. Luckily one of our focused countries, Philippines is listed in the same (Medium Human Developed) group, with the 0.745 index number. For this reason, the Philippines is the closest country to Thailand from the above investigated countries. The Philippines has 4.654.000 Muslims as previously mentioned which takes around 5.1% of the whole population correspondingly with the Muslim population in Thailand. The Muslims in the Philippines are the largest minority group as also perceived in Thailand. The population concentrated on the South side of the Philippines with a comparable poorer development and infrastructure than in the capital area. Since 1973, the Al-Amanah Islamic Investment Bank of the Philippines was the only one financial institution which provides Islamic financial products. The bank's long establishment could give us a reason to worry about comparing with the Islamic Bank of Thailand. The Al-Amanah bank is 100% owned by the Development Bank of the Philippines which is also owned by the government; this leads to a clear conclusion that the government plays a big role in the corporate governance. Thailand and the Philippines shares many characteristics, concerning the Muslims in each country; the relation between the Muslim population and the government is similar in both countries, not to mention there is only one Islamic bank in each country whose governance are highly effected by the government. Al-Amanah Islamic Investment

Bank of the Philippines will be the best comparable to the Islamic Bank of Thailand in the first part of this research.

3.2 Profitability Ratio

Every firm is mostly concerned with its profitability. One of the most frequently used tools of financial ratio analysis is profitability ratios which are used to determine the company's bottom line. Profitability measures are important method for both company managers and owners. If a small business has outside investors who put their own money into the company, the primary owner certainly has to show profitability to those equity investors. Profitability ratios show the company's overall efficiency and performance. We can divide profitability ratios into two types: margins and returns. Ratios that show margins represent the firm's ability to translate sales dollars into profits at various stages of the measurement. Ratios that show returns represent the firm's ability to measure the overall efficiency of the firm in generating returns for its shareholders. For most of these ratios, having a higher value relatively to a competitor's ratio and the same ratio from a previous period indicates that the company is doing well.

Profitability ratios vary in a few different variations. In my dissertation I choose three kind of profitability ratios, namely the Return on Asset (ROA), Return on Equity (ROE) and the Profit to Expenses ratio (PER).

3.2.1 Return on Assets (ROA)

Return on assets indicates the profitability on the assets of the firm after all expenses and taxes. This is a common way to measure managerial performance. It measures how much does the firm earn after it is taxed from every each baht/peso invested in the assets of the firm. The higher ration means better managerial performance and efficient utilization of the assets of the firm, and the lower ratio is the indicator of the inefficient use of assets. ROA is calculated as follows;

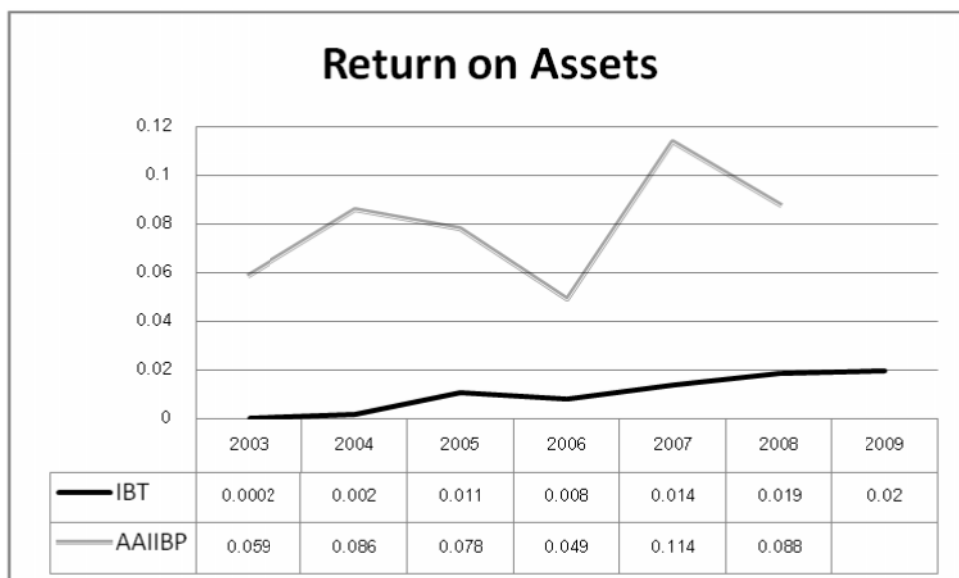
$$ROA = \frac{\text{Net profit after tax}}{\text{Total Assets}}$$

The expected ratio is positive in this case; however negative number could come out as a result of the difficult start of the Bank.

Table 3.2.1 Return on Assets Ratios

Years	Islamic Bank of Thailand		Al-Amanah Islamic Bank
	Ratio with net profit include doubtful accounts	Ratio without considering the doubtful accounts	
2003	0.00008	0.00026	0.059
2004	0.0018	0.002	0.086
2005	0.0083	0.011	0.078
2006	0.005	0.008	0.049
2007	0.006	0.014	0.114
2008	0.015	0.019	0.088
2009	0.017	0.020	N/A

Figure 3.2.1 Return on Assets



The first column represents the ratio with the net profit include doubtful accounts in the calculation. Doubtful account records the sums (accounts) which the collection looks uncertain. Such accounts are termed 'bad debts' and are usually written off against the profit of the firm as expense. As we can see from the calculation, IBT has a very low value (even lower after doubtful account), but has been increasing until 2005, there is a stagnancy and has been decreasing until 2007 where this trend starts to become upward going again, approaching to the values of the AAIIBP. This early low values could be explained by the opening of the bank, unfortunately no data available for AAIIBP in the first operating years recorded , so the comparison is not possible for this early stage. However the increasing trend is a good sign for IBT. Moreover, the attempt to calculate managerial performance from this ratio might be misleading since the early years tendencies showed that the firm was showing an increasing trend in ROA ratios, the conclusion could be drawn to that the IBT has an improving managerial performance from 2007 till 2009, which

reflected from the continuously increasing numbers. Calculation of the ROA ratio can give a clearer picture from the AAIIBP since we framed a middle aged banks performances for the observed period not for a newly developed bank like IBT. Yearly we can observe the volatility in the bank performance in AAIIBP, with a comparably high increase in 2006 and 2007, which due from the increasing net profit, which dramatically dropped almost to its half for 2008, where profit decrease only observed once in the IBT during the period from 2005 to 2006. Hence, AAIIBP has a tremendously lower amount of total assets then her Thai counterpart. Hence, ROA for public companies could vary substantially and is industry-specific. Therefore, when we use ROA as a comparative measure, the best is to compare the company's previous ROA numbers or the ROA of a similar company.

Additionally, (Ali Salman Saleh and Rami Zeitun 2006) researched and identified the financial ratios for the Jordan Islamic Bank for Finance and Investment, which considered the strongest Islamic financial institution in the Jordan. The ratio result showed 0.33 for the year 2003 in the category of ROA. However, a random comparison with a JIBFI is irrelevant.

3.2.2 Return on Equity (ROE)

Return on equity indicates the profitability to shareholders of the firm after all expenses and taxes (Van Horne 2005). It measures how much the firm is earning after tax for each baht/dollar invested in the firm. In other words, ROE is the net earnings per baht/dollar equity capital. Higher ROA means better managerial performance, however higher return on equity may be due to debt (financial leverage) or higher

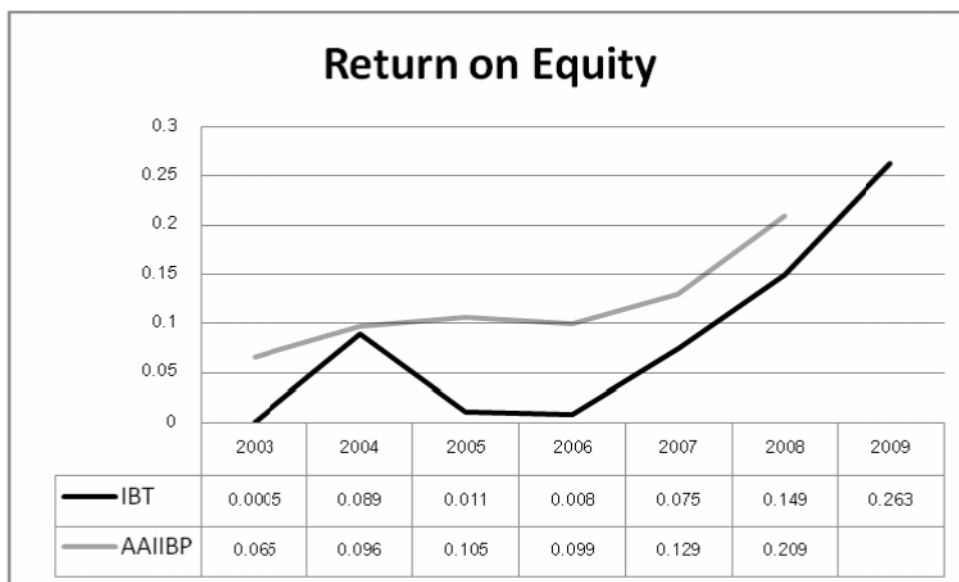
return on assets. Financial Leverage establishes an important difference between ROA and ROE, which is the financial leverage, always expand ROE. This will always be the case if ROA is greater the interest rate on debt (Ross, Westerfield and Jaffe 2005).

$$ROE = \frac{\text{Net profit after tax}}{\text{Shareholders Equity}}$$

Table 3.2.2 Return on Equity Ratios

	Islamic Bank of Thailand		Al-Amanah Islamic Bank
	Net profit includes doubtful accounts	Net profit without doubtful accounts	
2003	0.0005	<i>-0.0002</i>	0.065
2004	0.089	<i>0.074</i>	0.096
2005	0.011	<i>0.0083</i>	0.105
2006	0.008	<i>0.0049</i>	0.099
2007	0.075	<i>0.034</i>	0.129
2008	0.149	<i>0.118</i>	0.209
2009	0.269	<i>0.227</i>	N/A

Figure 3.2.2 Return on Equity



As observable from the previous calculation, the IBT's ROE ratio starts very low in the first observed year. However, this could be the reason from the starting of the banks operating activity, and not from the bad managerial performance. Return on equity ratio is calculated by dividing the net profit after tax with the shareholders equity. Clearly, when a firm, either it's a bank or a transportation company or even a corner shop (if it has shareholders of course); the shareholders equity should exceed the after tax profit in the first year(s). As showed in table 5.1.2, for IBT, there are two very different results for the ROE ratio in the first years. This is because the two different perspectives adopted during the data process from the balance sheet. In each year, the top highlighted numbers denotes the result of the calculation, when the net profit after tax unit includes the doubtful accounts. Doubtful account is a bad account, the company usually accounts as deficit, so it might not fit in the profit criteria, and since it is not already accounted as loss; we may be able to leave it in the net profit. Both results are represented in the table, but this paper uses the net profit after tax

include doubtful accounts resulting in the graph. However, this change might give as a different result each year, notable decreasing difference by the observed periods; and it is still not affected our aim to find the differences in managerial performance. Hence, the ratio has an increasing trend; we could draw it as a consequence of a better managerial performance each year simply because the net profit gets closer to the shareholders equity. Debatable if that approach is fast enough to conclude that the bank had a good managerial performance in the observed seven years. As we can see, there is stagnancy between 2004 and 2007, and the increase only started again in 2008. This stagnancy and the two low years (2005, 2006) are originated from the high shareholders equity instead of the managements low performance since the net profit is increasing substantially. In comparison the AAIIBP, IBT already reached the level in 2009 after only a few years of existence, what AAIIBP has after more than a decade. Also AAIIBP has a quiet stable trend in ROE ratio, except the last observed year, but change is coming from the banks lowered equity, instead of the increased profit.

3.2.3 Profit to Expenses Ratio (PER)

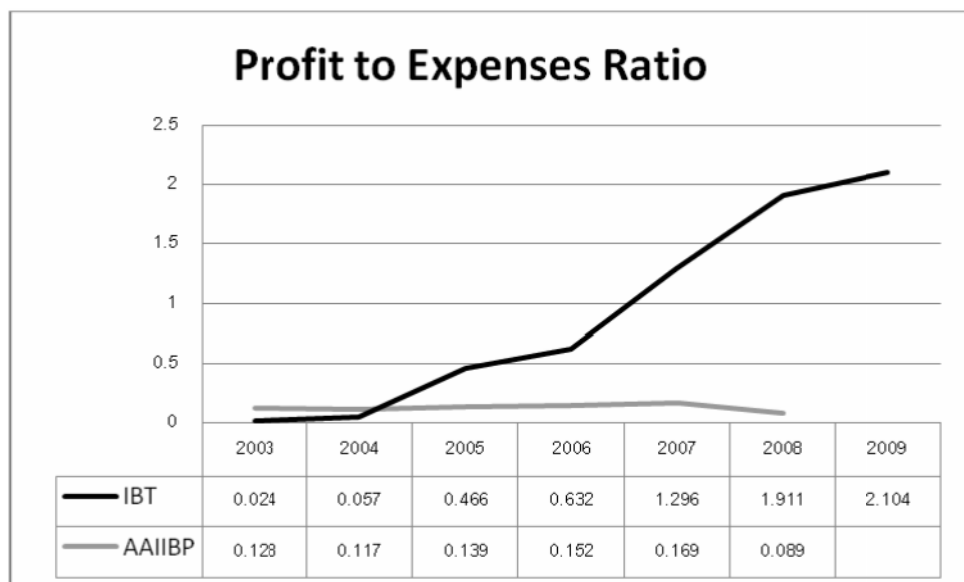
To Measure the operating profitability of the bank with regards of its total operating expenses. Here, the operating profit is defined as earnings before tax and operating expenses equals to the total non-interest expenses. The ratio measures the amount of operating profit earned for each bath/peso of the operating expense. The ratio indicates to what extent the bank is efficient in controlling its operating expenses. A higher PER means the bank is efficient and is making higher profits.

$$PER = \frac{\text{Profit before tax}}{\text{Operating expenses}}$$

Table 3.2.3 Profit to Expenses Ratios

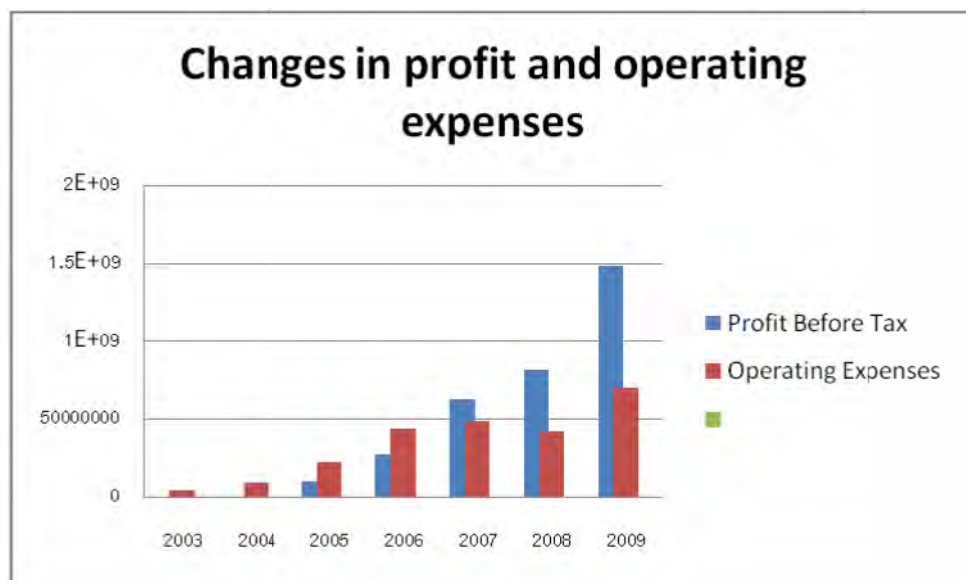
	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.024	0.128
2004	0.057	0.117
2005	0.466	0.139
2006	0.632	0.152
2007	1.296	0.169
2008	1.911	0.089
2009	2.104	N/A

Figure 3.2.3 Profit to Expenses Ratio



The findings of the profit expense ratio in this case reflect a very good trend for the Islamic Bank of Thailand. Since every firm seeks one of the core principles of doing business, when the profit exceed the operating expenses, in other words, the firm earns more than its spending. However, this could be a tightly misleading conclusion, since the calculated method includes profit only before paying tax, and in that case, after paying tax, the ratios still could not exceed the expenses, hence, it only happened in 2007 for the IBT. Anyhow the increasing trend of this ratio let us conclude the bank getting more and more efficient by each year, with a hardly observable stagnancy. However with a little calculation, we can find out where this increase coming from. Either it could come from the improved managerial performance, as the profit increases or a better cost efficient operation which would reflect a smaller increase in operating expenses.

Figure 3.2.4 Changes in profit and operating expenses



As we can see from this chart, the profit before tax increases in on a yearly basis, which is a very good sign for a new bank, however operating cost has a

proportionally slower increase than the profit. We can conclude that the bank has a good profit-expenses trend.

3.3 Liquidity Ratios

Liquidity ratios indicate the ability of the firm to meet the recurring financial obligations. Liquidity is important for the firm to avoid defaulting on its financial obligations and thus, to avoid experiencing financial distress (Ross, Westerfield, Jaffe 2005). These ratios measure ability of the firm to meet its short term obligations, maintain cash position, and collect receivables. In general sense, the higher liquidity ratios mean the bank has a larger margin of safety and ability to cover its short term obligations. Because saving accounts and transaction deposits can be withdrawn at any time, there is high liquidity risk for both the banks and other depository institutions. The banks can get into liquidity problem especially when withdrawals exceed new deposit significantly over a short period of time (Samad and Hassan 2000). Measures of liquidity include Loan to Deposit Ratio (LDR), Cash & Portfolio Investment to Deposit Ratio (CPID), and Loan to Asset Ratio (LAR). In advance, figures of this ratio are lower than the current ratio. Supermarkets can, for example, easily survive on ratios as low as 0.4 with cash being received for goods sold before the goods are actually paid for. Plant hire contractors would also expect ratios as low as 0.6 to 0.8. Clothing retailers also operate at very low levels, with average figures being between 0.2 and 0.6 and retail as a whole between 0.3 and 0.7. In manufacturing figures between 0.7 and 1.1 are seen as an acceptable; and for wholesalers 0.7 to 1.0. Construction should operate at between 0.6 and 1.0

3.3.1 Loan to Deposit Ratio (LDR)

Loan to deposit Ratio is the most important ratio to measure the liquidity condition of the bank. Here, loan means the advances for the conventional banks and financings for the Islamic banks. Because Islamic banks are prohibited to extend loans and earn interest (Riba) and restricted to follow Islamic Shari'ah Principles while conducting their banking business operations so the only way the Islamic banks can utilize their deposits is to provide financings through different Islamic financial products.

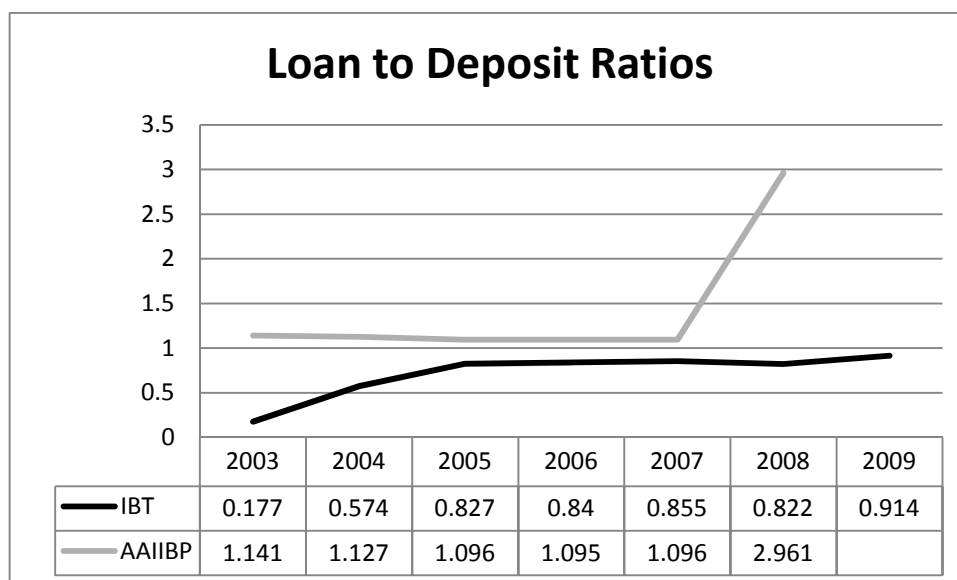
$$LDR = \frac{Loan}{Deposit}$$

Table 3.3.1 Loan to Deposit Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank ²
2003	0.177=17.7%	1.141=114.1%
2004	0.574=57.4%	1.127=112.7%
2005	0.827=82.7%	1.096=109.6%
2006	0.84=84%	1.095=109.5%
2007	0.855=85.5%	1.096=109.6%
2008	0.822=82.2%	2.961=296.1%
2009	0.914=91.4%	N/A

² Include conventional and Islamic deposits

Figure 3.3.1 Loan to Deposit Ratio



As previously stated, the loan to deposit ratio is the most important liquidity measure for a bank. A high, over 100 percent LTD ratio indicates liquidity risk. The low LTD ratio however denotes less liquidity risk and high stickiness of funds. To be able to interpret these results and find both banks liquidity, we have to do further calculations. when the LTD ratios is below 100%, then lower the loan to deposit ratio, also the money multiplier is low; it shows a high stickiness of the funds and lower the liquidity risk. On the other hand, if the LTD ratio is very low, that points out that the bank earns less then it could. However for the AAIIBP, as mentioned, neither of the observed period experience ratio lower than 100% which points out the risk of liquidity. This is the reason we should worry about the liquidity in banking because it's a risk of a situation when a demand made by a Depositor to withdraw Cash (narrow money) cannot be met by a Bank. When the Money Multiplier is 1 (or less) liquidity risk is 0%: \$1 (or more) Cash Reserves covers every \$1 Deposits on a Bank's Loan/Deposit Balance Sheet. If Money Multiplier tends to infinity liquidity

risk is 100% in a finite time: at the limit, \$1 Cash would have to cover infinite amount of dollars of Deposits on a Bank's Loan/Deposit Balance Sheet. Liquidity risk is associated with a phenomenon called "bank run" when large number of depositors in a same or relatively short time decide to withdraw their cash from the bank, and the bank has not enough deposits and fail to pay out all the withdraws which would cause directly a incredibility for the bank, which leads to more depositors to withdraw their cash either deposit into another bank or even worst (in sense of liquidity) keep in privately at home. Since the bank is not able to pay out its depositors, the institution goes bankrupt. As we can see, in 2008 the Al-Amanah bank experienced an almost 300% LTD ratio. However, instead of letting the bank went bankrupt, on February 6, 2008, the board of Directors of the Development Bank of the Philippines (DBP) in accordance with DBP Board Resolution No. 0050 series of 2008 approved the acquisition of the Al-Amanah Islamic Investment Bank of Philippines (AAIIBP) and on October 30, 2005 completed the acquisition of the Shareholding of the National Government, Privatization and Management Office, Social Security System and Government Service Insurance System, thereby controlling up to 99.53% of issued subscribed and paid-in capital of AAIIBP (Financial Statement, Status of Operation [AAIIBP] paragraph 2). Consequently, all incumbent officers and employees of AAIIBP were retired and let go as of July 15, 2008, except for two employees who were retained. A total of P50.32 million³ retirement and separation benefits were granted to the 75 employees out of the total 77 employees of the bank. Unfortunately data is still not available from 2009, for analyze the effect of this acquisition on this balance sheet item.

³ US \$1,132,338 calculated in 2008 USD/PP middle exchange rate.

In the case of IBT, the LTD ratio in the first two observed year in 2003 and 2004 is very low. This is the reason of the relative less loans compared to the deposited money into the bank. From 2005, the ratio is come up to over 80 percent and in 2009 pass the 90 percent. Since the bank does not exceed the 100 percent LTD ratio, we can not imply liquidity risk for the bank. For a comparison, the average LTD ratio for all commercial banks in Thailand was 86.45 percent in 2006, 94.31 percent in 2007, 105.49 percent in 2008 and 109.63 percent in 2009, according to the Bank of Thailand statistics. Having these average results, we can state that the IBT is operate with a low liquidity risk, close to the industry's average, and has a promising improvement in 2009.

3.3.2 Cash & Portfolio Investment to Deposit Ratio (CPIDR)

Another measure of liquidity of the bank is the cash and portfolio investments to deposit ratio. The higher the ratio the better is the liquidity position of the bank, therefore, the more the confidence and trust of the depositors in the bank as compared to the bank with lower CPIDR.

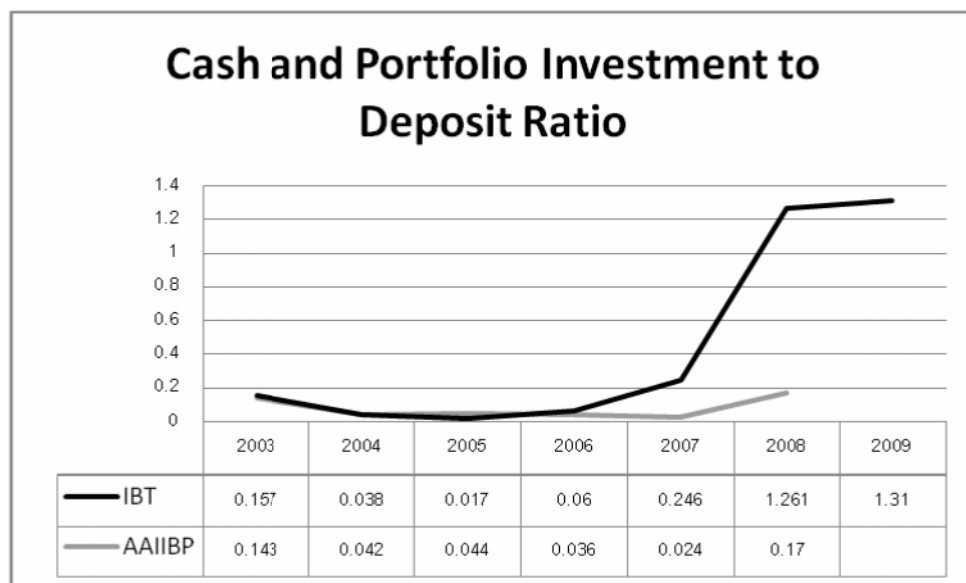
$$CPIDR = \frac{\text{Cash \& Portfolio Investment}}{\text{Deposits}}$$

Table 3.3.2 Cash and Portfolio Investment Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.157	0.143
2004	0.038	0.042

2005	0.017	0.044
2006	0.060	0.036
2007	0.246	0.024
2008	1.261	0.147
2009	1.315	N/A

Figure 3.3.2 Cash and Portfolio Investment to Deposit Ratio



As another liquidity measurement, CPIDR is important to support the wanted conclusion that the IBT has no or limited liquidity risk. As seen in the loan to deposit ratio, the bank has an overall higher rate than 100 percent which could give as a reason to worry, or be uncertainly stating the no liquidity risk. As we can see IBT has an increasing CPIDR ratio, apart from AAIIBP which has a very low and stagnant result. Surpassing the ratio value 1, let's conclude that the bank has a higher amount

of cash and portfolio investment than her deposits; it reflects a well managed funds, and moreover, could be a supportive element for investors confidence.

3.3.3 Loan to Asset Ratio (LAR)

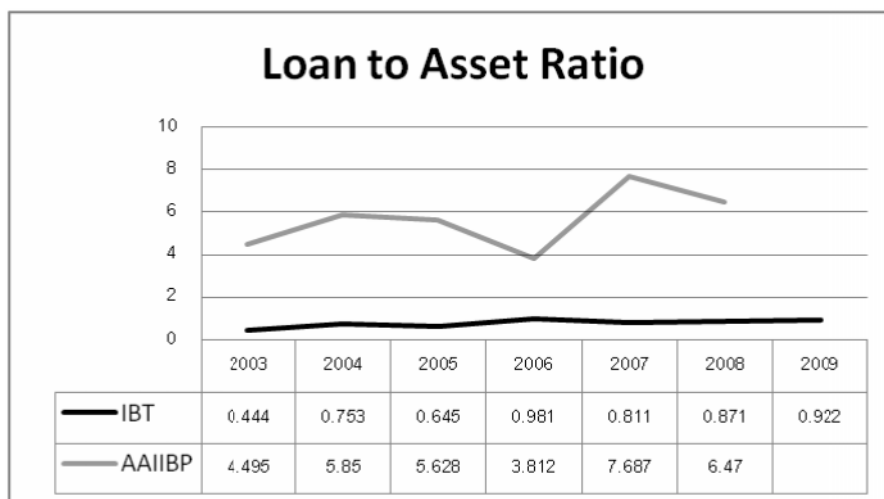
Like LDR, loan to assets ratio (LAR) is also another important ratio that measures the liquidity condition of the bank. Whereas LDR is a ratio in which liquidity of the bank is measured in terms of its deposits, LAR measures liquidity of the bank in terms of its total assets. The higher this ratio, it indicates a bank loan is up and its liquidity is low. The higher the ratio, the more risky a bank may be to higher defaults.

$$LAR = \frac{\text{Loan}}{\text{Total Assets}}$$

Table 3.3.3 Loan to Asset Ratio

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.444	4.495
2004	0.753	5.850
2005	0.645	5.628
2006	0.981	3.812
2007	0.811	7.687
2008	0.871	6.470
2009	0.922	N/A

Figure 3.3.3 Loan to Asset Ratio



As we can see from this table, the Islamic Bank of Thailand has relatively low loan to assets ratio which suggests a good liquidity of the bank unlike the Al-Amanah bank, where these ratios are much higher and really pointing out the high liquidity risk of the bank, without exception in all calculated time period. No year get close to any of the IBT's results, or to the normal level. Concluding from this ratio and ad AAIIBP as a benchmark, IBT is better in liquidity risk and better managed.

3.4 Risk and Solvency Ratios

This is a class of ratios that measures the risk and solvency of the firm. These ratios are also referred to as gearing, debt or financial leverage ratios. The extent to which a firm relies on debt financing rather equity is related with financial leverage. These ratios determine the probability that the firm default on its debt contacts. The more the debt a firm has the higher is the chance that the firm will become unable to fulfill its contractual obligations. In other words, higher levels of debt can lead to

higher probability of bankruptcy and financial distress. Although, debt is an important form of finance that provided a significant tax advantage, it may create conflict of interest between the creditors and the shareholders (Ross, Westerfield and Jaffe 2005). If the amount of assets is greater than amount of its all types of liabilities, the bank is considered to be solvent.

3.4.1 Debt-Equity Ratio (DER)

It is one of the tools to measure the extent to which the firm uses debt. It measures the ability of the bank's capital to absorb financial shocks. In case, creditors default in paying back their loans or the asset values decrease bank capital provides shield against those loan losses. Also its indicates the financial leverage of the bank and shows the proportion of debt and equity used for finance the bank's assets. A bank with lower DER is considered better as compared to the bank with higher DER.

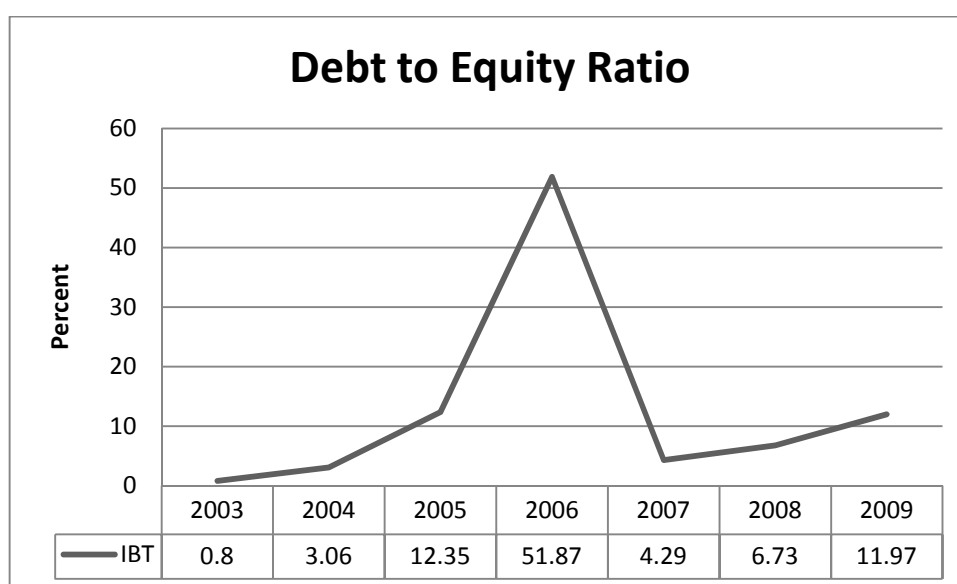
$$DER = \frac{\text{Total Liabilities}}{\text{Shareholders Equity}}$$

Table 3.4.1 Debt-Equity Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.8	N/A
2004	3.06	N/A
2005	12.35	N/A
2006	51.87	N/A
2007	4.29	N/A

2008	6.73	N/A
2009	11.97	N/A

Figure 3.4.1 Debt to Equity Ratio



Debt to equity ratio leaves a blank space in the financial ratio analysis. The result of this is the shortage of data from the AAIIBP. The provided data set from the bank unfortunately does not include the debt or total debt of the company. Without the calculation of the AAIIBP's debt to equity ratio, there is no benchmark left for the IBT. Hence, in some other case, where the shortage of data appears; there is no benchmark or comparison presented for the Islamic Bank of Thailand.

Moreover, the value and trend analysis of the IBT's results are achievable. The main benefit of this ratio is the help for measure the extent to which the bank uses debt. Without benchmark data, it is hard to tell that the IBT's results are acceptable or not for Islamic banks. In a sense, it can be observed that the bank once experienced an

almost 52 percent debt to equity level in 2006. The reason for this is lying in the proportion of shareholders equity. In 2006 the bank had only 165 million baht shareholders equity compared to 2005 when this number was almost 500 million, and in the year later in 2007, already passed the 3 billion baht, as a result of newly issued shares.

3.4.2 Debt to Total Assets Ratio (DTAR)

Debt to Total Assets Ratio measures the amount of total debt the firm used to finance its total assets. It is an indicator of financial strength of the bank. It provides information about the solvency and the ability of the firm to obtain additional financing for potentially attractive investment opportunities. Higher DTAR means the bank has financed most of its assets through debt as compared to the equity financing.

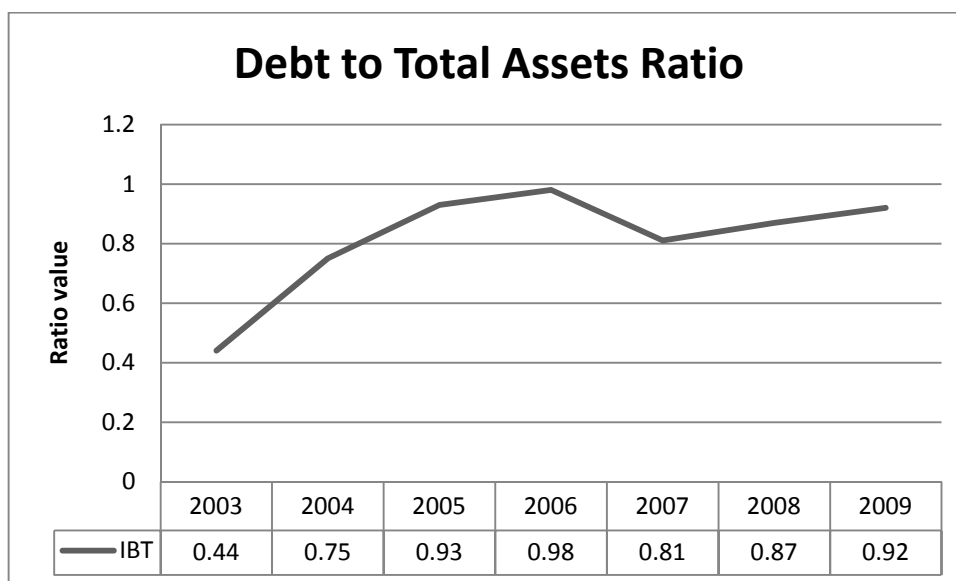
$$DTAR = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

Table 3.4.2 Debt to Total Assets Ratio

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.44	N/A
2004	0.75	N/A
2005	0.93	N/A
2006	0.98	N/A
2007	0.81	N/A
2008	0.87	N/A

2009	0.92	N/A
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Figure 3.4.2 Debt to Total Asset



The same case was observed in the debt to total assets ratio calculation as it happened in the debt to equity ratio. The shortage of the AAIIBP's data makes it unachievable to compare the two financial institutions debt management. As done in the previous ratio analysis, some further analysis of the available data is possible without the need of comparison. The debt to total assets ratio measures the amount of debt the bank use to finance its total assets; it reflects solvency and capability of asset financing. The results for this calculation are lower than the result was for the debt to equity ratio. This is because the much higher amount of total assets. Respectably, the bank has around 12 times more total assets than total shareholders' equity in some years like 2008 and 2009. The first year of this calculation is 2003, when the ratio is 0.44. The ratio shows an increase until 2006, when the total liabilities almost surpass the value of the total assets. This trend is changing in 2007 and 2008, when the total

assets averagely higher than the total liabilities with around three billion baht. In 2009, this difference is 3.5 billion baht because of the increased total assets.

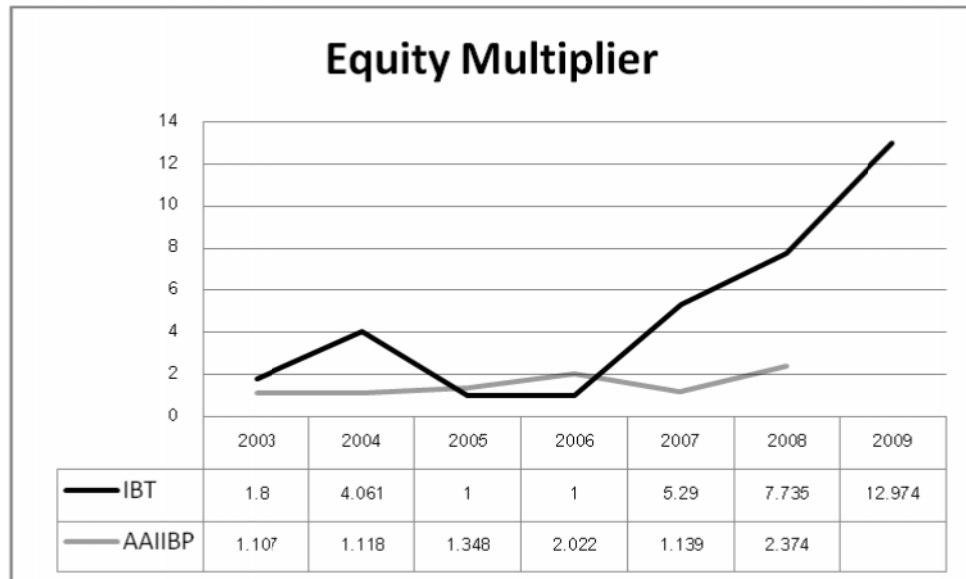
3.4.3 Equity Multiplier (EM)

How many times the total assets are of the shareholders' equity is measured by equity multiplier. In other words, it indicates the amount of assets per dollar of shareholders' equity. Higher value of EM means that the bank has been using more debt to convert into assets with share capital. The equity multiplier is called as leverage ratio or financial leverage ratio because the ratio points out the financial leverage of the company, the higher ratio means the bank has higher financial leverage, and the bank is relying on more debt to finance its asset base.

$$EM = \frac{\text{Total Assets}}{\text{Total Shareholders Equity}}$$

Table 3.4.3 Equity Multiplier Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	1.800	1.107
2004	4.061	1.118
2005	1*	1.348
2006	1*	2.022
2007	5.290	1.139
2008	7.735	2.374
2009	12.974	N/A

Figure 3.4.3 Equity Multiplier

From this calculation we are able to see how much the bank is dependent on debt to finance its assets. AAIIBP shows a stagnant, slightly increasing trend, but never go over 2.374; this result shows that the bank used leverage to increase assets to more than two times of what it would be if they relied only on the existing equity. As we can see, this increase is over 12 times in the case of IBT.

3.4.4 Non-Performing Loan Ratio

Non-Performing Loan is a type of loan which the borrower is not making interest payments or repaying any principal. To find the point where the loan is classified as non-performing by the bank, and when it becomes bad debt depending on local regulations. Banks normally set aside money to cover potential losses on loans (loan loss provisions) and write off bad debt in their profit and loss account.

Non-performing loans are the result of credit risk. Many originate determination of non-performing loans as the major future losses of the bank. That's why calculating the banks non performing loan ratio is essential for an in depth analysis. With this ratio we can evaluate the financial frugidity of the institution and could use as a trigger for regulatory actions (Mamiko Yoko-Arai, Nd., Financial Stability Issues: The case of East Asia). A high NPL ratio demonstrates the poor quality of the bank's assets, increasing liquidity risk and competitiveness. Sheng has modeled 15 percent threshold nonperforming loans to total assets for a bank to be totally de-capitalized at the CAR of 8 percent (A. Sheng, Nd., Banking Fragility in the 1980's). However Sheng's model calculated on U.S. conventional banks in the 1980's. By the year 2000, a research about Chinese commercial banks showed a 31.06 percent of non-performing loans, which demonstrate a very poor quality of assets but still not caused big damages to the bank since the ratio had been pushed back to normal levels in the following years. High non performing loan ratio pulls a low Capital Adequacy Ratio with itself (Jianxu Chen and Huici Shi, Nd., Banking and Insurance in the new China). Formulation for calculating the non-performing loan ratios is the follow:

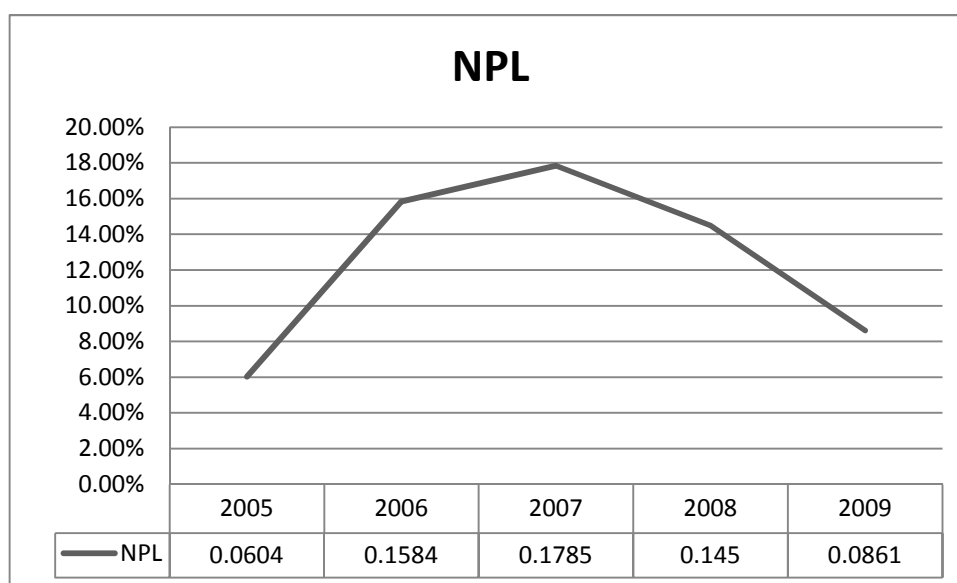
$$\text{NPL} = \frac{\text{Non-performing loans}}{\text{Total loans}}$$

Table 3.4.4 Non-Performing Loan Ratio

	Islamic Bank of Thailand
2003	N/A
2004	N/A

2005	6.04%
2006	15.84%
2007	17.85%
2008	14.50%
2009	8.61%

Figure 3.4.4 Non-Performing Loan Ratio



As seen from this graph, and also from the result of the calculation, the non-performing loans have been accounted in the Islamic Bank of Thailand since 2005. Unfortunately the efficient data for calculating the non-performing loan ratio for the AAIIBP is not available due to the banks changed ownership and early inefficient documentation. As we can see, the non-performing loan compared to the total loans is relatively low, and recently have a decreasing trend. However, one can see the increase since 2005 to 2007. At the point of 2007, the NPL ratio to the total loans

actually reached a peak point but then sharply decreased. The reason of this decrease is the new technological changes in the bank and the improved way of managing risk. The Islamic Bank of Thailand issued her risk management guideline in 2007 for the better way of managing risk in the future. The risk which affects the NPL is the credit risk. The credit risk basically occurs when the banks debtors could not comply with what previously agreed. The IBT however has its main income from financing based activities, the credit risk is extremely important. Hence, the risk could affect not just the income of the bank but the capital funds as well. This affects the financing quality deteriorating which results in higher non-performing loans where most of them are old loans and transferred loans. The key for solving this high amount of non-performing loans is the task of the Business Development Department which asked to expedite the restructuring process. The bank's management also stated the deadline and the clear formulated rules and regulations for debt restructuring. Also the IBT started to monitor her costumers' credit rating more often and loan revisions adopted from the Bank of Thailand. The bank's financial processing improved by 2008 and also the non-performing loan ratio shows a decline in this calculation. As mentioned, the new restructuring went through in 2007 which had the strong effects on the year 2008. Preventions of debt default were employed such as the pre-approve process, financing analysis, monitoring system, and higher check and balance system. The responsible department for all of these changes is the Risk Management Sub-Committee, and the Asset and Liabilities Management Sub-Committee which is responsible for developing strategies on managing liquidity risk and market risk.

3.5 Efficiency Ratios

These ratios measure how effectively and efficiently the firm is managing and controlling its assets. These ratios indicate the overall effectiveness of the firm in utilizing its assets to generate sales, quality of receivables and how successful the firm is in its collections, the promptness of payment to suppliers by the firm, effectiveness of the inventory management practices, and efficiency of firm in controlling its expenses. Higher value of these ratios is taken as good indicator which means firm is doing well.

3.5.1 Asset Utilization (AU)

How effectively the bank is utilizing all of its assets is measured by assets utilization ratio. The bank is presumably said to be using its assets effectively in generating total revenues if the AU ratio is high. If the ratio of AU is low, the bank is not using its assets to their capacity and should either increase total revenues or dispose of some of the assets (Ross, Westerfield and Jaffe 2005).

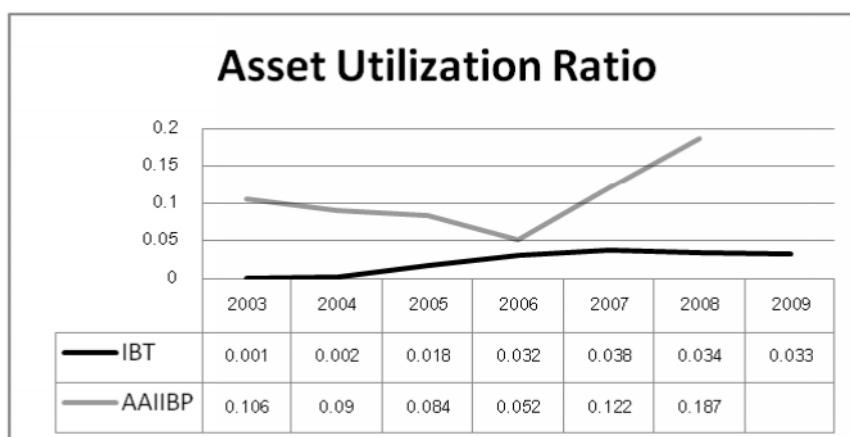
$$AU = \frac{\text{Total Revenue}}{\text{Total Assets}}$$

Table 3.5.1 Asset Utilization Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.001	0.106
2004	0.002	0.090

2005	0.018	0.084
2006	0.032	0.052
2007	0.038	0.122
2008	0.034	0.187
2009	0.033	N/A

Figure 3.5.1 Asset Utilization Ratio



The results of the asset utilization ratio give us a picture of how effective the bank is using her assets to generate revenue. Interpreting the results is done by the following way. If the ratio is 1, this means that the bank generates one bath/peso revenues from every each bath/peso in their assets. Clearly that either of the banks has this high number. However, comparing the results from year to year, we can have some idea about the yearly trend of the utilization efficiency. From the graph we can see a slow but steady increase for IBT which from 2007 went back to decreasing. This is simple because the banks total assets increased proportionally in a bigger measures than her revenue. The question here is why the banks management could not raise the

revenue in the same proportion as the asset increase. The answer could be in the long term investments where the turnover revenue will appear later on in the balance sheet. On the other hand, the AAIIBP shows stronger performance in asset utilization. Hence, this fact is a little bit misleading. We could think that in every observed period the AAIIBP “over performed” the IBT, but this is not the situation. AAIIBP in every period did not perform anything better than just receiving a steady amount of revenue, hence, neither from investment turnovers or service charges. Notably, the revenue of the bank is so low that the service charges of the bank could take a big proportion in her revenue. Changes in the ratio could only account to the changes of the total assets. Finding the bank that uses her assets more efficiently to turn it as a revenue turned out to be the IBT, even though the AAIIBP has better results from this calculation, but since we know the background of the numbers, we can say the Islamic Bank of Thailand is using her assets more efficiently in a meaning of turn it to revenue.

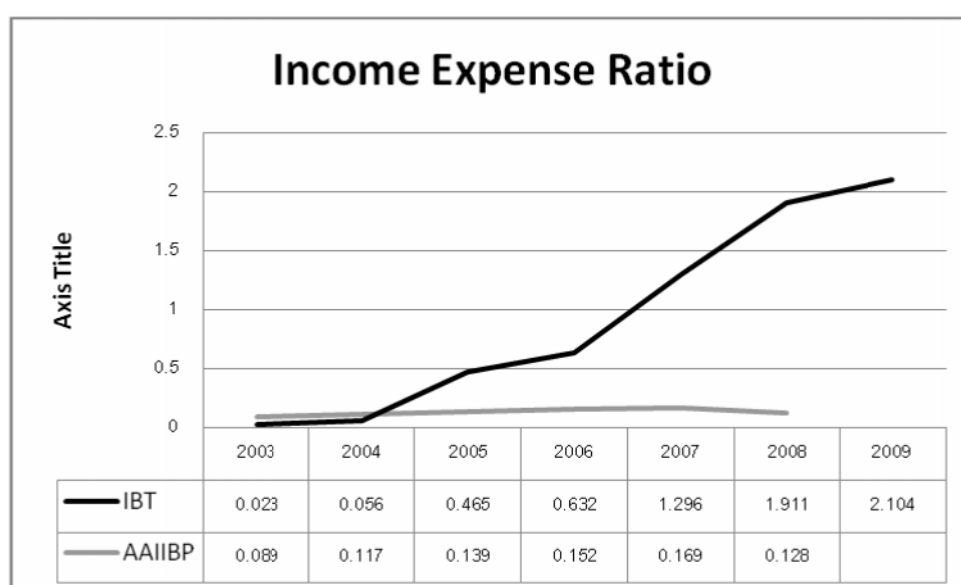
3.5.2 Income Expense Ratio (IER)

Income to expense is the ratio that measures amount of income earned per dollar of operating expense. This is the most commonly and widely used ratio in the banking sector to assess the managerial efficiency in generating total income vis-à-vis controlling its operating expenses. High IER is preferred over the lower one as this indicates the ability and efficiency of the bank in generating more total income in comparison to its total operating expenses.

$$IER = \frac{\textit{Total Income}}{\textit{Total Operating Expenses}}$$

Table 3.5.2 Income Expense Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.023	0.128
2004	0.056	0.117
2005	0.465	0.139
2006	0.632	0.152
2007	1.296	0.169
2008	1.911	0.089
2009	2.104	N/A

Figure 3.5.2 Income Expense Ratio

In the case of the Islamic Bank of Thailand, the income expense ratio is very low in the first two observed years. In 2003 and 2004 the bank's total operation expenses were 50 times more than its total income which changed by the year 2005

when it's only twice as much. In the year 2007, first time in the banks history, the total income already passed the total operation expenses which gave more than one ratio. From 2007 the ratio is steadily increasing and in 2009 the ratio is bigger than 2 due to the total income was more than twice as much as the operating expenses. From the table we can see that, the Al-Amanah bank's operating expense is more than double than its total income in every observed year, except in 2008 when the operating expenses was more than six times of the total income. The mean of the Income Expense Ratios is **0.348**

3.5.3 Operating Efficiency (OE)

Unlike Income Expense Ratio, which measures the amount of income earned per bath/peso of operating expense, Operating Expense is the ratio that measures the amount of operating expense per dollar of operating revenue. It measures managerial efficiency in generating operating revenues and controlling its operating expenses. In other words, how efficient the bank is in its operations. Lower OE is preferred over higher OE as lower OE indicates that operating expenses are lower than operating revenues.

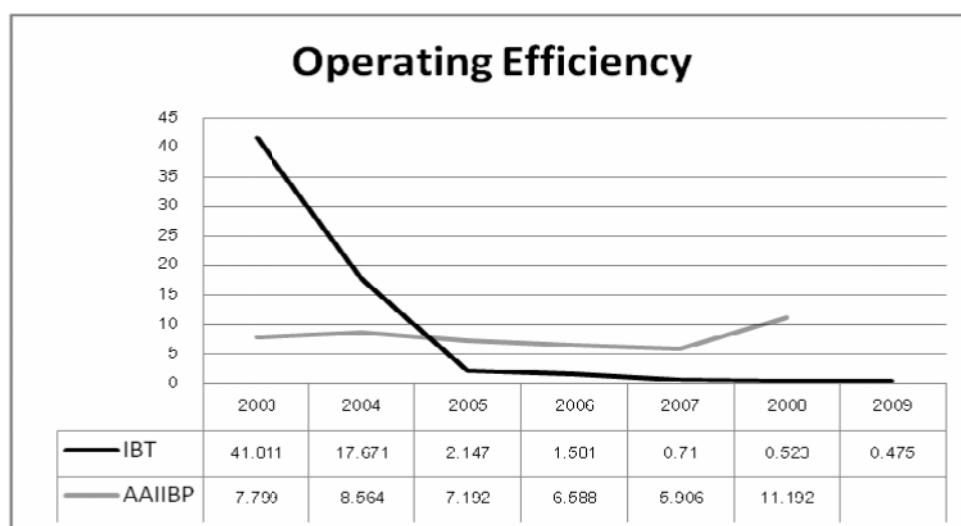
$$OE = \frac{\text{Total Operating Expenses}}{\text{Total Operating Revenue}}$$

Table 3.5.3 Operating Efficiency Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
--	--------------------------	------------------------

2003	41.811	7.799
2004	17.671	8.564
2005	2.147	7.192
2006	1.581	6.588
2007	0.771	5.906
2008	0.523	11.192
2009	0.474	N/A

Figure 3.5.3 Operating Efficiency



Clearly we can observe from this Operating expenses ratio that the IBT, as calculated before in the profit expense ratio, it has a good tendency of increasing income compared to her expenses. However in this calculation we can observe a reversed function where the expense is compared to the revenue and not the other way around. However, it does not change the fact that the bank is getting more efficient in every observed year. If we see the numbers, we can see that the operating expenses in

the first year was almost 42 times as high as the operating revenue which could be considered as acceptable for a new firm, unfortunately we don't have reliable data from the AAIIBP, to be able to compare the two banks who shares many similarities for starting up efficiency. The good fact is the bank decrease this ratio substantially in the first three years and went under the 1 ratio value in 2007, which can tell us that the total operating revenue was already higher than the total operating expenses.

3.5.4. Capital Adequacy Ratio (CAR)

Capital adequacy ratio is a formula used by financial regulators to keep track of how well-protected a bank is against the risks. The main principle of this ratio is to divide the bank's current capital with its current risks. Many countries, the bank's capital adequacy ratio is regulated and set for a minimum point.

For capital adequacy ratio purposes, the capital of a bank is classed in two tiers. As a general principle, tier 1 capital is what the bank can use immediately while still trading. Tier 2 capital is what would become available during the liquidation process if a bank is closed down. As the former is more valuable, some measurements of capital adequacy ratio only take into account tier 1 capital. "This ratio is used to protect depositors and promote the stability and efficiency of financial systems around the world" (Investopedia, 2010, online).

$$CAR = \frac{\textit{Tier 1 capital} + \textit{Tier 2 capital}}{\textit{Risk weighted assets}}$$

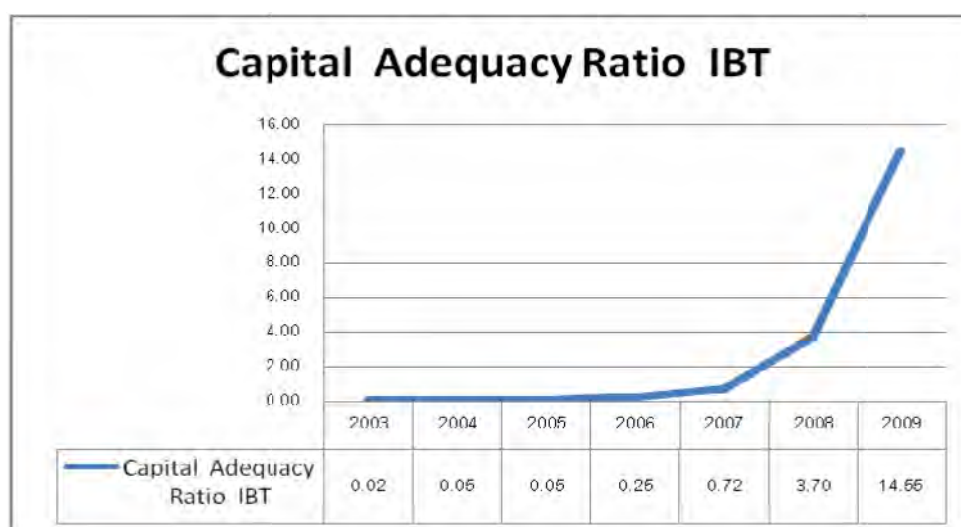
However, to calculate this ratio, we need to understand each component of the equation, to be able to find the required data from each bank's balance sheet. As mentioned before, tier capital 1 is what the bank can use immediately while still trading. This statement might not give us a clear picture of what we really need from the balance sheet. Tier 1 capital includes only permanent shareholders' equity (issued and fully-paid ordinary shares/common stock and perpetual non-cumulative preference shares) and disclosed reserves (created or increased by appropriations of retained earnings or other surplus, e.g. share premiums, retained profit, general reserves and legal reserves).

Tier 2 capital however includes undisclosed reserves which are eligible for addition within supplementary elements. This kind of reserves consist of that part of the accumulated after-tax surplus of retained profits which banks in some countries may be permitted to maintain as an undisclosed reserve. However, if the reserve is not identified in the balance sheet, it should have the same high quality and character as a disclosed capital reserve; as such, it should not be full by any liability but should be freely and immediately available to meet unforeseen future losses. The definition of these undisclosed reserves excludes hidden values rising from holdings of securities in the balance sheet at below current market prices (Basle Capital Accord, International Convergence of Capital Measurement and Capital Standard, 1998).

Finding the risk weighted asset also need further examination, since it is not appear in that form in the balance sheet. Risk weighted asset is he total assets a bank has, with the value of each asset adjusted by a factor that reflects its riskiness (Sanusi, 2001)

Table 3.5.4 Capital Adequacy Ratio

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.024	N/A
2004	0.049	N/A
2005	0.048	N/A
2006	0.246	N/A
2007	0.716	N/A
2008	3.702	N/A
2009	14.555	N/A

Figure 3.5.4 Capital Adequacy Ratio

In addition, Tier 2 capital is not present in the Islamic Bank of Thailand. Hence, the similar data's from the AAIIBP are not available. As seen from the recent graph, the capital adequacy ratio shows a tremendous increase from period to period. In some years the increase exceeds the 400 percent. The high increase from 2007

onwards could originate from the increased capital in 2007. In October, the bank increased its capital, making it strong enough to expand its operation and match authority's regulations. As the end of 2007 December, the Islamic Bank of Thailand's BIS ratio was 34 percent, which was higher than 8.5 percent required by the Minister Regulation and which also made the capital adequacy risk significantly decline. It would be a very interesting to continue the calculation for the year 2010, to see if the increasing capital adequacy ratio follows this trend. In 2007, when the capital adequacy risk started to decline enormously, the bank stated in its annual report, that they realized that to operate its business in a sustainable way, the bank must manage its risk effectively while having good governance. Having calculated the two following year, 2008 and 2009, in the respect of capital adequacy risk, the bank did reduced risk with a good governing implication.

3.6 Commitment to Economy and Muslim Community

In this part include three financial ratios to eliminate whether the bank commit enough to the Muslim society. Defining what is enough is a very hard task, and I do not attempt to do it, but in comparison with Al-Amanah bank from the Philippines, and with a little outlook for other commercial banks in Thailand, we will have a picture how much is the Islamic Bank of Thailand commit and contribute in the local Muslim society. The expected values in my opinion will be higher, then it would be in a commercial banks, since the Islamic banks aiming for not "just" profit maximization as most of the conventional banks does, but also aiming for helping the Muslim society, and not just the way that offering interest free banking and profit and loss

sharing products but also improving the environment of the local Muslim societies, by raise their living standards, improving education, so on so for. However, the fact that the Islamic Bank of Thailand is a quiet freshly established financial institution which still finding its way to become strong enough and financially stable in the Thai market, maybe give us some lower value as we expect. Fortunately the comparison with the Al-Amanah bank will give us a little clearer picture.

3.6.1. Long Term Loan Ratio

One way to establish a picture of a bank's commitment to its society is to see the characteristic of its offered financial products. As we already know, Islamic banks offer interest free and profit sharing financial products, and also pay Islamic tax, such as the zakat, moreover they donate higher amount for the community then conventional banks, but also a very important way of finding real commitment to the society, to check whether the bank offer long term loans and how those long term loans relate to the normal term loans. As many can see, long term loans are kind of essential elements for supporting development projects. Supporting long term development project for its community is the best way to help the society. As an old saying tell us

How can we differentiate long term loans from normal term loans? Long term loans are commonly set for more than three years. Most are between three and 10 years, and some run for as long as 20 years. Long-term loans are collateralized by a business's assets and typically require quarterly or monthly payments derived from profits or cash flow. These loans usually carry wording that limits the amount of

additional financial commitments the business may take on (including other debts but also dividends or principals' salaries), and they sometimes require that a certain amount of profit be set-aside to repay the loan.

$$LTA = \frac{\text{Long term loan}}{\text{total loans}}$$

Table 3.6.1 Long Term Loan Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	N/A	N/A
2004	N/A	N/A
2005	N/A	N/A
2006	N/A	N/A
2007	N/A	N/A
2008	N/A	N/A
2009	N/A	N/A

As we can see, both of the banks has no data for the long term loan ratio. The reason is that the AAIIBP has no direct registration of short and long term loans in their available balance sheet. The more interesting part is the Islamic Bank of Thailand. The IBT simple just do not distinguish between short and long term loans, but between different products.

3.6.2 Government Bond Investment

Governments issue bonds to obtain long-term loans from the public. The face value of the bond is guaranteed on maturity, and, since the bonds are bought on issue at less than the face value, there is a return on them. Because they can be bought and sold easily, these are good liquid assets, especially for the banks. In order to accomplish a long term loan projects and more other commitments to the Muslim society, the bank must maintain a safe financial environment for itself. Investing in government bonds are one of the safest if not the safest form of investment, however it could have a smaller return than other more risky forms of investments, but since the aim of the bank (or supposed to be the aim) is the long term stability and not fast and uncertain profit, calculating such an index as the government bond investment ratio is more than necessary in my opinion.

A higher Government Bond Investment indicates high liquidity and less risk

$$GBD = \frac{\text{Deposit invested in Gov't Bond}}{\text{Total Deposit}}$$

However, there is a problem when the economy is interest-free. The return is interest, and if one wants to avoid interest then should buy the bond today at its face. But the face value realized on maturity would have lost part of its purchasing power due to inflation. Some have suggested that these bonds be issued on a profit-and-loss-sharing basis. But then such funds are invested by governments in non-profit projects (such as infrastructure, schools and hospitals) or in long-term projects (such as power or irrigation).The dilemma and the debate continue. (Gafoor, 1999) suggests that the bonds be denominated in terms of gold-units. Then there will be no riba, for what is

given and what is returned will be the same, in kind and amount; and the lender will not suffer the inroads made by inflation.

There is an interesting aside to the suggestion: "... many Muslim individuals and institutions will buy government bonds without any qualms about being involved in *riba*. The government too stands to gain, because they will now be paying less for the funds than before. But the other side of the coin is that the money now comes in with a moral string attached —with a patriotic or *fi-sabilillah* (for-God) motive— unlike in the conventional case where the motive is private gain — guaranteed positive return on capital. This puts the government under a moral pressure to use the funds properly and for good causes." (Gafoor, 1999).

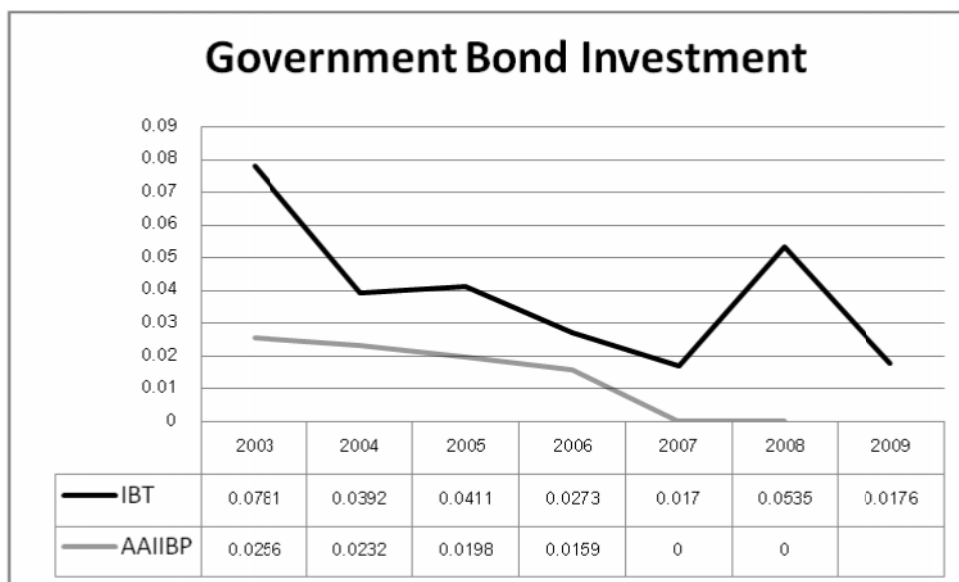
A higher Government Bond Investment indicates high liquidity and less risk

$$GBD = \frac{\text{Deposit invested in Gov't Bond}}{\text{Total Deposit}}$$

Table 3.6.2 Government Bond Investments

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.0781	0.0256
2004	0.0392	0.0232
2005	0.0411	0.0198
2006	0.0273	0.0159
2007	0.0170	0.51⁻⁵
2008	0.0535	0
2009	0.0176	N/A

Figure 3.6.2 Government Bond Investment



Analyzing this ratio as proposed earlier is very important, in a fact that we can see how much each bank invests in less-risky government bonds. By the resulted ratios we can see, the IBT invest more in government bonds. However, on the IBT's balance sheet, those items appear as long term investments, which could contain other form, not just government bonds. In the case of the AAIIBP this is a easier task, since in their balance sheet, it clearly appear that they invested in government bonds, but the question is, how much? Each years from 2003 until 2006 the bank invested a steady 10 million peso, which according to the historic exchange rates, was only \$226.286 in 2003 when the Philippine Peso was quiet strong, and only \$187.775 in 2006. The following years in 2007, the amount invested in government bonds was less than the bank spent on daily magazine subscriptions, and this investment trend continued in 2008 where the bank did not invest in any government or long term investment.

In the case of IBT, we can see a more positive trend investing into long term investments, but as stated before, not necessary that all the long term investment amount spent on government bonds, which only changes the fact that other long term investments might be more risky than government bonds, but after all, reflects the bank's long term commitment in investing, so for in future commitment to her customers and the Muslim society.

3.6.3 Mudaraba-Musharaka Ratio

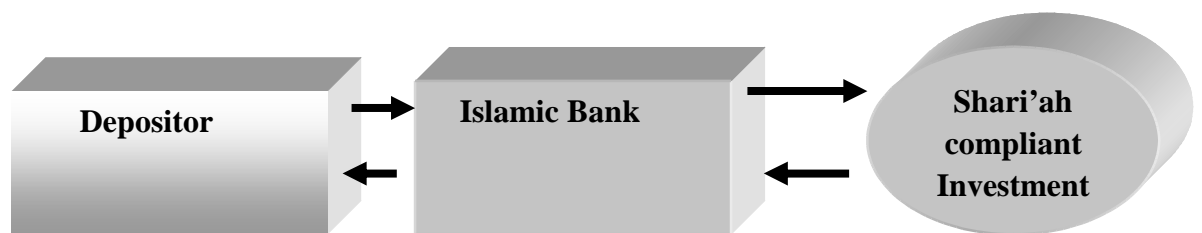
The main objective of Islamic Banking is profit sharing. Thus, it is important to identify how far the Islamic banks have successfully achieved the objective of their existence. The recent formula has been constructed to examine the above mentioned situation.

$$\text{Mudaraba – Musharaka Ratio (MMR)} = \frac{M - M}{\text{Total Loans}}$$

Mudaraba and Musharaka are equity-based investment arrangements similar to partnerships. In a Mudaraba, the project is financed by the investor and the entrepreneur (borrower) contributes skills and experience. In a Musharaka each party involved contributes cash to the venture. In both, a Mudaraba and a Musharaka, profits can be distributed according to any previously agreed ratio, but losses can only be shared according to the original investment. Thus in a Mudaraba investors bear all the losses. In a Wakala arrangement, funds of the investor (as principal) are managed by the other person (as agent). The agent may be remunerated in the form of a fixed fee and or a share in the profits (Jahangiri, 2009). Similar to Mudaraba and

Musharaka, any loss would be borne by the investor. Typically, an Islamic bank would receive customer deposits under either of these arrangements. In an Islamic banking system the Islamic bank is the entrepreneur when it receives deposits from the investors (deposit holders), and contributes services (and cash) to the venture by managing the depositors' funds. When the bank invests funds in different ventures using similar structures, it becomes the investor and the ultimate user of the funds becomes the entrepreneur. Alternatively, the funds can be invested by the Islamic bank in other Shari'ah compliant modes of investment, some of which are discussed in the ensuing paragraphs. The structure is illustrated below:

Figure 3.6.3 Mudarabah / Musharakha Investment



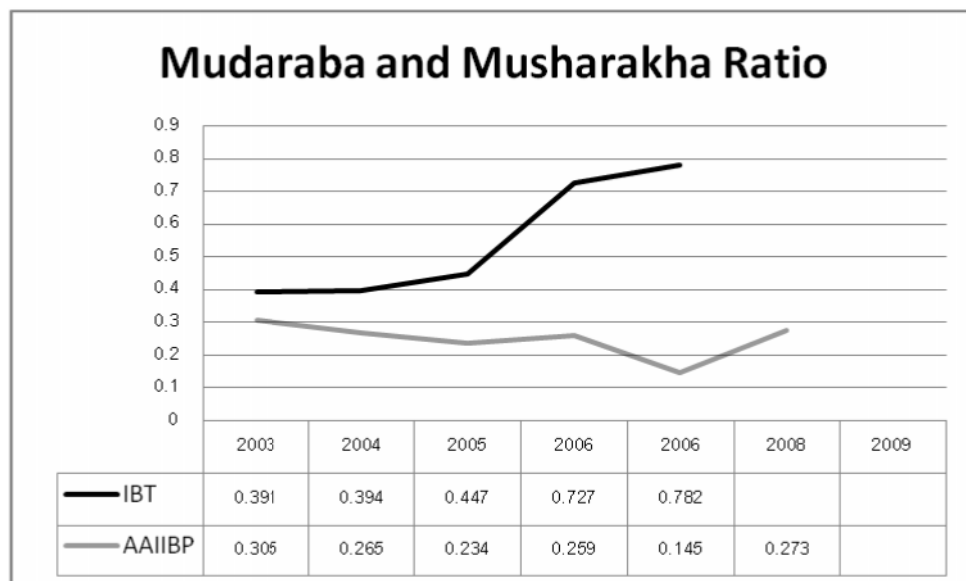
Periodic profits & return

After all calculation, the higher percentage of Mudaraba-Musharaka Ratio indicates a greater commitment to community developments.

The main objective of Islamic Banking is profit sharing. Thus, it is important to identify how far the Islamic banks have successfully achieved the objective of their existence. The recent formula has been constructed to examine the above mentioned situation.

Table 3.6.3 Mudarabah-Musharaka Ratios

	Islamic Bank of Thailand	Al-Amanah Islamic Bank
2003	0.391	0.305
2004	0.394	0.265
2005	0.447	0.234
2006	0.727	0.259
2007	0.782	0.145
2008	N/A	0.273
2009	N/A	N/A

Figure 3.6.3.1 Mudarabah and Musharaka Ratio

As aimed to find which bank has a higher commitment to Muslim community, from the above ratios we can easily conclude that the Islamic Bank of Thailand compared to the AAIIBP has a higher commitment to the local Muslim community.

However data is not available from 2008 and 2009 in the IBT's balance sheet. The higher ratio from the IBT is also explainable with her higher and still increasing numbers of branches, situated in South Thailand, where the Muslim population is higher in amount, however its counterpart, the AAIIBP only had 9 branches, include the head office in Manila, and only 3 branches, namely in the southern cities of Marawi, Cotabato and Jolo branches organized to adopt both the Islamic and Conventional banking system by the end of 2008.

3.7 Zakat Performance Ratio

Zakat (alms) is the name of what a believer returns out of his or her wealth to the neediest of Muslims for the sake of the Almighty Allah. It is called Zakat because the word Zakat is from Zakaa which means, to increase, purify and bless.

3.7.1. Who should pay Zakat

The obligation of Zakat is mandatory on every Muslim who possesses the minimum Nisaab, whether the person is man, woman, young, old sane or insane. Because the proof of Zakat in Al-Qur'an and Sunnah is general and does not exclude young or insane, Allah (SWT)⁵ stated that: "Of their goods take alms so that thou mightiest purify and sanctify them..." (Al-Qur'an, 9: 103)

⁵ When writing the name of God (Allah), Muslims often follow it with the abbreviation "SWT." These letters stand for the Arabic words "Subhanahu Wa Ta'ala," or "Glory to Him, the Exalted." Muslims use these or similar words to glorify God when mentioning His name.

Imam Ibn Hazim said that every Muslim young or old sane or insane needs to cleanse his or her wealth with Zakat because of generality of the evidence. Anas bin Malik reported that the Messenger of Allah (saws) said: *"Trade with the money of the orphan, lest it is eaten up by Zakat."* (At-Tabraani) In another Hadith `Amru bin Shuaib related from his grandfather that the Messenger of Allah said:

"Whoever is entrusted with money of an orphan should trade with it and should not leave it sitting to be used up by charity." (Tirmidhi)

The point of reference in these reports is that the Messenger (saws) urged the trustee on the estate of people who due to age or other reasons cannot manage their own financial affairs, to invest it in a business that will yield a return and make it grow until they are in a position to do so themselves. For, if proper investment is not made with an orphan's inheritance, it will be depleted by charity, thus leaving the orphan with little or nothing.

Allah (SWT) has prescribed the minimum amount that is obligatory for Zakat in different ranges of properties, and that minimum amount is known as nisaab. The reason for nisaab is to ensure that no one is forced to give Zakat out of what he or she does not have, and that no wealth goes without Zakat. Nisaab is also an insurance against the tyranny of the state to tax the poor and or the neediest as is the case in many countries. Nisaab is a reference point for the average Muslim who is not sure whether he possesses the minimum wealth on which Zakat is obligatory. The wealthy need not worry about the Nisaab. Zakat is obligatory on their entire wealth and must be paid out at the end of financial year that they set for their Zakat.

Many scholars are on the opinion that any business activity that brings any return to the entrepreneur or investor should be assessed for Zakat. If the activity has a prescribed nisaab, such as gold, silver or paper currency, that nisaab is applied for Zakat. But if the business has no declared nisaab, its nisaab is the nisaab of commerce, one reason being that most business activities are considered as commerce and because, in actual fact, it is not factitious business name, such as GM, Apple or GE that is taxed for Zakat, it is the individual investor. We do not tax co operations such IBM, Apple, GM or Rajihy Bank but the individual investors, share holders and owners of these corporations.

Indeed, there are enough rules in Zakat books to cover all types of business activity, be it cash or risk investment. If the business activity is analogous to commerce, it should be assessed the same rate as commerce. To subject the business to a different Zakat rate of 10%, which is the rate of farm products (10% zakat rate if irrigation does not need, if irrigation needed the zakat rate is only 5%) instead of its correct rate of 2.5%, the rate of commerce, is unfair and unjustified. Besides, there is no proof, even a weak one, to justify this unfair arbitrary taxation. The difference between 2.5% and 10% is high. The Zakat system is not like a state revenue collection, but Allah's (SWT) `Ebadah.⁶ However, if a business person decides to give more than 2.5% after deducting all the expenses including depreciation, Allah (SWT) will accept it from him. Zakat, as proposed by various authors (Shahul, 2000; Baydoun & Willett, 2000) should be one of the objectives of Islamic Accounting. Moreover, Zakat itself is one of the commandments in Islam. Therefore, Islamic

⁶ The meaning of "ibadah" in the Arabic language is obedience, submission, and humility. The "ibadah" in Islam means: The ultimate obedience, the ultimate submission and the ultimate humility to Allah (S.W.T.) along with the ultimate love for Him.

bank's performance should be based on the Zakat paid by the Bank to replace the conventional performance indicator which is earning per share (EPS). The wealth of the bank should be based on the net worth (net asset) rather than net profit that has been emphasized by conventional method. Therefore, if the bank net worth is higher, definitely it will pay high Zakat. However, to calculate the Zakat performance ratio, further analysis of the Islamic Bank of Thailand's collected and distributed zakat is needed.

Table 3.7.2.1 Zakat flow in the Islamic Bank of Thailand

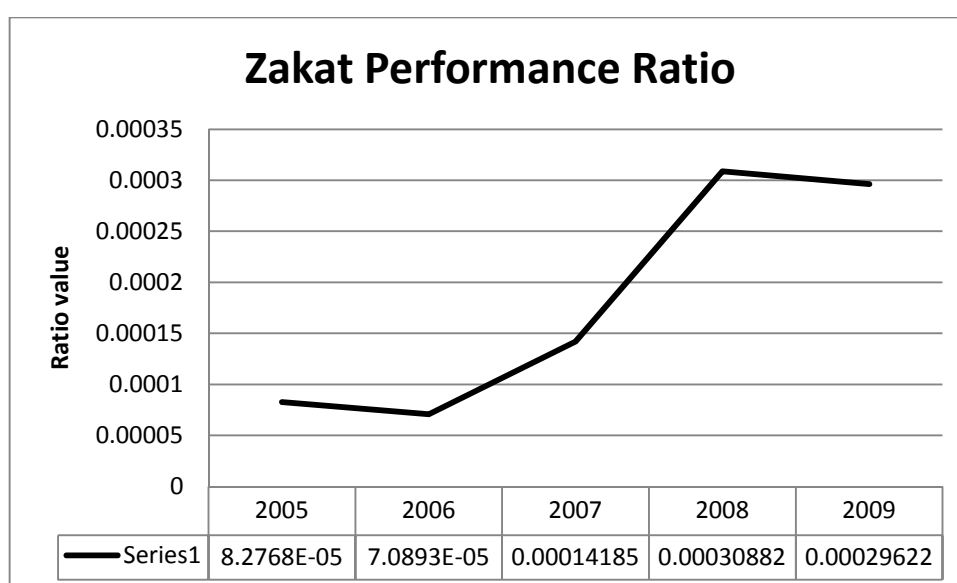
Year	Collected Zakat	Distributed Zakat
2005	506,681.00	-
2006	504,860.00	622,000.00
2007	675,445.00	450,000.00
2008	659,364.17	951,500.00
2009	577,510.89	739,000.00
2010	769,392.67	578,500.00
Total	3,693,253.73	3,341,000.00

The following formula has been proposed in the International Islamic University in Malaysia.

$$ZPR = \frac{\text{Zakat}}{\text{Net asset}}$$

Table 3.7.2 Zakat Performance Ratios

	Islamic Bank of Thailand Ratio Values	Al-Amanah Islamic Bank
2003	N/A	N/A
2004	N/A	N/A
2005	8.27E-05	N/A
2006	7.08E-05	N/A
2007	0.00014	N/A
2008	0.0003	N/A
2009	0.0003	N/A

Figure 3.7.2 Zakat Performance Ratio of the IBT

The Islamic Bank of Thailand started to collect zakat in 2005, and the distribution of the zakat started in 2006. As observable on table 3.7.2, the distributed zakat is much lower than the net asset of the bank. The very low performance ratios

resulted from this big difference. However as shown on figure 3.7.2, the Islamic Bank of Thailand improved on its zakat performance over time. This does not mean that the bank distributed bigger amount of zakat, but the net worth of the company become stagnant in the last three calculated year, with a slightly increase in 2009, what resulted the downward slope on the chart too.

Without a comprehensive benchmark, it is difficult to state whether the Islamic Bank of Thailand underperformed the zakat payments. For whom the zakat had been distributed over time, the IBT's zakat performance was satisfying. Scholarships, relief donation for flood and fire victims and also to the poor are a good effort from the bank. However, as a comparison to its net worth, the Islamic Bank of Thailand should distribute higher amount of zakat to the Muslim society of Thailand.

3.8 Conclusion

The aim of this part was to identify whether the Islamic Bank of Thailand operates efficiently or not, by using the financial ratio analysis method. The first difficulty arises from the fact that the Islamic Bank of Thailand is a unique financial institution in the country. There are many local and international conventional banks operating in Thailand, but using them as a comparison will be not satisfying because of the different business structure. The solution for this problem was to find an Islamic bank, which business conduct structured according to the Islamic law. The option to use another Islamic bank from the Middle East or Malaysia, where is a high frequency of these banks are also avoided in this research, for the reason of different business and economic environment. Since in Muslim or majority Muslim countries, an Islamic bank simple suffer from disadvantages. The task to find an Islamic bank from a Muslim minority country is solved by the Al-Amanah Islamic Investment Bank of the Philippines. Hence, both bank and country share many similarities, which enable the effective benchmarking between the banks. However, difficulties rose from the lack of data in some cases, mainly from the IBT's Philippine counterpart. The AAIIBP changed ownership in 2008 which left the 2009 financial data unprocessed as late as 2010 October. On the other hand, from the available data, there are 18 financial ratios has been calculated and 15 financial ratio compared between the IBT and AAIIBP. The results of each compared financial ratio showed better performance for the Islamic Bank of Thailand.

CHAPTER IV

4.1 DATA ENVELOPMENT ANALYSIS (DEA)

Studying banking efficiency can be done in two ways: by use of the traditional financial ratios, or using frontier analysis methods such as data envelopment analysis (DEA) or stochastic frontier analysis (SFA). My choice is go for the DEA analysis. Using both financial ratio and DEA analysis could raise the question, why. Doing a complex analysis with a single firm, and consider the shortage of data, it may more beneficial considering two different kind of analysis. In the first part, as proposed earlier, I will use financial ratios which are easy to calculate and interpret, especially for shareholders who prefer simple ratios over complex econometric outputs. However, explaining single firm efficiency by calculating financial ratios from time to time isn't a simple task, that's why we need the second type of analysis, which with a little customization will be able to explain changes during period to period. Also using data envelopment analysis hopefully will find the holes, if they exist, in the bank decision making unit. Finding and understanding the mistakes or bad decisions of the past will improve the performance of the future decision making.

Banks are complex organizations, however, which produce an array of outputs from a range of inputs. One ratio cannot capture the complete picture of performance of such an organization over the breadth of its activities, and there is no criterion for selecting a ratio that is appropriate for all interested parties (Ho and Zhu, 2004). Moreover, financial ratios assume that banks have an objective of optimization (for example, cost minimization, profit maximization, or revenue maximization) and this

is likely to be inappropriate in the context of Islamic banking where these are not the most pressing objectives (Abdul-Majid, 2008).

There are a few alternative approaches to measuring efficiency without the previously mentioned assumptions. One is the distance function approach, which has an advantage that allows for both multiple inputs and outputs. The distance function can be estimated using parametric and non-parametric methods. Both approaches estimate efficiency are based on a multi-dimensional examination of the production relationship. The parametric method, such as SFA distance function assumes a functional form for the distance function, and distributions for the efficiencies and the stochastic errors. Since the consequences of these assumptions, parameters of the function can be estimated and their statistically significant; additional information regarding input elasticity's and economies of scale and scope can be derived. However the disadvantage is that the assumptions which fortify this information may be incorrect and the distance function may suffer from misspecification problems.

On the other hand the non-parametric method, namely Data Envelopment Analysis (DEA), contains no underlying assumptions and hence therefore no problems of misspecification. More importantly, this technique provides considerable information regarding targets for an inefficient unit to become efficient. Additionally, by enveloping the data, the DEA distance function allows each unit to be different, which means, DEA allows banks to have its own objectives. The Islamic Bank of Thailand, whose main objectives are unlikely to be cost minimization or profit maximization, will not be penalized by using DEA method for the efficiency analysis.

4.2 INTRODUCTION OF THE DEA

DEA is a mathematical programming methodology that can be applied to assess the efficiency of a variety of institutions using a variety of input and output data. Advantage of the model is that it uses actual sample data to derive the efficiency frontier against which each unit in the sample is evaluated with no a priori information regarding which inputs and outputs are most important in the evaluation procedure. Methodologically, the characteristics of DEA can be described through the original model developed by (Charnes, Cooper and Rhodes, 1978). Consider N units (each is called a Decision Making Unit, DMU) which convert I inputs into J outputs, where I can be larger, equal or smaller than J . To measure the efficiency of this converting process for a DMU, Charnes proposed the use of the maximum of a ratio of weighted outputs to weighted inputs for that unit, subject to the condition that the similar ratios for all other DMUs be less than or equal to one. That is,

$$\text{Max } e^\theta = \frac{\sum_{j=1}^J u_j^n y_j^0}{\sum_{i=1}^I v_i^0 x_i^0}$$

Subject to:

$$\frac{\sum_{j=1}^J u_j^0 y_j^n}{\sum_{i=1}^I v_i^0 x_i^n} \leq 1; \quad n = 1, \dots, N,$$

$$v_i^0, u_j^0 \geq 0; \quad i = 1, \dots, I, \quad j = 1, \dots, J,$$

Where, y_j^n , x_i^n are positive known outputs and inputs of the n th DMU and v_i^0 , u_j^0 are the variable weights to be determined by solving problem (1). The DMU being measured is indicated by the index 0, which is referred to as the base DMU. The maximum of the objective function e^0 given by problem (1) is the DEA efficiency score assigned to DMU⁰. Since every DMU can be DMU⁰, this optimization problem is well-defined for every DMU. If the efficiency score $e^0 = 1$, DMU⁰ satisfies the necessary condition to be DEA efficient; otherwise, it is DEA inefficient. It is difficult to solve problem (1) as stated, because the objective function is nonlinear and fractional. Charnes et al., however, transformed the above nonlinear programming problem into a linear one as follows,

$$\text{Max } h^0 = \sum_{j=1}^J u_j^0 y_j^0$$

Subject to:

$$\sum_{i=1}^I v_i^0 x_i^0 = 1$$

$$\sum_{j=1}^J u_j^0 y_j^n - \sum_{i=1}^I v_i^0 x_i^n \leq \varepsilon; \quad n = 1, \dots, N,$$

$$v_i^0 \geq \varepsilon, u_j^0 \geq \varepsilon; \quad i = 1, \dots, I; \quad j = 1, \dots, J,$$

The variables defined in problem (2) are the same as those defined in problem (1). An arbitrarily small positive number, ε , is introduced in problem (2) to ensure that

all of the known inputs and outputs have positive weight values and that the optimal objective function of the dual problem to problem (2) is not affected by the values assigned to the dual slack variables in computing the DEA efficiency score for each DMU. The condition $h^0 = 1$ ensures that the base DMU⁰ is DEA efficient; otherwise it is DEA inefficient, with respect to all other DMUs in the test. A complete DEA model involves the solution of N such problems, each for a base DMU, yielding N different (v_i^n, u_j^n) weight sets. In each program, the constraints are held constant while the ratio to be maximized is changed. Finally, these DEA problems will be solved by using DEA software.

4.3 METHODOLOGY

In order to construct the DEA model first I need to identify the input and output factors. Either if the production or intermediate approach is taken when conducting an analysis on the banking efficiency. In the production approach the bank is treated as a firm that provides services, such as loans, through the use of capital and labor inputs. Output is generally represented by the number of deposit accounts or transactions and inputs are defined as a number of labor and capital expenditures on fixed assets. In the intermediary approach, banks perform an intermediary role between borrowers and depositors, hence accept deposits and other funds in order to provide loans and alternative investments. The production approach is more appropriate if we measure the branch level efficiency, but the intermediary approach more commonly used in previous articles for bank level analysis, hence my thesis is won't be an exception.

My choice of outputs regarding to previous literatures are the following.

4.3.1 Total Loans

4.3.2 Other Earning Assets

The inputs are the follows,

4.3.3 Deposit and Short Term Funding

4.3.4 Fixed Assets (Capital)

4.3.5 General and Administration Expenses

4.3.6 Equity

4.3.7 Short term source of funds

The choice of outputs introduced before in the study by (Abdul-Majid 2008) / (Casu and Girardone 2004). The presented inputs appeared in previous studies like, (Drake and Hall 2003) / (Kamaruddin 2008)

Output side of the Data Envelopment Analysis

Considering the output side of the bank is by common sense, investigate the outcome of the banks activity. Apart from the fact, that banks are complex financial institutions with numerous operating activities, we can differentiate inputs and outputs just as simple as we could do with the baker whose input is the grain and wheat and the output is the bread. Banks output however could be broader then this simple example, so for defining the most appropriate form, first to consider previously used output factors. Previously used here has an important role, considering that the

calculation won't be misleading. Hence, all the input and output factors had been previously used in other data envelopment analysis for Islamic banks, however not in the same proportion as in this work.

4.3.1 Total Loans

This item is very straightforward and easily observable from the bank's balance sheet, simply under the definition of total loans.

4.3.2 Other earning assets

These are a more complex set of data because, could vary from period to period, by appear more different earning assets on the balance sheet. Hence, since this is an aggregate calculation, worry from new types of earning assets unnecessary, we just simply add together the all other earning asset, measured in baht, and use it as a total number of other earning assets in our data envelopment analysis. The definition of earning assets includes any assets that could generate income without the need of additional work or investment on the part of the bank. This includes things like interest bearing accounts, securities such as stocks and bonds, and anything that pays dividends. Also after the initial outlay is over, the asset will begin to return funds immediately, providing a steady and secured source of income. On the other hand, there are assets which need more additional work or cost, such as real estate. Real estate needs maintenance cost and further management but in this work considered as another earning asset.

Input side of the Data Envelopment Analysis.

As we discussed in the previous paragraph, the DEA analysis will consider two different output in the case of the IBT. However, as a complex financial institution, or even mention the previous bakery example, similar amount of inputs will be insufficient and not wide enough for our calculation, so one must consider finding more than two possible inputs. In previous studies we can find commonly inputs such as equity and capital or fixed assets. Those are consider to be a basic inputs for any kind of analysis, however adding extra inputs, which could really change an efficiency analysis outcome is more than necessary. Those extra inputs in this work will be the general and administration expenses, or as called in the first part, operational expenses, also deposit and short term funding, and the source of short term funds.

4.3.3 Deposit and Short Term Funding

One of the basic and most important banking input is the deposits. The main idea of banking as we knows it, based on the customers demand of storing they valuables in a safe place, depositing their gold and receiving easily tradable and moveable fiat money. However in modern banking this is a long time forgotten method. Nowadays, depositors main concern isn't always the store of value in the bank, but also earn profit on their savings, sometimes however this profit just enough to cover the depreciation of the money resulted from the inflation. Yet, many scholar previously identified deposit and the main source of funds for a financial institution.

On the other hand, short term funding, enjoy a new and very important role in modern finance which made me include in this input mix. If we want to understand

the importance of the short term funds, we must think about liquidity. As previously discussed, liquidity is a very important risk measurement for banks. In recent days liquidity transformation takes on a different form from the foreseen in the classical Bryant-Diamond-Dybvig set-up. A major change is to that study is that banks dramatically lowered the fraction of their liquid assets to the total assets. In a 2008 study, Goodhart observed that in the 1950s liquid assets was around 30 percent of the bank's total assets (Great Britain), however currently this ratio is about 1 percent of total liabilities. Also, since short-term funding is more cheaper than long-term funding, banks tend to increase the fraction of their long-term illiquid assets with short-term borrowing on the wholesale market, as a result, banks have replaced a relatively stable source of short term funding such as demand deposits with the short-term interest-sensitive wholesale funding and rolling over debt (Berger, Molyneux, and Wilson, Nd., The Oxford Handbook of Banking).

4.3.4 Fixed Assets (Capital)

Include the fixed assets into our DEA analysis as an input is very crucial for getting a reliable efficiency points. As the earliest economists stated in their theories, capital and labor are the two most important and basic input in any firm's production. This early neoclassical theory is still stands nowadays, with, of course many adjustments and new factors, according to industries and markets. Also fixed assets considered to be a base of many efficiency analyses in banking, that's why my study must include as an input factor.

4.3.5 General and Administration Expenses

As this study aimed to find mistakes or advantages in management decision making, general and administration expenses is a good way to determine either if the banks expenses have been controlled and supervised, as suspected in the IBT, and as we seen in the financial ratio analysis, went wrong with the AAIIBP. Hence, other studies frequently use general and administration expenses as an input factor in banks DEA analysis.

4.3.6 Equity

Equity used previously to determine profitability in the financial ratio analysis recently in this work. In DEA analysis equity is much as important as in the financial analysis, but as input factor of the banks efficiency. Shareholders' equity will be considered yearly in this input data

4.3.7 Short term source of funds

As the attempt made in explaining the importance of short term funding in 2.2.3, here we must examine the importance of identifying the sources of the short term funds.

4.4 THE MODEL AND WEIGHTING

In the introductory part we have seen the basic mathematical model of the DEA. For the analysis of the Islamic Bank of Thailand, I use that model as the base. Hence, there is another available model for calculating efficiency in DEA. Window analysis mentioned in previous researches as a possible way of evaluates efficiency of the same decision making unit (DMU) from time to time. However, the last part of this research which is contain the modeling, I find it more beneficial to use the traditional method instead of the window analysis. For setting up or models we need to identify the decision making units, this is simple since we set them as the whole bank by each year, that's why we have 7 decision making units. Assuming there are seven DMU (n=7) each with m inputs (m=1, 2, 3, and 4) and s outputs (s=1, and 2) the relative efficiency score of the test DMUp is obtained by solving the following model, this model proposed by (Charnes, 1978) and considered the base DEA model.

$$\sum_{k=1}^s \lambda_k y_{kp} \Big/ \sum_{j=1}^m \gamma_j x_{jp}$$

This is a Fractional equation, subject to;

$$\left| \sum_{k=1}^t \lambda_k y_{kp} \Big/ \sum_{j=1}^m \gamma_j x_{ji} \right| \leq 1$$

Where; k = 1 to s, j=1 to m, λ_k = weight given to output k, γ_j =weight given to input j. x_{ji} =amount of input j utilized by DMU i, where the, i=1 to n, x_{jk} = amount of output k produced by DMU i.

Since this analysis will use linear method, a change has to be done on the equation.

Rewriting this fractional equation into liner programming we get the follows;

$$\max \sum_{k=1}^s \lambda_k \gamma_{kp}$$

This linear equation is subject to;

$$\sum_{k=1}^s \gamma_j x_{jp} = 1$$

$$\sum_{k=1}^s \lambda_k \gamma_{ki} - \sum_{j=1}^m \gamma_j x_{ji} = 0$$

$$\gamma_k, \lambda_k \geq 0$$

Another problem we facing here is to identify the weights (λ and γ) for each input and output (x and y). Weighting is necessary in almost any kind of efficiency analysis. The randomness of the data, or specific problems always could arise, which can make the efficiency point inaccurate. One problem already arises from the set of input data. The total other earning assets input contains three different data. One is the interbank and money market items on the liabilities side of the balance sheet, also the other liabilities and premises and equipments. However, the interbank and money market items does not appear in the balance sheet from 2003 until 2006. This example is a good way to see the importance of the weighting. Other problems arising in this case the linearity of the equation. This linear equation allows unrestricted weights flexibility in determining the DMU's efficiency points. This leads to inappropriate

high or low efficiency points. Weight restrictions allow for the integration of managerial performance in terms of relative importance levels of various inputs and outputs.

The way we do weighting is basically set up the level of importance of each input and outputs. Consider lower and higher priorities among inputs and outputs. Priority difference can come from the bank management decision makings, the followed trend by the bank, or the accuracy and importance of the data observed in the set. As mentioned, some input and output data set comes from more different balance sheet items, and some of the item might be missing over time, or consider more or less details due to the different way of accounting. Display the importance of the weighting is simply can be done by one equation.

$$Efficiency = \frac{\textit{weighted outputs}}{\textit{weighted inputs}}$$

Finding this equation make the whole efficiency analysis looks much more understandable and follow able for other then academic people, but simply presentable for shareholders, customers.

Denominations of the weighting in this work will use two Greek letters. First is lambda (λ) weight given to outputs, and the gamma (γ) weight given to input. For example;

If output 1 (y_1) is at least twice as important as output 2(y_2), then we get this weight relation; $\lambda_1 \geq 2\lambda_2$.

As we identified the four inputs, x_1, x_2, x_3, x_4 , and the two outputs, y_1, y_2 , and the weights for each inputs and outputs we can rewrite the equation as follows;

For the year of 2003, the DEA linear program efficiency analysis.

$$\max \sum_{k=1,2}^s \lambda_k y_{kp}$$

Subject to;

$$\sum_{j=1,2,3,4}^m \gamma_j x_{jp}$$

$$\left| \sum_{k=1,2}^s \lambda_k y_{ki} - \sum_{j=1,2,3,4}^m \gamma_j x_{ji} \right| \leq 0$$

The following years from 2004 till 2009 have the same equation settings.

4.5 BENCHMARKING

The solution for the efficiency change explanation. In this part I explain the unique way of benchmarking through a yearly data envelopment analysis. This benchmarking and analysis will take four steps every each investigated period. Each period will contain the data for input and output, then using the DEA analysis; we will have efficiency point results. Those results will be the benchmarks for the next year's analysis, and also the benchmark for the modeling.

In the benchmarking process, for every inefficient decision unit there is a corresponding efficient one, identified by the DEA. Those efficient DMU's can be utilized as benchmarks for improvement. Benchmarks find by using the following model, proposed by (Doyle and Green, 1994) in their work the Efficiency and cross-efficiency in DEA.

Minimize

$$\sum_{i=1}^n \lambda_i x_{ji} - \theta x_{jp} = 0$$

$$\sum_{i=1}^n \lambda_i y_{ki} - y_{kp} = 0$$

$$\lambda \geq 0$$

In this presented equation the theta (θ) stands for the efficiency points. Based on this equation the test DMU is inefficient if the combined DMU (linear combination of units in the set) can be identified as the one which utilizes less input than the test

DMU while having at least the same output level. The units involved in the construction of the composite DMU can be utilized as benchmarks for improving the inefficient decision unit, in our case the inefficient year. DEA also let us computing the necessary improvements required in the inefficient unit's inputs and outputs to make it efficient. However, DEA primarily is an analytical tool and does not prescribe any restructuring strategies to make inefficient units, years efficient. Those improvement strategies should be studied and implemented by the banks managers in the way of understanding the operations of the efficient units.

Even though benchmarking in DEA allows for the identification of targets for improvements, it has definite limitations. The complexity and difficulty suggested in the literature regarding this process is that an inefficient DMU and its benchmarks may not be essentially similar in their operating practices. This is mainly due to the fact that the composite DMU that dominates the inefficient DMU does not exist in reality. Same as efficient year not always dominate the inefficient year, but in real life could has more effect on the inefficient year, then in the DEA modeling. To overtake these problems, previously researchers utilized performance-based clustering methods for identifying more appropriate benchmarks (Doyle and Green, 1994) and (Talluri and Sarkis, 1997). These methods collect naturally similar DMUs into groups, and the best performer in a particular cluster is utilized as a benchmark by other DMUs in the same cluster. This is clearly inappropriate for this analysis, since the DMU's efficiency changing over time. Technical and growth improvements take place year by year, so a more appropriate method such as the window analysis had been chosen, instead of clustering.

Window analysis is a moving average pattern of analysis introduced by (Charles, 1985). The main principle of this analysis is that the same decision making unit in each period treated as if it's a different DMU. The key is that the performance of the DMU is compared to its performance in the other period, in our case, in the next year.

Progressing in this benchmarking method, we identify steps followed by every calculated year. The steps are the follows;

Step 1 Data collection, performance evaluation

Step 1 process for every each year will contain the following steps. First collect and organize every input and output data from the bank's balance sheet. However, there is a possibility that not every each year have the same data in the balance sheet of the bank, for example because of the different method or explanation of the accounting data. In any case where this occur, we have to make sure the dataset has the same identity of the previous year's data, if this is not possible, we should reconsider removal of the according un-matching dataset.

Period 1. Opening till first Year

The earliest available dataset from the Islamic Bank of Thailand is from 2002. However this data set is not complete, since the early year of the banks existence. Whether the calculation will be efficient enough, it will depend on the available data for this year. In case our data is good enough to calculate an accurate efficiency point for 2002, then it will be the first Considering the business plan executed by the bank's decision making unit (DMU).

Step 2 Data collection, performance evaluation

After all the available data collected from the year 2003, the inputs of the data follow to the DEA software. From the calculation we will get the efficiency point of 2003, what we set as the decision making unit in 2003. This information not just important for the yearly comparison but also to the last part of the DEA which is the modeling.

Period 2 first year to end of second year

Repeating the same process as mentioned in step 1, collecting the data about the performance. Evaluate the efficiency of the DMU, or bank, in step 1 and in step 2.

Step 3 Efficiency Analysis

From Period 1 to Period 2

Using the DEA software, I can calculate the efficiency from each period performance points, and also the efficiency between each period, considering the plan executed by the DMU. Also consider the political and economic situation for the given period. Taking in account the technological changes, which could affects improvements.

Step 4 Modeling

By Using the original data, change the plan executed by the bank. Focusing on the input or output orientation. However consider the main policy changes and business decisions, documented in the given period. Finally try to calculate better efficiency points with the DEA software. Regardless if the additional calculation

resulting with a better efficiency point or not, explain the changes measured between periods. Hence, in case the modeling resulted with a higher efficiency point, there is a straight-forward explanation what is the reason for this.

Using this unique method from period to period, we will get a big picture about the Islamic Bank of Thailand's performance and efficiency year by year, and will be able to explain changes from period to period, which could be a very useful information for corporate planning department for the future planning, and understand the mistakes of the past.

4.6 Yearly Analysis 2003

The first observed period in this analysis is 2003. The Islamic Bank of Thailand started to its operation in 2003. In 2003 the following input and output data's observed. The deposit and short term funds, which considered being the first input in this set was ₪511.7 million. The second input in this year is the Capital which is ₪646.1 million. The third input data is the General and administration expenses. This value is ₪51 million for the year 2003, which reflects a quiet low spending of the bank. The Equity, which is the fourth calculated input, was ₪646.1 million. The output figures are the follows; Total loans reached the ₪517.1 million end of the year when the other earning assets accounted for ₪43.1 million.

As we can observe from the table, the year 2003 named the decision making unit for the first observed year (DMU1).

Table 4.6 Decision Making Unit 1

Year	Input 1	Input 2	Input 3	Input 4		Output 1	Output 2
2003	DaSTF	Capital	G&Aexp	Equity		Tot. Loan	OEAss.
DMU1	511.7M	696.9M	51M	646.1M		517.1M	43.1M

After setting up the model, we identify the model orientation, whether is input or output oriented calculation appropriate. Since the non-discretionally inputs overweight the discretionally ones, which means the inputs mainly beyond managerial control, the appropriate method is the input orientation with the variable returns to scale, since we have full proportionality between all inputs and outputs. The calculated efficiency point for DMU1 in the year 2003 is 0.3, (0.3020597). The bank would consider being fully efficient if the points reach up to 1.

4.7 Yearly Analysis 2004

After have been done the analysis for the first decision making unit, or in other words for the year 2003, we can see the less efficient operation for the bank, but without any comparison yet. Also the low efficiency points could originate from the early year of the bank, as previously mentioned before. In the year 2004, the Islamic Bank of Thailand accounted a net loss of 90.47 million baht, a 49.92 million baht increase since 2003. This loss mainly incurred from higher operation cost. However the revenues from loans of the bank increased, because of the larger number of Muslim costumers moved their funds from conventional banks into the Islamic Bank

of Thailand. Also operating income increased almost by 5 million baht. In addition, the major source of funds of the bank is from deposits, 1.65 billion baht. After doing the year 2004 efficiency analysis, we can have a clearer picture that if the low points in 2003 just draw from the early year or this is a low efficient trend in the bank's operation. The observed inputs and the outputs are the same as in the 2003 evaluation.

Table 4.7 Decision Making Unit 2

Year	Input 1	Input 2	Input 3	Input 4		Output 1	Output 2
2004	DaSTF	Capital	G&Aexp.	Equity		Tot. Loan	OEAssets
DMU2	1654.5M	696.9M	100.2M	555.7M		1701.2M	86.4M

Using the DEA envelopment model for this dataset, the calculated efficiency score for the second decision making unit is 0.6, (0.6149295). This over 50% increase from the first period is clearly originated from the increased deposit and short term funds in the input side. As seen, this item increased over 300 percent from the first observed period. This change had the strongest effect on the increased efficiency point. However, on the input side, we can observe a 50 million bath increase in general and administration expenses, which lower the increase in efficiency. From the doubled increase in average on the input side affect the output side by almost the same proportion, where the total loans increased from 517 million baht to an impressive 1.7 billion baht. If this trend of increases will continue over time, we have to examine the decision making unit three, the next following year, which is 2005.

Before going to the next year, a short polio-economic explanation for the first two year might have been necessary. After the 1997 economic crisis, when Thailand

finally had to un-peg the bath against the dollar, when the country's economy suffered from foreign investment speculators, when finally the International Monetary Fund help needed for stabilize the lose in the economy, after all of these events, Thailand experienced a high growth in the early 2000's. This growth mainly originated from the increased amount of export; however the new introduced dual track politics by the former Prime Minister Thaksin Shinawatra, where the increased domestic activity making the country rely less on foreign trade also helped the growth tremendously. In 2003, our first decision making unit, the Thai economy experienced a 7.1 percent increase and by the year 2004 this growth peaked on the respectable 6.3 percent. Considering this economic nature, some can assume, the year 2002 was a perfect time to start business in Thailand. However, introducing a fairly new type of financial institutions in a country where the minor Muslim population is segregated in some respect and the majority live in a few southern provinces, mainly work in the agricultural industry and received lower education, the new Islamic bank might not facing to the easiness in this period. In addition, an ethnic separatist insurgency took place in the southernmost part of Thailand in 2004. This Muslim insurgency centered in the Malay Pattani region. This insurgency could explain efficiency changes in the Islamic Bank of Thailand, since Muslims in the region might raises confidence in a Muslim financial institution over the Buddhist Thai counterparts. Notably, the relationship between the Islamic Bank of Thailand and other Thai banks are so close, especially with the SCB and Krung Thai Bank (both bank has 5.75% ownership in IBT) and other investor banks that separation between those institutions are much lower, then as expected or desired from the public.

4.8 Yearly Analysis 2005

After done the first two decision making unit in this evaluation, we can already draw a picture about the early years of the Islamic Bank of Thailand. To expand our view of this picture, and analyze further trends of the bank efficiency evolution, we have to continue the yearly analysis with the year 2005, the third decision making unit. The most important event of the year was the merge with the Krung Thai Bank Public Limited's Shariah Banking Service on November 9. The merge went on by the Ministry of Finance. With this act, the bank can expand its financial services and banking network, plus the additionally branches.

As done with the first two decisions making unit, the input and output items are the same for 2005. The analyzed data are the follows;

Table 4.8 Decision Making Unit 3

Year	Input 1	Input 2	Input 3	Input 4		Output 1	Output 2
2005	DaSTF	Capital	G&Aexp.	Equity		Tot. Loan	OEAssets
DMU3	4644.3M	696.6M	231.8M	6122 M		5663.2M	301.9M

First we can observe from this table is the tremendous amount of changes in every set of data. There is no data in 2005 which increased less than 100 percent comparing to the year 2004. From this change, we can draw the first conclusion for this period, which is assuming the non stagnant operation of the bank. The increase from the first period over to the second period is consider to be natural, hence, political and economic situations might led to a stagnancy in the third period, such as

the mentioned insurgency, increasing political instability, or just to mention the 2004 boxing day tsunami in southern Thailand. In our case of course we can say by looking the data, is not the situation. The Islamic Bank of Thailand went through an even more changes through the second to third period then it happened in the first period. The question of course arises from this big change. Did the efficiency increased by the same proportion? We have to do the analysis to find out the answer for this crucial question. The result of the calculation is for the efficiency of DMU 3 is; 0.5, (0.5203877). This number is smaller than the DMU 2 efficiency score. The difference of 0.08 is only a slightly smaller than in the previous period, but since the big changes in the calculated data, this slightly backward change needs to be investigated, especially when we consider that the bank is in her very delicate period of existence. Early years of not just banks but any firm, needs more attention on decision making and policy implications, then a already long term operating firm. The first years of corporate governance and evolution plays same important role in the firm's future operation as a child's first years of rising. Important and can have un-reversible effects in the future. In 2005, Islamic Bank of Thailand recorded a net loss of 158.08 million baht, an increase of 67.61 million from 2004. The Islamic Bank of Thailand had an income from financing and leasing of 107.98 million baht, increased from 2004 by 87.29 million and other operation income of 22.60 million, increased from 2004 by 16.93 million, while the operating expenses and financial expenses in 2005 total of 247.25 million baht increased from 2004 by 146.12 million.

4.9 Yearly Analysis 2006

The year 2006 will be the fourth measured period in this part. After the first three DMU, namely 2003, 2004 and 2005, there is developing but still small picture about the bank's efficiency. In 2006, the same method and the same set of data are used as before. The input and output data's are the follows;

Table 4.9 Decision Making Unit 4

Year	Input 1	Input 2	Input 3	Input 4		Output 1	Output 2
2006	DaSTF	Capital	G&Aexp.	Equity		Tot. Loan	OEAssets
DMU4	8214.8M	707.4M	442.6M	8774M		8607.9M	588.4M

As expected from the previous year's trend, both input and output data's increased in a high proportion from 2005 to 2006. This change clearly shows that the bank not just to go through different economic and business periods, but more importantly the bank is growing. This conclusion could be drawn after the first two and three measured period, but it might have been too early. The growth easily can be measured from the increasing amount of inputs and outputs. Most notably increase went through in the input side; especially the deposits and short term funds sloped upwards tremendously, almost by 100 percent. From the growth of general and administration expenses we can conclude that the bank also increased its physical size, mention here the more employees and operating branches. The output side increase in the same proportion make us believe that the efficiency will have the same or similar trend as in the year before, but to draw further conclusion, the DEA

efficiency calculation must be done. The efficiency point for the fourth DMU, the year 2006 is: 0.5, (0.5196824).

In comparison to 2005, this is a decrease. However, there is no need to conclude that the bank started a decreasing trend in efficiency, even though, the last two decision making unit, 2005 and 2006 showing decrease to the previous year. Examine the data side of this year's analysis; we can see the growth of the bank, in every input and out column. With this kind of high proportional growth yearly, a slightly decrease in efficiency aren't something the bank has to worry about. Hence, not in the short run. Continuous decrease in efficiency in the long run could be a barrier in further growth.

In economic and political aspects, 2006 was a very eventful year. As will further discussed in the next year's analysis, Thailand went through a political unrest, a military coup, a civil unrest in the southern part of Thailand, which considered to be the main market area for the bank, also rising oil price and interest rates affected the situation in Thailand. Surprisingly, after these events, the Thai economy still maintained and even increased its growth rate from 4.5 percent to 5 percent in 2006. As mentioned, the bank expanded during this year, even though the bad situation. Over 2006, many upgrades went through in the Islamic Bank of Thailand. Upgrades like the information technology system for be able to handle the increasing number of customers and transactions. Also new financial products were created and existing strategies re-adjusted for the needs of the costumers in every religious group, not just focusing on Muslims. Housing products offered by the bank tends to be popular amongst non-Muslim customers, for example, because of the fixed installment rates

make the cost planning easier. Another change in the banks operation is the moved head office from the UM tower to Q house in Asoke. The new headquarters is more accessible for costumers.

In overall, the Islamic Bank of Thailand accounted a net loss of 269.85 million baht in 2006. This loss is 111.76 million higher than in 2005. The net loss per share is also higher than in 2005, by 1.58. The reasons of this loss are the record high expenses of the bank due to its IT system upgrade and the recruitment of new staff. Hence, the net income of the bank increased by 171.93 million baht and an additional 127.41 million baht other operating income accounted as 279.91 million of total net income. However the expansion of staff, products and technology system brings confidence and higher expectations in efficiency and profit as well.

4.10 Yearly Analysis 2007

After two period of declining efficiency but strong, stable growth, the 2007 year's efficiency analysis will give answers for two important questions. One is that if the bank can maintain the ever since strong growth in the respect of inputs and outputs. The second is that if the bank able to maintain or increase her efficiency with the growth or an increase in the bank size will result a lower efficiency. The growth of the year is observable from the input and output table presented below;

Table 4.10 Decision Making Unit 5

Year	Input 1	Input 2	Input 3	Input 4		Output 1	Output 2
2007	DaSTF	Capital	G&Aexp.	Equity		Tot. Loan	OEAssets
DMU5	12859.2	3123M	490.2M	3172.5		13613	672.8M

First time in the bank's history we can observe a decrease in the input side. The input 4, equity decreased from 8773.8 million baht to 3172.5 million baht to 2007. On the other hand, the remaining items on the input side increased. Most notably the bank's capital increased from 707.4 million to 3123 million baht in one year. Deposits and short term funds are still increasing, which reflects confidence for the bank. One item which has been ignored in this study needs some attention this time, namely the general and administration expenses. Since the first period of the analysis, the bank's general and administration expenses doubled from year to year. This could originate from the increasing size of the bank, but also pull down efficiency in a way. In this year, first time since 2003, the expenses not just did not doubled but only increased slightly, almost with an irrelevant small amount comparing to 2006. In the next year's analysis this number will be even decreasing. The output side of the table also shows a steady increase in both outputs. As usual, total loans increased proportionally bigger than the other earning assets. In order to see clearer about this year, we have to consider the efficiency score of the year, which is; 0.7, (0.7458117).

However, the Islamic Bank of Thailand suffered a net loss of 286.18 million baht, or in other words, an increase only by 16.34 million baht from 2006.

Expectations were higher, just by comparing the different efficiency points between these two periods.

This efficiency score is the highest measured since the first observed period. Notably, the bank had a three straight year decline in efficiency. As discussed before, the increasing size of the bank extinguished concerns about the slightly declining efficiency in the short run, but in long run, this effect could be harmful for the bank's operation. The year 2007 could be considered a milestone, since the first time increase since the size growth of the bank, which already rise a question, why in this year. For be able to answer, we have to consider economic, political and corporate governance factors.

In outlook for the Thai economy in 2007, we can conclude that the economy continued to expand, most of this growth driven by the export. However, domestic consumption and investments reportedly slowed down. This slow down is a comparison from the previous year. Hence, in comparison to 2006, on the supply side the farm production was expanding at a declining rate, which means a lower income for farmers. On the industrial side, the agricultural production remained high, mostly the production for export. Tourism industry accounted a good year. The current account surplus and international reserves were high while inflation was lower than in 2006. In overall the Thai economy experienced a quiet stable economic growth after the political turmoil in 2006. Political situation also improved after the 2007 general election in December, and forecasted that businesses will start to reinvest in 2008. The reasons of changes in the financial statement of the Islamic Bank of Thailand, according to her auditory report were the follows. Assets of the bank have showed an

over 8 billion baht increase from the end of 2006. This increase largely due to the expansion of the bank's lending activity. The included cash in the assets were 264.65 million baht, interbank and money market items reached 1.4 billion baht, net investment was 3.5 billion baht, net loans and accrued incomes totaling 10.9 billion baht, land, buildings and equipment was 327 million baht and other assets totaling 359 million baht. By the end of the year 2007, the bank invested 3.5 billion baht in securities, which is 20.75 percent of its total assets. Over 90 percent of this investment (90.54%) invested in short-term treasury bonds to manage the bank's liquidity. In the end of the year net loans and accrued incomes was 10.878 billion baht which is a 4 billion baht higher than in 2006. The high deposit and short term funds happened due largely the increasing customer interest to deposit their money in the bank. The increase was over 4.5 billion baht. The sources of the funds included the deposits, 12.9 billion baht, shareholders equity 3.17 billion baht, and from other sources 650 million baht. Most of the funds used for lending, all about 11 billion baht, and 3.15 billion were invested in debt instruments, another 329 million invested in equities. The IBT deposited 284 million baht in the Bank of Thailand and another banks. Also the bank extended 1.187 billion baht as short-term loans to commercial banks. Some part of the income were hold in cash for operation purpose, this amount was 264 million baht, while 558 million was invested in land, buildings and equipments.

In the political viewpoint, Thailand went through numerous changes from 2005 to 2007. First of all, probably the most well known event in the Thai politics is the military coup against the former Prime Minister, Thaksin Shinawatra. Also, events that took place in the southernmost provinces of Thailand played important role either in the whole country or in the bank's verve. For sake of understanding this event and

its relation to the Islamic bank's efficiency, we might consider to give an in-depth look of the situation. Unrest on the south started early as 2001, when Pattani guerilla groups resurgence in violence. However the former PM stated the events as only "bandit" activity. In 2002 Thaksin stated, "There's no separatism, no ideological terrorists, and just common bandits." By 2004 he had reversed his position, and has come to regard the insurgency as a local front in the global War on Terrorism. Martial law was instituted in Pattani, Yala and Narathiwat in January 2004. Since the region considered as a highly terrorist active in Thailand, and the presence of Martial law, south Thailand and its Muslim majority find itself in a very unpleasant situation, either way in the living conditions or in the consideration of the non-Muslim society. Bangkok has for decades ignored the need for investment and development in these areas, and treated them as a dumping ground for corrupt civilian and military officials, thus aggravating local anger. With Bangkok's accusation that 'terrorists' lurk within Muslim organizations, a bigger incident just waited to be happened. In late October 2004, a bloody incident took place in the small town of Tak Bai, Narathiwat. The incident left 85 people dead. Many can argue that this incident and the following atrocities between Thai Muslims and Buddhist, was a trigger and main motivation of the military coup, lead by Sonthi Boonyaratglin an also Muslim chief of general. Clearly, the growing economic situation of the early 2000's and also the strong headed but stable political environment came to a turn point at 2006. Political changes always effect's the economy and business environment. The political instability of 2006 could affect the numbers in the banks input and output side, result the changes in efficiency as well. However, the changes if there is any, more likely to effect the later years, mostly 2007 and 2008. By 2007, changes observed in the Islamic Bank of

Thailand's input side are all shows an increasing trend, except the general expenses, which over all a positive thing. The output side of the model for this year also increasing, the result of the calculation, the efficiency, also increased tremendously to 0.727. The question, if the bank's operation affected by the political situation in Thailand during this period is uncertain. Negative effects as first expected are not measureable with this efficiency analysis. The bank rates for the input and output side is the best since 2003. Efficiency of the bank has increased, costs and expenses of operation however decreased. Overall, the bank has no negative effects of the 2006 political situation in the financial year 2007.

4.11 Yearly Analysis 2008

After concluded that the political situation did not affect the bank negatively in 2007, further research needed in the year 2008, since long term effects might occur, even as late as 2009. First, the research and analysis of the input and output data required before the efficiency evaluation.

Table 4.11 Decision Making Unit 6

Year	Input 1	Input 2	Input 3	Input 4		Output 1	Output 2
2008	DaSTF	Capital	G&Aexp.	Equity		Tot. Loan	OEAssets
DMU6	19897.8	3123M	429.4M	3081.1		20753.3	781.2M

This year, as the trend started in 2007, some input data become stagnant or decreasing. As observable, general and administration expenses declined from 490 to

430 million baht in one year. Equity of the bank also declined since 2007, but in a small portion. Deposits and short term funds however keep increasing. From 2006 to 2007 the increase in deposits and short term funds was nearly 5 billion baht, which increased to a 7 billion baht from 2007 to 2008. This increase in the input side might have been the reason of the strong increase in the output side, which must result in same high efficiency point. The efficiency point for the decision making unit 6, the year 2008 is 0.8, (0.8250242). This increase from 2007, when the efficiency of the bank was reached the 0.7 point, is a very good sign of the increasing trend in two consecutive years.

The economic situation in Thailand during 2008 was not as good as the previous year, 2007. The growth of the economy slowed down from 4.9 percent to around 3 percent. This rate is over 5 percent lower than what have been expected in late 2008, probably the result of the diminishing purchasing power around the world, not to mention the most well spoken event of the year, the closure of the Suvarnabhumi International Airport by the anti-Thaksin yellow shirt movement. This event lowered confidence in the country much as the disturbance in the tourism industry. The inflation however lowered this year to a 5.5 percent rate from the 6.3 percent measured in 2007. Also, the Current Account Balance in 2008 ran into a -1.5 percent GDP deficit.

To see a clearer picture of the Thai economy in this year, the consideration of private, household and industrial investments are highly needed. Household spending showed a slightly increase. This increase was 2.2 percent. Important fact in this growth is the increased agricultural income, the lower inflation rate and employment

rate; all is an important factor in the bank's operational efficiency as well. Also mentionable for this year, the big increase in the sales volume of passenger cars, 47.9 percent. Private spending also increased in long lasting products, consumer products and services and foods.

On the industrial side of the spending there is a smaller growth observable, especially on machinery and construction. This slow down resulted from the global economic turndown. Investments in the last quarter of the year dropped over 5 percent. The political turmoil in Thailand recently also damaged trust in those investors around the world, resulting in another round of slow growth in the next three quarters. Export also dropped high as 9.4 percent measured in U.S. dollars and 13.4 percent in quantity while price increased nearly 5 percent. Overall, export declined by 7 percent. The quantity of import increased by 3.2 percent while import prices increased by 2.1 percent. Overall, the value of import rose by 8.1 percent.

The interest rate was lowered by 1.75 percent in the first half of 2007 before remaining at 3.25 percent per annum throughout the year end when the domestic economy revealed signs of improvement and the risks to inflation increased slightly (Nakornthab, 2009). Similar policy implications went through over the leading economies as well. The Federal Reserve lowered the interest rate in the United States as low as 0.25 percent. The Japanese national bank also dropped interest rates to 0.1 percent. In the European Union this interest rate was 1.75 percent, while in China 5.3 percent. Due to the continuing economic turndown, in 2009, more interest rate drop went through in Thailand. Note that this drop lowered the interest rate to 2 percent in 2009 January.

The overall performance of the Islamic Bank of Thailand however increased despite of the economic turndown. As mentioned on the previous page, the financing and deposits are increased. For the sake of diversification, the bank financings are divided for a consumers sector of 37.89 percent; industrial sector, 31.74 percent; real estate, 14.6 percent and commercial, 15.77 percent. In the Islamic viewpoint of the bank's operation, the credit approval of 917 million baht for Halal business in 2008 was larger than what the bank initially planned. This reflects the guarantee of the trust in the success of this business and a sign of the growing trust viewed by the bank's customers. Moving towards Islamic businesses seemed a good opportunity worldwide during the financial crisis. All over the world, investment in Shariah compliant businesses increased in 2008.

Other achievement of the banks in 2008 is the lowered rate of Non-performing loans (NPL). This 3.68 percent decrease from the previous year partly due to the internal restructuring and the establishment of a Liabilities Management Sub-Committee, or so called ALCO. The NPL rate for 2008 was 14.57 percent. Hence, the key factor for this decrease not just the establishment of the new sub-committee but the technological change, which was the development of the new NPL recording system, which allowed the Bank to utilize significant data provided by the system to successfully defend and direct NPLs management for the following year. However, there is a few significant changes went through in the Islamic Bank of Thailand. Some of these changes can be accounted for the increase of the efficiency. One of the significant changes was in the management team and the Bank's Committee. As changes in the bank's management went through, the new Bank Manager was officially appointed in August. Other significant event of 2008 is the permission by

the shareholders of raising new capital by 6 billion baht, which planned to collect completely by 2010.

The changes in the organizational structure and staff recruitment are also mentionable. In September, the bank carried on an organizational restructuring plan, in order to support business expansion, establishing a Personal Credit Department and restructuring the bank's organization for able to fit the banking industry's concentration. Some of the changes included the Business Credit Department 1, 2 and 3 into a Corporate Credit, Halal Business Department and SMEs Credit Department went through. A new Risk Management Department also established in this year forehanded with the Credit Analysis Department and the Liability Enhancement Department. In human recruitment management the bank followed western norms by recruiting experienced staff and increase training and development. Also a wide range PR campaign was held for investors in many regions of Thailand. Seeing the changes in the bank's management, the development in corporate governance, the increasing productivity and efficiency, one can raise the question that those changes will have permanent effect on the bank's efficiency. For answer this question further investigation needed in the year 2009.

4.12 Yearly analysis 2009

Importance of the last examined period in every academic work has a big importance. Every way of research has to include a complete and focused last period analysis. This is because the closing period of the analysis must include the evolution of the changed data's and efficiencies over time, the results of the ongoing trends

through the evaluated seven decision making unit. As seen in the previous two years, the bank has improved its efficiency, risk management, human recruitment and so on. The bank came close to a positive profit after six consecutive years in 2008, and according to the revised financial statement of 2008, the bank earned it, namely two million baht. Whether this profit increased or decreased to the year 2009, we have to give an in depth analysis of the changed data's first.

Table 4.12 Decision Making Unit 7

Year	Input 1	Input 2	Input 3	Input 4		Output 1	Output 2
2009	DaSTF	Capital	G&Aexp.	Equity		Tot. Loan	OEAssets
DMU7	40759.1	3123M	705.5M	3494.8		41848M	890.9M

First we can observe is the more than doubled deposits and short term funds. First aim of this section must be to find reasons why there was a tremendous increase in this input item in one year. Second, the share capital of the bank is remained unchanged since 2008, which means the bank did not raised funds through capital issuing in this year. The decreasing tendency of the general and administration expenses changed in 2009, where, according to 2008, a 276.1 million baht increase went through. This over 50 percent increase could affect efficiency, but seeing the changes both in input and the output side, this effect can be avoidable. On the output side, similar big change went through as in the input side. The most noticeable change is the over 100 percent increase in total loans. This doubled number is a reflection of the banks productivity and operation activity. Other earning assets show a moderate increase from 781.9 million baht to 890.9 million baht.

Other changes un-presented in the input-output table need more attention. The bank's total assets increased by 90.24 percent, from 23.835 billion to 45.343 billion baht. The total income is 89.27 percent higher than in 2008. But the most interesting change is in profit. In 2008, the bank earned 2 million baht positive profit. In 2009 this number increased by 16,905 percent, to 355 million baht.

In order to understand and explain the changes and improvements in the Islamic Bank of Thailand, first we have to consider the economic situation in Thailand and around the world. The year 2009 brought an unpleasant economic situation for developed and developing countries all over the World. The global economic crisis slowed down the growth of Thailand with about 2.3 percent. This slowdown in growth includes both private and industrial sector and also international trade. The major slow down accounted in the first three quarters of the year, when private consumption decreased by 2 percent, private investments fell by 15.4 percent, and export, which suffered the biggest decrease 17.7 percent, compared to 2008. The last quarter of 2009 however brought better economic environment, due to the recovery of the global economy. Private consumption, private investment and export contracted at the lower rates than in the first three quarter, 1.1%, 12.8%, and 13.9% respectively. On the other hand, as a safe implication, government spending increased by 4.7 percent according to 2008. As private consumption and investment both decreased, mainly due to the global and local economic slowdown and resulted in a slightly higher unemployment rate 1.5 percent. Private investments fall also due to the political unrest in Thailand. On the other hand, the Thai government stimulated the local economy in order to raise private confidence and investments. The stimulation included higher government spending all around the year. The 4.7 percent increase in

government spending finally brought a 5.8 percent increase in domestic consumption, 2.7 increases in private investment. This improvement of the private investment sector becomes the driving force of the country's economy in 2009, especially in the last quarters of the year. The global economic turndown had its affects on the Thai export as well. The value of the export shrank 13.9 percent. This decrease just came after the, over 15 percent rose in 2008.

One thing has moved to the pleasant direction is the inflation. The inflation rate in 2008 was 5.5 percent in Thailand, which has dropped to -0.9 percent in 2009. The reasons of this dramatic drop of the inflation, which become deflation, is the drop of the crude oil market price. The oil price drop lowered the entire oil products price, especially the gasoline price, which experienced a lower selling rate then in 2008. This thing was a relief for farmers, whom suffered from the lower demand and price of export products.

The following table shows the changes in the Thai economy in period of the last two decision making unit 2008 and 2009, and in comparison 2010.

Table 4.12.1 Rate of economic expansion and various components

	2008	2009	2010
Thai economy (GDP)	2.5	-2.3	3.5 – 4.5
Private consumption	2.7	-1.1	3.0
Private investment	3.2	-12.8	5.0
Public spending	1.0	4.7	2.3
-Public consumption	4.6	5.8	1.6
-Public investment	-4.6	2.7	3.5
Value of exports (USD)	15.9	-13.9	15.5
Value of imports (USD)	26.5	-24.9	24.0
Rate of inflation (%)	5.5	-0.9	3.0 – 4.0

Source: Office of the National Economic and Social Development Board (February 2010)

In a viewpoint of the business environment in Thailand during 2009 was a difficult year. The banking sector suffered highly due to the economic downturn. The loss not only accounting loss, but also the increases of new risks faced the banks for more necessary spending. The credit approved by Thai commercial banks only increased by 1.68 percent, much lower growth rate than it was in 2008 where the same approved credits rose by 21.20 percent. Comparing to the Islamic Bank of Thailand, where the credit increase accounted 127 percent, 125 percent higher than the average of the Thai commercial banks. The deposits in the commercial banks increased slightly, 10 percent lower than in the previous year. However, the IBT's deposits increased by 105 percent from 2008 to 2009. This unpleasant economic situation forced the commercial banks to emphasize more on the management of costs

and interest. Commercial banks also had to adjust business strategies, for increase profit on fee based incomes. In 2009, commercial banks accounted the biggest increase in income from fees and services.

On the other hand, the Islamic Bank of Thailand increased its income tremendously. One might be able to argue the fact that comparing one single financial institution for the whole banking industry in Thailand would be misleading, especially during difficult economic times. This can be right, but in fact, for the sake of understanding operating structural differences and its outcomes between commercial and Islamic financial institutions during the time of financial crises, this comparison is more than necessary. Drawing conclusion that the Islamic financial institutions are safer or more productive and efficient during difficult political and economic situations and crises might be a topic of another research but in fact, over the past years, many commercial banks closed globally, while Islamic financial institutions in those countries have been able to survive and grow. This can be observed in Thailand as well. The prime reason of this is their product structure is essentially asset-backed financing (Venkatesh, 2010). Moreover, other research studies on the recent global financial crises concluded that the performance of the Islamic financial institutions have been better than their conventional counterparts. However, arguments stated that the Islamic banks history is just too short, and the banks are too young to realistically conclude the better efficiency. This might be the case with the Islamic Bank of Thailand as well.

To be able to get a clearer picture of the Islamic Bank of Thailand's efficiency, the consideration of the DEA efficiency point is required. The efficiency of the

Islamic Bank of Thailand in the year 2009 reached the 0.9, (0.9157407) point. This is again an increase compared to 2008, when the efficiency point of the bank was “only” 0.83.

The big difference, what the efficiency points might not reflect clearly, is the difference in earned profit. Earned profit is referred to the net income here, as the bottom line of the balance sheet. Traditionally, earned profit is the profit attributable to shareholders, that’s why, its increase, is important. The difference between 2008’s and 2009’s efficiency points is only 0.09, one might say that this is a un-avoidable difference. On the other hand, if we see the difference between the earned positive profit between 2008 and 2009, the difference is bigger than 300 million baht, more exactly; 352 million baht, what might look small, compared to the banks input and output numbers, but comparing to the previous year net profit, which was only 2 million baht, the 352 million is a very important and noticeable difference, and might be a very important milestone in the banks future operation.

To be able to understand this increase in efficiency and profit, we need to identify the factors driven to this growth. The bank has been through numerous management changes since 2007. In the year 2008, for risk management purposes the bank set up the new sub-committees for solving risks, most importantly the credit risk, due to this, the bank reduced its non-performing loans from 14 percent to 9 percent, but also steps had been made to improve in the bank’s management team, in human recruitment and organizational communication. Also in 2008, the bank expanded its business activities among corporate customers and emphasized the large investment portfolios. In 2009 this focus concentrated on private costumers. The two

newly opened branch in Bangkok and the numerous new ATM machines support this fact. Another step to increase customer needs and enhance more customers to use the IBT's financial services is the expanded business channels through a network of other institutions, such as Thailand Post Company Limited, Tesco Lotus, Krung Thai Bank Public Company Limited, and Siam Commercial Bank Public Company, where the MOU signed in 2009. After this, costumers could pay the credit installments conveniently in over 1000 location in Thailand according to the IBT's Annual Report.

4.13 Conclusion of the Data Envelopment Analysis

Data Envelopment Analysis as solution for the intra-firm efficiency analysis over time used in this research. This method earned popularity in the recent time with its complexity but easy applicability. However, another efficiency analysis introduced in this research for the clearer and wider picture of the bank's effectiveness. The calculation of the efficiency scores have be done yearly from 2003 until 2009. The more frequent analysis was not accomplishable due to the frequency of the available data sets. However, the real aim of this part was to identify whether the bank use its resources effectively to generate profit. This question and the whole vision of the research are the concerns about the Islamic Bank of Thailand's inefficient operation due to its five years unprofitability. The research however found that the bank do not used its resources effectively for generating profit but this is not the result of a bad management, but the result of the growing size and the first few years difficulties, which observable in most of the firm, in every industry. In 2008, after five years of operation, the bank reached a level of management, costumer, governance, where

generating positive profit is achievable in any moderate political or economic situation. Empirical results showed, that the Islamic Bank of Thailand, compared to conventional banks in Thailand, left relatively unaffected by financial crisis, or political instability, and maintained a stable growth during that periods. Also, the results of efficiency analysis showed an increasing trend over time, with a small, two years period of stagnancy in 2005 and 2006. In the last observed periods, in 2008 and 2009, the results showed an almost totally efficient operation. Note that stating whether the bank is efficient or not, the consideration of the used inputs and outputs is crucial. There is a chance that the same institution with dissimilar input and output data would show different efficiency points. However, the complexity of a financial institution makes it difficult to identify the best inputs and outputs for an analysis, but from recent researches, the most appropriate data had been used in this research. In future research options, one might consider different input and output data, or change program orientation, which would result in different efficiency points.

4.14 DATASET FOR DEA

Table 4.14 Input and Output data for DEA

DM	Input 1	Input 2	Input 3	Input 4	Output 1 Tot.	Output 2
U	DaSTF	Capital	G&Aexp.	Equity	Loan	OEAssets
03	511,678,392	696,860,000	51,034,249	646,102,546	517,085,449.	43,068,056
04	1,654,450,328	696,860,000	100,237,73 4	555,655,512	1,701,169,554	86,388,908
05	4,644,280,355	696,860,000	231,840,52 7	6,121,737,40 3	5,663,164,687	301,874,36 8
06	8,214,759,744	707,444,000	442,615,41 5	8,773,801,65 0	8,607,857,977	588,366,54 4
07	12,859,225,83 2	31,230,000,0 00	490,236,74 1	3,172,463,97 6	13,613,032,60 6	672,761,35 9
08	19,897,845,36 0	31,230,000,0 00	429,352,37 7	3,081,073,36 5	20,753,518,79 9	781,179,84 6
09	40,759,128,60 0.	31,230,000,0 00	705,499,67 9.	3,494,800,12 3	41,848,032,12 4	890,887,20 5

Figure 4.14.1 Input Data for DEA

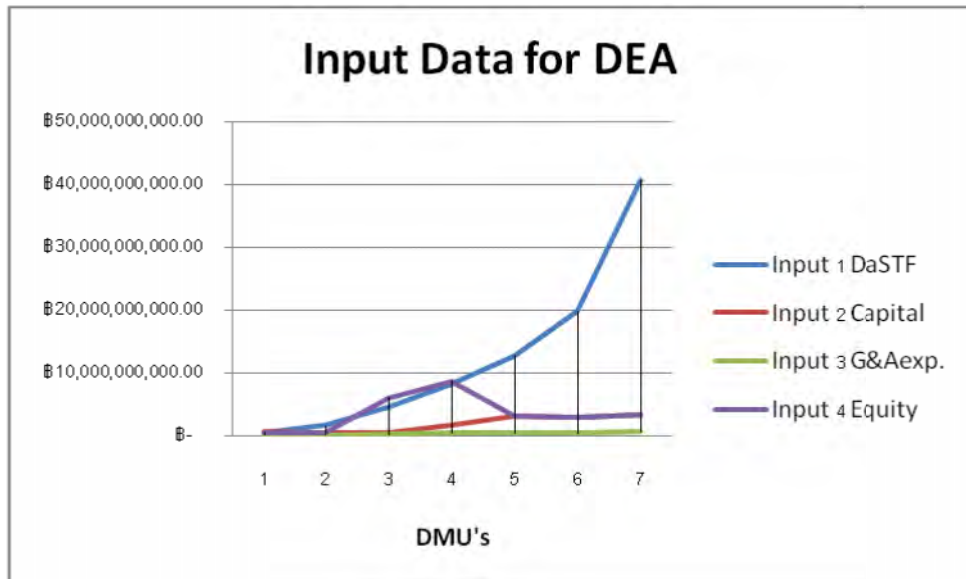
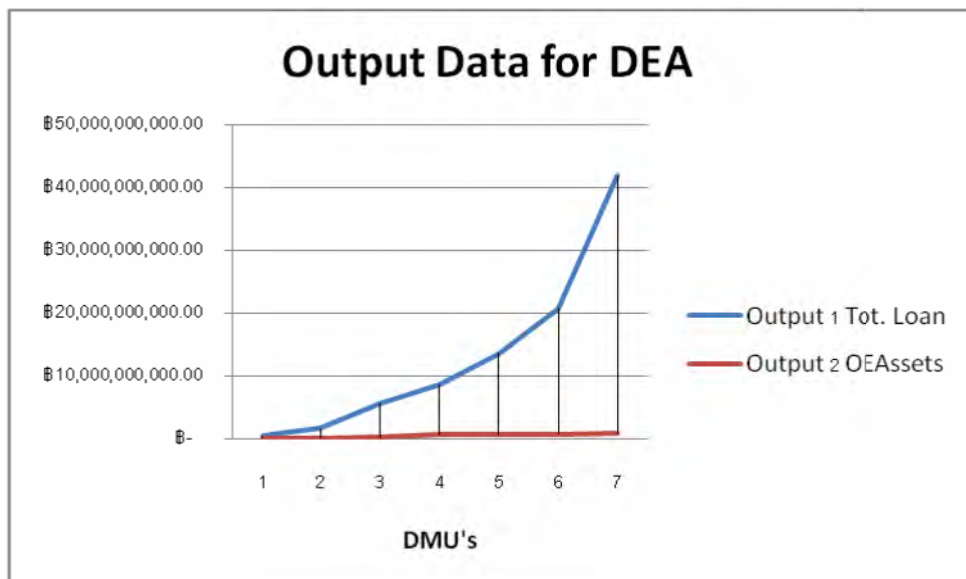


Figure 4.14.2 Output Data for DEA



CHAPTER V

CONCLUSION

5.1 Summary

The Financial and Efficiency Analysis of the Islamic Bank of Thailand aimed to determine whether the bank operated efficiency in between the period of 2003 to 2009. What we have found is that the Islamic Bank of Thailand did not operated fully efficient during this period. However, the full efficiency is a relative thing. The bank did start to earn positive profit after the fifth year of its existence and had an increasing trend in efficiency. The profit earned by the bank also tremendously increased in the last three investigated period. What has been found is that the efficiency did not increased by the same proportion as the profit. This is an important founding to understand, growing profit did not mean higher efficiency. However, during the comparison with the Al-Amanah Islamic Investment Bank of the Philippines, the research found that the Islamic Bank of Thailand did perform much better than the AAIIBP. Hence, during the 2008 financial crisis, The Islamic Bank of Thailand had a better performance and higher growth rate than many of the Thai conventional banks. This founding supports the widely accepted hypothesis that the Islamic financial institutions are a safer place to invest and or keep funds during a financial crisis than its conventional counterpart. The Islamic Bank of Thailand aimed to serve the needs of both Muslim and non Muslim costumers and investors. Investors nowadays might have been well informed by this fact, but the public certainly not. With the help of the results of this research, the work of the bank's management and

marketing, to inform the public of the advantages of the Islamic Bank of Thailand might have become easier.

5.2 Suggestions for Policies

After the performance evaluation of the Islamic Bank of Thailand, few possibly points for improvement came up. These suggestions for new policies and changes in the bank might be beneficial to consider by the Islamic Bank of Thailand's management.

First of all, this research identified some of the already existing and successful policies, products and decisions made by the Bank's management. These successes mentioned as the following sample for the future developments.

Moreover, there are a few possibility found by this research, what could make the banks performance and efficiency better.

The Islamic Bank of Thailand accounted positive profit in 2008 and 2009 what is a close result of the tremendously increased Total Assets through Shareholders Equity in that period. The increase of the bank's total asset is an essential key for increase the net profit end of the year. With higher total asset, the bank simple can increase its profit without increasing its efficiency. This isn't the best way but surely a good way. In able to do such an increase, the bank has to raise its customer base. Surely, with more variety of products, for sacrifice the demand of both Muslim, and non-Muslim costumers.

Increasing of the public contributions and programs such as the tree planting, Zakat based scholarships or similar contributing packages like the relief credit, loans

for new carriers and fast track loan projects, could earn publicity and public trust, not just amongst Muslims. Moreover, Islamic Bank of Thailand should launch a media campaign for gain more non-Muslim customer. Public misunderstanding about the Islamic Bank of Thailand, more likely to exist, as a bank only operates for Muslim people, but with an educational project about the bank's different principles, operation conduct and packages would increase the number of customers, especially in the rural areas.

Other important aspect and very closely related to the first point, the increase of customer base, is the product innovation. The Islamic Bank of Thailand offering increasing number of new products year by year, but still not give as much option as an conventional bank. Improving the services is one of the biggest challenges that the bank face. The IBT needs to diversify its products and services and also incorporate more transparency. The fact that the bank is the only one Islamic bank in Thailand seemed not give all the advantages of a cliché. Just as any other commercial bank, The Islamic Bank of Thailand needs to complete with commercial banks in innovation and providing services.

Increase the size of the bank and launching new products brings up an important issue. To be able to keep the confidence of the Muslim customers that the bank operates according to the Islamic law the Shariah, the Shariah advisory committee has to evaluate all the new launching products, what could give a major disadvantage in time for the Islamic Bank of Thailand. For effectively serve both Muslim and non-Muslim customers, the bank have to establish a very fast and flexible contact line between the bank's management, leadership and the Shariah advisory

committee. This means an increased number of meetings between the Shariah advisory committee and the heads of each innovating division.

Another important aspect is the unite management of the bank. Handle the aimed growth goals, the bank has to establish a strong unite management system. During the seven years covered in this research, the iBank's management went through numerous Board and Executive changes. Build a sustainable, efficient and trustworthy institution, strong internal co-operation need from all the members of the bank, whether is a top ranking executive or an administrator. This goal is achievable with regular corporate trainings, long term employment contracts and internal education.

Another important aspect is the increase of deposit products so for increase the asset size of the bank is a recommended way. This is a very beneficial for both the bank and to the customers of the bank. Long term deposit products are the safest way for the bank to lower risk and increase its size. Hence, this is also beneficial for the Muslim and non-Muslim society.

5.3 Limitations and Extensions

This research contains many elements what left the possibility for future research in this topic. First of all is the shortage of the data. Many of the desired and proposed dataset from the AAIIBP haven't been received for the better comparison in some financial ratios. In overall, a conclusion can be drawn that the Islamic Bank of Thailand performed better than the AAIIBP, but some crucial and interesting ratio

like the Debt to Equity ratio, Debt to Total Assets ratio, Non-Performing Loan ratio, Capital Adequacy Ratio, Long Term Loan Ratio and the Zakat Performance ratio left un-compared.

Other possible future extension is to continue the analysis with the newly available data in the future. This future analysis will be so crucial time to time to be able to get a clear picture of the Islamic Bank of Thailand's efficiency development. Without upgrading and re-calculating the ratios and the efficiency points in the future would result a half work such as stop photographing a growing infant after it's become a teenager.

Using other international or even hopefully domestic counterpart if exist in the future for the financial ratio calculation will be beneficial for the sake of better understanding of the early years of this bank.

The Data Envelopment Analysis also could be a possibility for future extensions. Calculating the efficiency of the Islamic Bank of Thailand with another inputs and outputs could result in a different efficiency points. Moreover, for to have a better way of comparison, calculating another Islamic financial institution's same input and output factors in the same years as it have been done for the Islamic Bank of Thailand could possibly give a better benchmark for comparison.

REFERENCES

- Aggarwal, R., and Yousef, T. Islamic banks and investment financing, Journal of Money, Credit and Banking, Vol. 32, No1. (February 2000)
- Ahmed, S. Islamic Banking And Finance A Review Essay. Journal of Monetary Economics 24, (1989): 157-167
- Al-Amanah Islamic Investment Bank of the Philippines, Financial Statement, 2004
- Al-Amanah Islamic Investment Bank of the Philippines, Financial Statement, 2005
- Al-Amanah Islamic Investment Bank of the Philippines, Financial Statement, 2006
- Al-Amanah Islamic Investment Bank of the Philippines, Financial Statement, 2007
- Al-Amanah Islamic Investment Bank of the Philippines, Financial Statement, 2008
- Ali, S. Nazim. Information on Islamic Banking and Economics as Represented by Selected Databases. International Journal of information Management, 73(1993):205-219
- Bashir, A.H.M. Assessing the Performance of Islamic Banks: Some Evidence from the Middle East. 2001.
- Bashir, A.H.M. Risk and Profitability Measures in Islamic Banks: The Case of two Sudanese Banks, Islamic Economic Studies, Vol. 6, No. 2, 1999
- Basle Capital Accord. International Convergence of Capital Measurement and Capital Standards, 1998
- Berger, A. N., Hancock, D., and Humphrey, D.B. Bank efficiency derived from the profit function. Journal of Banking and Finance 17 (1993): 317-347.
- Berger, A. N., Molyneu, P., and Wilson, J. O. Oxford handbook of banking. Oxford University Press, 2009.
- Brigham, E. F., and Ehrhardt, M. C. Financial management: theory and practice: study guides (11th edition) Mason, Ohio. Thomson/South-Western, 2005.
- Charnes, A. Liquidity risk measurement and management: a practitioner. Boston: Kluwer, 1994.
- Charnes, A. Data transformations in DEA cone ratio envelopment approaches for monitoring bank performances. European Journal of Operational Research 98 (1997): 250-268

- Charnes, A., Cooper, W. W., and Rhodes, E. Measuring the efficiency of decision making units. European Journal of Operational Research, (1978): 429-444.
- Chen, C.H. and Shi. Banking and Insurance in the new China, Journal of Asian Business, 23, (2007): 17.
- Chong, B. S., and Liu, H. M. Islamic banking: Interest-free or interest-based. Pacific-Basin Finance Journal 17, (2009): 125–144.
- Darrat, A. F. The relative efficiency of interest-free monetary system: some empirical evidence. The Quarterly Review of Economics and Finance, 42 (2002): 747-764.
- DeThomas, A., and Pophal, L. Writing a convincing business plan, Hauppauge, N.Y., Barron's Educational Series, 2001.
- Dyson, R. G., and Thannassoulis, E. Reducing weight flexibility in data envelopment analysis., Journal of Operational Research Society, 39(6), (1998): 563-576.
- Ferrier, G. D., and Lovell, C. A. K. Measuring Cost Efficiency in Banking Econometric and Linear Programming Evidence, Journal of Econometrics, 46, (1990): 229-245.
- Gafoor, A. L. M. Islamic Banking & Finance: Another Approach, Critical Debates among Canadian Muslims, Islamic Hinterland Conference, Toronto, 1999, Toronto, Canada, 1999.
- Greuning, H., and Iqbal, Z. Risk analysis for Islamic banks, Journal of Economic Cooperation and Development, 31/3, (2008): 83-105
- Hassan, K., and Lewis, M. Handbook of Islamic banking. Cheltenham, UK: Edward Elgar, 2007
- Hassan, K., and Bashir, A. H. M. Determinants of Islamic Banking Profitability, 10th ERF Annual Conference, (December 1996), Morocco. Morocco: 1996
- Islamic Bank of Thailand, Annual Report, 2003
- Islamic Bank of Thailand, Annual Report, 2004
- Islamic Bank of Thailand, Annual Report, 2005
- Islamic Bank of Thailand, Annual Report, 2006
- Islamic Bank of Thailand, Annual Report, 2007
- Islamic Bank of Thailand, Annual Report, 2008
- Islamic Bank of Thailand, Annual Report, 2009

- Jakov evi , D., and Hunjak, T. AHP Based Model for Bank Performance Evaluation and Rating, Proceeding at Isahp 2001, Berne: 2001.
- Jahangiri, K. The Rise and Rise of Islamic Finance. Financial Perspectives, (November 2009)
- Johnes, J., Izzeldin, M., and Pappas, V. The efficiency of Islamic and conventional banks in the Gulf Cooperation Council countries (GCC): Analysis using financial ratio and data envelopment analysis. Lancaster University Management School Working paper , 23, 2009.
- Khan, M. S., and Mirakhor, A. Theoretical studies in Islamic banking and finance. Houston, Tex.: Institute for Research and Islamic Studies, 1987.
- Kuosmanent, T., Kortelainen, M., Sipilainent, T., and Cherchye, L. Firm and Industry Level Profit Efficiency Analysis under Incomplete Price Data: A Nonparametric Approach Based On Absolute and Uniform Shadow Prices, Ideas, (February 2006)
- Kuosmanen, T. Modeling Blank Data Entries in Data Envelopment Analysis, Econometrics (October 2002)
- Maggi, B., and Rossi, P. S. S. An efficiency analysis of banking systems: a comparison of European and United States large commercial banks using different functional forms. Working Paper No: 0306, 2003.
- Matz, L. M., and Peter, N. Liquidity risk measurement and management: a practitioner's guide to global best practices. John Wiley & Sons (Asia), 2007.
- Parashar, S. T., and Venkatesh, J. How did Islamic banks do during global financial crisis? Banks and Bank Systems, Volume 5, Issue 4, 2010.
- Pew Research Centre. Mapping the global Muslim population, Report on the Size and Distribution of the World's Muslim Population, 2009.
- Saleh, A. S., and Zeitun, R. Islamic Banking Performance in the Middle East: A Case Study of Jordan. WP 06-21, 2006
- Sanusi, M. M. Critical Issues on Islamic Banking, Finance & Takaful. INCEIF, 2001
- Sheng, A. Banking Fragility in the 1980's, 1988
- Skully, H. M., and Pathan, M. Efficiency of Microfinance Institutions: Data Envelopment Analysis, Money, Credit, and Banking, vol. 32, No.1, (2004): 93-120

- Subhash, C. R. Theory and Techniques for Economics and Operations Research: Data Envelopment Analysis, Cambridge Press, 2004.
- Tulkens, H. On FDH Efficiency Analysis: Some Methodological Issues and Applications to Retail Banking, Courts, and Urban Transit. The Journal of Productivity Analysis, 4, (1993): 183-210.
- Yang, C. C., Wang, M., and Chen, X. Catastrophe effects on stock markets and catastrophe risk securitization. The Journal of Risk Finance Vol. 9 No.3, (2008) 232-243.
- Yoko-Arai, M. Financial Stability Issues: the case of East Asia, 2002.
- Yeh, Q. J. The Application of Data Envelopment Analysis in Conjunction with Financial Ratios for Bank Performance Evaluation. The Journal of the Operational Research Society, Vol. 47, No. 8, (1996): 980- 988.
- Yudistira, D. Efficiency in Islamic Banking: an Empirical Analysis of 18 Banks, Islamic Economic Studies, Vol. 12, No. 1, (August 2003)
- Zhu, J. Quantitative models for performance evaluation and benchmarking data envelopment analysis with spreadsheets (2nd Ed.). Berlin: Springer, 2009

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