

Internet Banking Vs Conventional Banking in terms of Profitability Index: Case study of Saudi Arabia

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ABSTRACT

The purpose of this paper is to examine the internet banking system with the conventional banking system in Saudi Arabia. The idea of this study is to evaluate the variation performance of both the system, for this we will use the data of 7 local banks for a time period from 2005-2011, which are currently providing both of these services, we will use the data from the financial statements of these banks to find out the most commonly used ratio to empirically evaluate the performance of these systems. We use the Dummy Variable for those years which the bank had not started using the internet service, this way we can see how much it changed .The study gives us a clear idea that the internet banking adoption is clearly improving the Return on Equity (ROE) in terms of profitability, and also the capitalization is having an positive impact on the profitability.

Keywords: Internet Banking, Conventional Banking

ÖZ

Bu çalışmanın amacı internet bankacılığının Suudi Arabistan bankacılık sisteminde uygulanması ve karlılık üzerinde etkileridir. Bankacılık sisteminin gelişimini 7 tane ticari bankayı ele alarak 2005-2011 yılları arasındaki performansları bilanço ve gelir gider tabloları incelenmiştir. Performanslar ampirik çalışmalara sonucunda irdelenmiş ve bankaların internet adaptasyonun banka performanslarını ne şekilde etkilediği incelenmiş ve internet kullanımının banka büyüklüğü ve karlılıkla doğru orantılı olduğu görülmektedir.

Anahtar: internet bankacılığı, Ticari Bankacılık

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LIST OF ABBREVIATIONS

GDP:	Gross Domestic Product
ROA:	Return on asset
ROE:	Return on equity
CAR:	Capital adequacy ratio
EFF:	Management efficiency ratio
ASQ:	Asset quality ratio
LQR:	Liquidity ratio
LSIZE:	Natural logarithm of total assets
DI:	Digital Insight
IMF:	International Monetary Fund
SAMA:	Saudi Arabia Monetary Fund
KSA	Kingdom of Saudi Arabia
NIM:	Net Interest Margin
OLS:	Ordinary Least Square
E-VIEWS:	Econometric views

Chapter 1

INTRODUCTION

1.1 Historical background

In the 15th century the first institution was made that was actually called a Bank. In the 18th century BC the financial institutions started working but the main aim was to keep valuable items in their institute. During the 20th century, developments in telecommunications and computing resulting in major changes to the way banks operated and allowed them to dramatically increase in size and geographic spread. Electronic banking, or e-banking, is the term that describes all transactions that take place among companies, organizations, and individuals in their banking institution through internet. The concept of online banking as we know it today dates back to the early 1980s, when it was first envisioned and experimented with. However, it was only in 1995 (on October 6, to be exact) that Presidential Savings Bank first announced the facility for regular client use. The idea was quickly snapped up by other banks like Wells Fargo. Stanford Federal Credit Union was the first financial institution to offer online internet banking services to all of its members in October 1994.

In the case of Saudi Arabia the first bank that was established was a foreign bank which was established in 1926 in Jeddah (one of the main cities of Saudi Arabia) but its importance was minor, later on foreign and domestic banks were formed as oil revenues began to increase in the kingdom. In 1952 the Saudi Arabian Monetary Agency

(SAMA) was created, designed to serve as the central bank within the confines of Islamic law. Saudi Arabia has 13 National Banks and 10 Foreign Banks. Most of the National Banks in Saudi Arabia are all working under Islamic rules. All the banks are currently using E banking System which they all started to use after 2002. National Commercial Bank (NCB) is the first Saudi Arabian bank, the largest bank by NCB is the first established Saudi Bank, having the largest Asset in the Arab world & also one of the most important Pioneers in Islamic Banking & finance. It owns almost 90.424% of NCB capital and also owns about 64.68% of Turkiye Finans Katilim Bakasti (TFKB) which is the leading bank in Turkey. Another bank of Saudi The Al-Rajhi Bank is the world's largest Islamic bank and a major investor in Saudi Arabia's business world.

1.2 Aim of the study

The main purpose of this Research study is to actually find out that which banking system (Conventional or E-banking) is actually helping the banks in the increase in their profitability. In order to find out the profitability, we will use the CAMEL's Approach to measure profitability in terms of capital adequacy, asset quality, management, liquidity and bank size. For this purpose, we will refer to the banks financial statements to find most commonly used ratios.

1.3 Scope of the study

The main idea is to actually find out which system is affecting the bank in a more positive way. The customers perceptive in regards of using internet banking is that using the internet is more efficient than using any other distribution of medium, as it saves time to go to the bank in real and the only thing require to use the internet is a bit of education and internet. So the people who are educated are more likely to use

the E banking. The banks can minimize their operating cost by reducing the number of branches and hiring less staff.

1.4 Structure of the thesis

The thesis structure is composed of the following chapters. Chapter 2 is the Literature Review, Chapter 3 will define the Banks Role in attracting Customers plus the Survey of the banks, Chapter 4 will be about the Methodology that we will be using, Chapter 5 will discuss and interpret ate about the Empirical Results, and Finally in Chapter 6 will be Conclusion and Suggestions.

Chapter 2

LITERATURE REVIEW

There have not been many similar studies done on Internet banking vs. commercial banking on basis of profitability in Saudi Arabia. So this study will fill the gap in the literature. There are many studies/papers done on profitability of banks irrespective of different countries, which are Sana Haider (2011), Abdullah (2009), Smadi (2010), Pooja Malhotra (2009), Sathye (2005), Jayawardhena (2000), Marenzi (2000), Onay (2008), floros(2008), Sumra(2011), Guru(2008), Yosa(2011), Hernando (2006).

A study done by Sana Haider of Pakistan in 2011 (The impact of E banking on the profitability of Banks). That paper had covered 12 banks across Pakistan, and it was a qualitative in nature which examined the overall effect with the performance of banks mainly in terms of profitability. The method they used to conduct this study was interviewing with the managers of the banks and the most common way to examining performance of banks is through the level of banks profitability. As a result the interview from the bank managers confirmed that Electronic banking has a considerable impact on the profitability of banks. Banks are gradually transitioning from manual means to the electronic means, efficiency has risen as the costs have been reduced (cost of labor, time saved, accuracy and quality of service improved). The banks financial statements that were used in this study also showed that the bank's profitability has also blown up to

great amount due to usage of electronic resources in stipulation of their services and product.

For the case of Saudi, by Sabah Abdullah (2009) (An investigation with the acceptance of online banking) this study was actually done to encourage customers to actually adopt online banking system in KSA for one of the most multinational city Jeddah, the research methodology that they use was based on TAM (technology acceptance Model), the model was empirically verified by the adoption behavior of about 400 customers. The study not only resulted in contribution of TAM system validation but also it helped in predicting some useful factors that the currently customers of Commercial banking sector of Saudi should divert their attention towards online banking.

Another Study that was done by Al-Smadi (2010) on The Impact of E- Banking on The Performance of Jordanian Banks, the study was done to see how the impact of internet banking has affected the banks in Jordan, the study was done for 15 local banks for a period of 10 years. Accounting data were already used to measure the performance and regressed of bank on relevant variables using OLS (Ordinary Least Square) regression. The result that was actually conducted from this study was that there was a negative effect in bank performance while using E banking as the customers of Jordan preferred to use the branch banking way to complete their transactions, which resulted in E banking having higher revenues than the normal services. Big banks are getting more and more popular compared to the small ones because the big banks have more advantage of improving themselves and getting better services compared to the small banks. E banking will have more beneficial for banks determining its use and growth which might take time but eventually banks will succeed in it. Banks be supposed to

focus their work to get the confidence of people for E banking services in such a way that attract customers to use internet banking for marketing policies.

Malhotra (2009) on the current internet banking system in India and checks out its effect on how this new system has impacted on the banking performance and risk on Indian Banks. The study was done for a time period of 8 years (1998-2006) for 85 banks, the study analyzed that almost 57% of the commercial banks are using internet banking service. The result showed several important differences between the banks using internet services compared to the ones that are not actually using it that much, In India Internet banks mostly rely on the deposits which is similar to the traditional financing source. The survey and evidence actually showed that there is no major relationship between adaption of internet by banks on their performance. Internet banking has a negative effect on profitability of private sector banks, because internet banking operates with a relatively higher cost, fixed cost and labor. Also the internet banking has no impact on raising the risk of the banks.

Sathye (2005) investigated the impact of Internet banking on performance and risk profile, the study was done to see how the impact of Transactional Internet Banking (TIB) has affected the performance and the risk of major Credit Union in Australia. The method that was used to measure was linear programming technique of data envelopment & accounting data were used to measure the risk profile and regression on OLS regression. The result showed that the TIB didn't have any effect on both the risk and performance. As the credit union's commercial sector usually operates under the various constrains like the small size, limited area, so based on this they might have a lot of trouble using TIB, as if they use they might have to reduce the number of branches and also lay back on their current employees. This proved that the small financial

Institution like credit unions cannot benefit from TIB especially when they have just started using this service. If TIB has to become a more useable tool than credit union may have to ensure the most of their members to use the TIB at its full, and to make it as a cross selling opportunity.

Jayawardhena (2000) investigated the change in internet banking in the case of United Kingdom, his paper mostly was based on customer satisfaction and how the bank could make their services more and more profitable for themselves and to attract customers, as internet has empowered customers to actually control and monitor their own account. Total numbers of 12 banks were currently providing the internet service, This investigation had 2 parts to their result first one was that the banks should satisfy their customers, be ready to face different competition with other banks and to actually provide better and new services compared to other banks. Whereas second one was that current online providers were offering very few and imperfect selection of tools that may be useful to improve the personal finance management. Internet banking could well be developed but it will take time for this service to actually catch on. In the later years this will be one of the most usable service for all banks.

Marenzi (2000) analyzed Digital insight (DI) offering on is internet banking profitable, the facts that was used for about 1 million internet banking service users from around the world. Some sources that DI founded that were resulted in profiting the banks using internet banking were having lower transaction costs, and manage to improve their cross selling opportunities, such sources came into consideration that almost all banks were making profits with internet banking, however it wasn't at all possible to state that it is always profitable. Internet service provided by smaller institutions having about (15000 customers) were less likely to have profits from this service, as the number of

customers were less and not all of them will be using internet service, where as the institutes having higher size than that were able to gain profit more, this was found in this study and as well as other studies did on this topic previously.

Onay (2008) tried to observe the contact of internet banking system on the financial institutions of Turkey Banks, a total number of 13 banks data were used for a time period of (1996-2005). The data were analyzed through panel data. They estimated the outcomes of online internet banking activities on the following determinants of bank performance which are Return of Assets (ROA), Return of Equity (ROE) and Return of Financial Intermediation margin. The result founded showed that ROE had only positive impact on the banks only with a lag of two years, while a negative impact was observed on one year lagged. Since the data was still insufficient, but the future study on this topic may result in a better understanding of the outcomes.

Floros(2008) on how internet banking websites performed in Greece, the paper actually examined the performance of the Internet Banking (IB) websites and the pages viewed per day. The outcome of this study was that Internet Banking is attractive for the customers for conducting banking transactions (24/7), with low fees compared to the traditional way of banking. The results show that only large Greek banks showed high percentage of global Internet users who visit their web sites, it also concluded that the Greek Banks having a lot of ATM's are more efficiently used that the one with less ATM's. The Greek bank showed a stable website performance over time but still there statistics are far low compared to the European Banks. If Greek banks consider that Internet Banking is their major distribution channel so they should try to exploit all potential ways to provide this service to their customers, in order to boost demand for internet banking.

Sumra and Manzoor (2011) which takes a qualitative approach to the banks in which the profitability of the banks in Pakistan. The Internet banking is dispersion its influence from every sector of banking of which for example ATM, credit card, fund transfer, cheque payment etc. By now the adoption of internet banking has easily increased the efficiency. The reason for the efficiency can easily defined as having less employees to provide this services, the accurateness has been enlarged and no human errors, the speed of transactions is fast and reliable bring down the costs down. According to the survey the customers are satisfied with interacting with the machine to fulfill their banking needs has greatly decreased the costs and increased the profits. So as a result, the financial statements of the Pakistani banks were studied and was found out that large growth of profitability can be found due to increase incorporation of internet banking with normal banking services.

Guru (2008) on Determinants of commercial banking profitability in Malaysia, the study was done on the local banks and the paper was initiated by a series of questions asked to identify the determinants of successful commercial banking system in order to provide practical guidness for improving profitability performance of these institutes, the findings provided an insight into the characteristics and practices of successful commercial banks in terms of profitability, the commercial banks should take the necessary actions to increase their current account deposits, which will create a free funding from floats and contribute more positively towards profitability, in addition to this the commercial banks should be sensible in providing for the financing for the investment in highly volatile sectors (like stock markets, and property markets), in this context lending to the such sectors can only be taken in consideration if proper monitoring system and sound credit management is there to assist. The impact of the

asset components (loans and advances, investment in both securities and subsidiaries) contributed towards the bank's profitability, a more detailed analysis of the loans portfolio may be useful for banks management in structuring a sound, stable and profitable asset portfolio.

Yosa (2011) did his study on Analyzing of customer satisfaction using Internet Banking in Mandiri (Indonesia), the main purpose of this study was to analyze the level of customer satisfaction and the gap between the perception and expectations of Mandiri internet banking in term of these aspects (reliability, access, security, understanding the customers). Based on the result obtained from testing the hypothesis of the research that were also approved by the results of the calculations, this showed a proof that the performance had positive correlation with the studies. Any change in each attribute of service quality will positively affect overall customer satisfaction, in addition to this result the bank must also reduce the gap between the performance with the interests of the bank must know what the customer needs through surveys, so that they can improve their customer relationships more and the bank should improve quality of service standards and priorities gap that occurs.

Hemando, Nieto (2006) on (is the internet delivery channel changing banks performance, the case of Spanish banks). This study tries to fill the gap by identifying and estimating the impacts of the adoption of a transactional web site on financial performance using almost 72 commercial banks operating in Spain over the time period between (1994-2002) 8 years. The adoption of the internet as a delivery channel involves a great reduction in overhead expenses like (staff, marketing and IT). This effect is noteworthy after one and a half year after the banks have adopted this system. This cost reduction translates into an improvement in banks profitability, which becomes

significant after one and half year in terms of ROA and three years in terms of ROE. The paper also helped in concluding that internet is being used a compliment to, rather than a substitute for physical branches.

Chapter 3

SAUDI BANKING SYSTEM

3.1 Enhancements in Saudi Banking System:

Saudi Arabia has a profitable and stable banking industry, closely regulated by the Saudi Arabia Monetary Agency (SAMA). The banking sector is composed of 13 Saudi-owned banks and 8 branches of foreign banks. The country's largest bank, the National Commercial Bank, is controlled by the Saudi government and operates under Islamic principles. In addition to commercial banks which meet general banking needs, five government-developed credit institutions are designed to meet private and corporate financing needs.

The cash is favored to be used for everyday transaction, where as cheques are considered not that much trustworthy in this part of the world.

In KSA to open an account in the bank, a customer must have a sponsorship letter from his sponsor, for instance if a employee wants to open an account in the bank, he should show an authorize paper given to him by the company he works for, which will describe his current position in the company and also his salary monthly basis, and how much will be coming to his account on monthly basis, such information are required before a customer can actually open an account, in addition to the residence visa and passport. It is always beneficial for banks to pursue big companies and ask them to open a company's account in their banks, once such agreement is done the

company will open accounts for all their staffs, this way staffs can get their salary on time and also other advantages that the bank is offering currently.

Internet in Saudi Arabia was actually introduced in 1994, but was made publically in 1999. A survey was done in year 2000 that there was approximately 200,000 users of internet in the kingdom, which increased to 2.54million by 2005. Saudi Arabia has increasingly started to offer internet banking system. The banks in Saudi Arabia have actually adopted the integrated approach, which means that the banks have their own accessible services and also offers internet banking system as an addition to the services they provide. Internet banking provide services such as: current asset management, personal loans, brokerage services, mutual funds, issue of credit cards and many more. Due to increase of internet service provided by each bank the competition in the Kingdom has increased to attract more customers.

Current Economy:

The economy of Saudi Arabia is a command economy and it is mostly petroleum based. The oil company compromises nearly about 45% of the total Gross Domestic Product (GDP). According to a survey approximately 260 billion barrels of oil reserve are available in KSA. The increase of oil prices in 2008-2009 has surplus their previous budget of \$28 Billion. Saudi Arabia is one of those fewer countries that are growing rapidly with a relatively highly per capita income of \$24,200 (in 2010), A forecast done by the king of Saudi Arabia that the per capita will increase from \$15000 (2005) to \$33500 (2020)

Recent Crises:

Even During the recent crises Period when United States mortgage was in threat and Lehman Brothers were collapsing, Saudi Arabia brilliant cash flow and its amazing oil profit kept it in a strong position. Despite the downfall of US dollar, Saudi Arabia announced that they will keep riyal pegged with US dollars. During economy downturn they only had to face decrease of oil prices from \$147 per barrel in July 2008 to \$38 in December 2008. Saudi banks profited nearly about SR 26 billion despite the financial crises of 2008. SAMA (Saudi Arabia Monetary Agency) had played a very crucial role in the Saudi Economy, they already had an eye on the approaching crisis, and when it actually came they were ready to provide sufficient cash approximately SR 150Bn to the markets and also banks in order for them to manage up the crises.

3.2 Internet Banking Adoption in Saudi Arabia

An interview was done with the Managers of 7 Banks between the months (June-August), to ask them about the current position of the banks and how can the service be made better in both the banking system.

The following Questions were asked during the interview.

- When the Bank started to Give E banking Services?
- Was there any decline in the Operating Cost?
- Any Increase/Decrease in the employees after the E banking was introduced?

Table 3.2 (Results of Interviewing with the Managers)

NO	Name of bank	Started E banking	decline in operating cost	Increase/decrease in No of employees
1	Arab National	2005	It was the same.	Increase of employee by 1
2	Bank Al Bilad	2006	15% decline in operation cost	10 employees increased
3	Saudi Investment	2006	Decline in operating cost	Not many people were hired
4	Al Rajhi Bank	2006	No decline	Decrease by 4 employees
5	Riyadh Bank	2006	It was the same	Increase in both the banking system
6	Bank Al Jazira	2007	Decline in operating cost	increase in E banking sector
7	National Commercial Bank	2005	Not that much declined	Increase in IT staff.

*the reason why there was either a decrease in the Operating cost or it remained the same are explained below for each bank.

Arab National Bank:

There Operating cost remained the same, because people were less using the E banking as they only had one E banking Staff to control all the activities, so that resulted in lower number of customers and the customers preferred to use the commercial way.

Bank Al Bilad:

They had 15% decrease in their operating cost, because they are providing E banking services, they were attracting many customers, which tend to use E banking more than commercial banking, and they hired 10 Internet Banking users as well, to help their customers.

Saudi Investment Bank:

They also had a decline, the reason they provided was that this E banking is a new trend and many customers are using it, so that they can access their account easily from their homes, so that's why there has been a decrease in their Operating cost.

Al Rajhi Bank:

Al Rajhi, being the oldest bank in terms of using internet banking system in the kingdom, they had very little decline in the operating cost, because they were actually focusing on the betterment and how they can attract customers to adopt this system which will benefit the bank in the coming years, as internet banking is gaining popularity fast.

Riyadh Bank:

They had no decline in their operating cost, because the technology is still new and it will take time for people to actually start using it on regular basis, and many of their customers were actually involved in coming to the branch for their transactions.

National Commercial Bank:

They also explained that because internet banking being still not that much popular in the kingdom, so that was the reason that they did not had too much decline in the operating cost. In addition that they had to increase there IT (information technology) staff, so that they can perfect the internet banking system.

Al jazira Bank:

Bank al Jazira had decline in their operating system, they explained that this was because, if a customer comes up to the branch for the transaction he had to pay like (SR 20) for each transaction, whereas while using internet for transaction they only had to pay the fees for the internet which is like (SR 2), so because of these things there was a decrease in the banks operating cost.

3.3 Improvement's In Banking Sector

Following are the improvements that can be made to the internet banking system, in order to make it more usable by the customers, and help in increasing the banks in their profitability.

Internet Banking Services:

- By guaranteeing the customers an excellence web experience. The website of the bank will be much useful for the customer, as everything will be crystal clear for them, and it will be easy to access.
- Expanding the banking functionalities. Providing all service from transaction to paying bills, this will save customers time and increase the customers of the bank.
- Providing first class Security levels to prolong customer confidence by Analyzing the security Methods, Designing such security rules to maintain it. Making partnerships with top security solution providers to be in the forefront.
- Making E banking a driving module of an incorporated channel strategy.
- Marketing E banking in such a way that it becomes End to end sales channel. Customer buying single or multiple products, or doing multi banking task with only one click.
- Exploiting Customers right channeling opportunities. Identifying best target of customer interest and work more to improve it.
- Develop E banking to increase advice Support to customers. Making the access more and more simple and easy. Employ such people who may tend to help the customers in how to access specific issues.

- Guarantee customers a stream lined cross channel interaction._This will be a unique way to interact with the clients online._Making such services online 24 hours a day, so that if the customer has any issue or problem he might get help immediately.

Commercial Banking Services :

Following approaches can be used to make the Commercial sector more and better, so that It can attract more customers and increase in profitability.

- Attracting customers by providing them with new and improved services.
- Appointing Employees who can explain the existing and the new products to the customer in a much simpler way, so that they might understand it and might even use the new service, as some of the banks services are too complicated for the common customer to understand.
- Making better advertisement in public places, in order to get attentiveness of the customers.
- Since Saudi Arabia consists of multinational people, so in order to avoid the language barrier each bank should have some specific employees having strong command on both (English and Arabic) language.
- In order to make the banks less crowded, each bank should have a help desk, the help desk will have all the solution of problems that the customer will have. This way the bank branches won't get to much crowded.

Chapter 4

METHODOLOGY

4.1 Data:

In this practical study, we will be using data of 7 Retails Banks of Saudi Arabia, to examine the profitability index. The time period used for this study is from 2005-2011. Most of the banks started using Internet banking after 2002. We got the dataset from the Annual Report of each bank by looking at their Balance Sheet and the income Statement, which was available on official website of each bank. We calculated some of the ratio on Microsoft Excel and implemented them to E-views in order to determine the profitability of selected Saudi Banks.

Table 4.1 (Official Websites of bank)

NO	NAME OF BANKS	OFFICIAL WEBSITE
1	NATIONAL COMMERCIAL BANK	www.alahli.com
2	AL RAJHI BANK	www.alrajhibank.com.sa
3	RIYADH BANK	www.riyadbank.com
4	SAUDI INVESTMENT BANK	www.saib.com.sa
5	BANK AL BILAD	www.bankalbilad.com
6	ARAB NATIONAL BANK	www.anb.com.sa
7	BANK AL JAZIRA	www.baj.com.sa

*Dataset was driven from the websites of each bank.

4.2 Variables

Table 4.2 (Variables and How to Measure them)

	Variables	Measures	Notation
Dependent Variables	Profitability	Return on Assets(ROA)= Net Income/Total Assets	ROA
		Return on Equity(ROE)= Net Income/Total Equity	ROE
Independent Variables Bank-Specific	Capital Adequacy	Capital equity/total Asset	CAR
	Asset Quality	Total Loans and Receivables/Total Assets	ASQ
	Management	Operating expense /Operating income	MGMT
	Liquidity	Cash/total assets	LQR
	Bank-size	Natural Logarithm of Total Assets	LSIZE

4.2.1 Dependent Variable:

A dependent variable is actually reliant on other variables. Since the model that we will be using here is based on Profitability of banks, so the main dependent ratios for banks Profitability are Return on Assets (ROA) and Return on Equity (ROE).

Return on Asset (ROA):

Return on Asset (ROA) is a financial ratio that is used to indicate that how profitable a bank's assets are in generating more earning. It is calculated by dividing Net Income by Total Assets. ROA are used by banks to gauge their performance, and are usually denoted in percentage.

Return On Equity (ROE)

Return on Equity (ROE) is a financial ratio that shows the amount of Net Income returned as a percentage of shareholders equity, ROE measures the Banking profitability by showing that how much a bank gained profit with the money that the shareholders invested. It is calculated by dividing Net income by Shareholders Equity. The higher the ratio is, the more successful the bank can be.

4.2.2 Independent Variables:

Independent variable is a variable that isn't changed by the other variables and it is mainly used to verify the dependent variable.

Capital Adequacy:

A measure of the financial strength of a bank or securities firm. It actually ensures that banks have sufficient capital all the time available so that they keep themselves out of difficulty. It is calculated as a ratio of its Capital to Total Asset, the higher the ratio is, the higher the chance for banks to gain profitability.

Asset Quality:

This term is usually used by Banks to measure the risk of its assets, in order to measure Asset Quality non performing loans can be analyzed, but in this study we will take Total loans. It is calculated as Total loans and Advances over Total Assets. If the total Asset of the bank is higher, and the total loans are lower than the Asset quality will be lower which will result in having a profitable impact on the banks.

Management Quality:

Management activities and functions play a vital role in achieving flourishing operations for the bank. The ratio that is used to value the Quality Management is Operating expense to Operating income. The lower the Operating expense the better in terms of profit for the bank.

Liquidity:

The liquidity of the bank is calculated as Cash over total assets. The liquidity ratios are anticipated to be either positively or negatively effective with the profitability of the banks. The higher the ratio the more the bank is in profitable, the lower the ratio the more the chances of it to be in unprofitable position.

Bank Size:

Generally the bank size is measured by its Total Assets. The larger the Assets the better the banks is considered to be in profitable situation.

Log Size:

The logarithm is of the total bank size. Since the total Assets are all in numbers, thus logarithm of the bank size is used to run the regression analysis.

Dummy Variable

In Regression Analysis, dummy variable (which is also referred to as the indicator variable). In this study 0 & 1 are used as dummy variable to find out for the years, in which Internet was actually started and when they started to provide different services to their customers. So 1 defines the years in which the banks were using internet and 0 defines the years in which there was no internet service.

4.3 Methodology:

The Econometric form of the Panel Regression is:

$$Y_i = \beta_0 + \beta X_i + \epsilon_t$$

Where:

Y_i is the dependent variable of the function

β_0 is the intercept of model

X_i represents the independent variables in the corresponding time (i)

ϵ_t represents error term

The following Equations are the multiple regression analysis, In (Model 1) Dependent Variable is Return on Asset (ROA) and Independent Variables are CAR (capital Adequacy), ASQ (Asset quality), MGMT (Management), LnSize (logarithm Size of the bank) and Dummy (Dummy is the internet variable, that was defined using 1& 0, 0 used for the years banks didn't had internet banking service, where as 1 is used for the years the bank were operating with internet banking.

In (Model 2) Dependent variable is ROE (Return on Equity) and independent variables are CAR (capital Adequacy), ASQ (Asset Quality), MGMT (Management), LnSize (logarithm size of the Banks) and Dummy (Internet variable)

We will conduct regression analysis by using the E-views Software to estimate our equation. Two Dependent Variables used in this linear least square, and other variables are considered as independent ones and demonstrated below in the models.

In this study the following models are as follow:

$$Y = f(\text{CAR}, \text{ASQ}, \text{MGMT}, \text{LQR}, \text{LSIZE}, \text{MGMT}, \text{DUMMY})$$

Model 1:

$$\text{ROA} = \beta_0 + \beta_1(\text{CAR}) + \beta_2(\text{ASQ}) + \beta_3(\text{LSIZE}) + \beta_4(\text{MGMT}) + \beta_5(\text{DUMMY}) + \epsilon_t$$

Model 2:

$$\text{ROE} = \beta_0 + \beta_1(\text{CAR}) + \beta_2(\text{ASQ}) + \beta_3(\text{LSIZE}) + \beta_4(\text{MGMT}) + \beta_5(\text{DUMMY}) + \epsilon_t$$

Chapter 5

EMPIRICAL RESULTS

Panel unit root tests have been employed to the variables, in order to check whether the data (variables) are stationary or not. According to the Methodology done by Levin, Lei & Chu (LLC) & Im Pesaran Shin (IPS) the data reject the null hypothesis and accept the Alternative hypothesis at α (Alpha) 0.01,0.05,0.10.

H0: series are not stationary (null hypothesis)

H1: series are stationary (Alternative hypothesis)

CAR(Capital Adequacy) is stationary in all three models, and hence we reject null hypothesis and accept alternative hypothesis. **ASQ** (Asset Quality) is stationary in two models and hence we accept the alternative hypothesis. **MGMT** (Management) is stationary in only one model so we accept the alternative hypothesis. **LQR** (Liquidity Ratio) and **LNSIZE** (log Size of the banks) both are stationary in two models, so they accept alternative hypothesis. **ROA** (return on Assets), **ROE** (return on equity) both are stationary at all three models, therefore accepting the alternative hypothesis.

Table 5.1 (Panel Unit Root Tests)

<u>Variables</u>	<u>Levels</u>		
	<u>LLC</u>	<u>IPS</u>	<u>M-W</u>
<u>CAR</u>			
τ_T	-25.03*	-1.634**	59.46*
τ_μ	-8.99*	-1.895**	34.01*
τ	-2.85*	-	32.65*
<u>ASQ</u>			
τ_T	-11.10*	-0.82	35.60*
τ_μ	-6.14*	-1.72**	21.48**
τ	1.16	-	3.56
<u>MGMT</u>			
τ_T	1.037	0.777	11.03
τ_μ	-2.646*	-0.134	16.40
τ	1.300	-	5.429

Panel Unit Root Test (Continue)

LQR

τ_T	-5.77*	0.051	26.27**
τ_μ	-3.546*	-0.449	21.20***
τ	1.194	-	4.22

LNSIZE

τ_T	-7.71*	0.146	24.00**
τ_μ	-4.75*	-0.341	31.68*
τ	6.983	-	0.244

ROA

τ_T	8.88*	-0.202	27.59**
τ_μ	-6.897*	-1.636*	34.164*
τ	-4.063*	-	55.38*

ROE

τ_T	-2.93*	0.508	9.970
τ_μ	-4.784*	-0.922	29.65*
τ	-4.543*	-	55.49*

Panel Unit Root Test (Continue)

Note:

CAR represents Capital Adequacy Ratio; ASQ is Asset Quality; MGMT represents Management Quality; LQR represents liquidity Ratio; lnSize represents the Logarithm of bank size; ROA represents the Return on Assets and ROE represents the Return on Equity. τ_T represents the most general model with a drift and trend; τ_μ is the model with a drift and without trend; τ is the most restricted model without a drift and trend. Optimum lag lengths are selected based on Schwartz Criterion. * ** and *** denotes rejection of the null hypothesis at the 1% 5% and 10% level. Tests for unit roots have been carried out in E-VIEWS 6.0.

5.2 Regression Analysis for Model 1

Dependent Variable: ROA
 Method: Panel Least Squares
 Date: 04/09/12 Time: 15:27
 Sample: 2005 2011
 Periods included: 7
 Cross-sections included: 5
 Total panel (unbalanced) observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.114822	0.027716	4.142829	0.0003
CAR	0.020929	0.034733	0.602568	0.5520
ASQ	-0.029394	0.013149	-2.235384	0.0342
MGMT	-0.056259	0.004875	-11.53912	0.0000
LNSIZE	-0.002782	0.001300	-2.140077	0.0419
DUMMY	-3.42E-05	0.003372	-0.010130	0.9920
R-squared	0.869844	Mean dependent var	0.020116	
Adjusted R-squared	0.844814	S.D. dependent var	0.011192	
S.E. of regression	0.004409	Akaike info criterion	-7.843047	
Sum squared resid	0.000505	Schwarz criterion	-7.568222	
Log likelihood	131.4888	Hannan-Quinn criter.	-7.751950	
F-statistic	34.75204	Durbin-Watson stat	2.142787	
Prob(F-statistic)	0.000000			

MODEL:

$$ROA = \beta_0 + \beta_1(CAR) + \beta_2(ASQ) + \beta_3(LSIZE) + \beta_4(MGMT) + \beta_5(DUMMY)$$

$$ROA = 0.1148 + 0.0209(CAR) - 0.0293(ASQ) - 0.00278(LNSIZE) - 0.0562(MGMT) - 3.42(DUMMY)$$

The above table shows that if there is no outcome of the following variables (CAR, ASQ, LSIZE, MGMT, DUMMY) on ROA, then ROA will be 0.114%. (ASQ,

LNSIZE, MGMT) are significant variables, whereas (CAR, DUMMY) are insignificant.

If there's an increase of 1% in CAR then ROA will increase by 0.11% having a positive effect on the profitability ROA, the reason behind this was because of having sufficient capital. If there's an increase in ASQ by 1% then ROA will decrease by 0.0293% the decrease is an effect of having low risk in the Asset Quality, which means that the loans they are providing is far more than their total Assets. If there's an increase in MGMT by 1% then ROA will decrease by 0.056% this effect can be defined by the raise in the expenses compared to the income, especially the cost related with adoption of internet banking for a bank, they need to the more the expenses the more there is decrease in the profitability. If there is an increase in LNSIZE by 1% the ROA will decrease by -0.002%, this decrease can be because the banks may not have massive total Assets, and it may also be because of the bank not using their sources efficiently, which has led a decrease in the ROA. And lastly if Dummy Variable (internet) increases by 1% then there's a decrease of -3.42 in ROA, also the internet variable is not significant, so this means that there is no effect of Dummy Variable (internet) on the profitability, this insignificant effect may also have been because it has only been 5 years for the banks to use internet banking, so in such a short period of time, it hasn't been so profitable for the banks.

R Square founded from the above table concludes that almost about 0.87% of the changes in ROA can be explained by the independent variables.

5.3 Regression Analysis for Model 2

Dependent Variable: ROE
 Method: Panel Least Squares
 Date: 04/09/12 Time: 15:29
 Sample: 2005 2011
 Periods included: 7
 Cross-sections included: 5
 Total panel (unbalanced) observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.023257	0.203134	5.037353	0.0000
CAR	-1.086933	0.254562	-4.269816	0.0002
ASQ	-0.138725	0.096375	-1.439424	0.1620
LNSIZE	-0.023246	0.009528	-2.439722	0.0218
MGMT	-0.416750	0.035733	-11.66278	0.0000
DUMMY	0.006163	0.024714	0.249372	0.8050
R-squared	0.884440	Mean dependent var	0.150775	
Adjusted R-squared	0.862216	S.D. dependent var	0.087053	
S.E. of regression	0.032313	Akaike info criterion	-3.859319	
Sum squared resid	0.027148	Schwarz criterion	-3.584493	
Log likelihood	67.74910	Hannan-Quinn criter.	-3.768222	
F-statistic	39.79811	Durbin-Watson stat	1.622976	
Prob(F-statistic)	0.000000			

MODEL

$$\text{ROE} = \beta_0 + \beta_1(\text{CAR}) + \beta_2(\text{ASQ}) + \beta_3(\text{LSIZE}) + \beta_4(\text{MGMT}) + \beta_5(\text{DUMMY})$$

$$\text{ROE} = 1.023 - 1.0869(\text{CAR}) - 0.1387(\text{ASQ}) - 0.0232(\text{LSIZE}) - 0.4167(\text{MGMT}) + 0.1509(\text{DUMMY})$$

From the above table, we can analyse this, that if there is no effect of the following variables (CAR, ASQ, LSIZE, MGMT, DUMMY) on ROE than the level

of ROE will be -1.02%. The variables which are significant are (CAR, LNSIZE, MGMT) and (ASQ, DUMMY) are insignificant.

If there's an increase of 1% in CAR, then ROE will decrease by -1.08% hence having an elastic effect on the dummy variable, CAR has a negative effect on the ROE Profitability because of insufficient funds available, which may not lead into a profitable position. If ASQ increases by 1% then ROE will decrease by -0.138% having an inelastic effect on the dummy variable. The ASQ may have a negative impact on the profitability because of having a higher ratio of loans. If LSIZE increases by 1% then ROE will decrease by -0.023% therefore having an inelastic effect on the dummy variable, this effect may occur because of lower Assets which tends to lower the profitability of the bank. If MGMT tends to increase by 1% then ROE will decrease by -0.416% having an inelastic effect on the Dummy Variable, this result may be because of having a higher ratio of expenses which may lead to a decrease in the profitability. If there's a boost of 1% in the Dummy variable, then ROE will increase by 0.006%. This illustrates that the Dummy Variable (internet usage) has a positive impact on the ROE, but since it's insignificant it proves that Internet usage has a very low impact on the ROE profitability.

R Square can also be found from the above table. Concluding that almost about 0.884% of the changes in ROE can be explained by the independent variables such as (CAR, ASQ, LNSIZE, MGMT, DUMMY).

Chapter 6

CONCLUSION & SUGGESTION

The main intend of this paper was to find out the profitability of the banks while using the internet service in the Saudi Arabia, since the usage of internet banking has become a popular way of doing transactions, so to find out the result we will use the CAMEL approach and two main variables to calculate the profitability ROA, ROE. The result was conducted for the period of 7 years from 2005-2011, for a total number of 7 banks. All of the banks that were used were giving both services (commercial and E banking)

Comparable studies was also done by Al Smadi (2010) on Jordanian banks for a number of 15 banks and period of 10 years, the outcome that was generated from this study was that there was a negative effect in the bank performance while using E- banking, as the customers preferred to use the traditional ways of transactions, which showed that the internet banking having the higher revenues than the normal service and it might take time for the internet banking to show a positive result in the profitability. Another study by Sana (2011) on the impact of internet on Pakistani banks, as the banks of the current era are transitioning from manual means to the electronic means, there method of finding the result was a survey with the bank managers, the conclusion that they came up with that the internet services had a considerable impact on the profitability of the banks. Malhotra (2009) also

concluded on the current internet banking system in India and how it affected the banking performance, her study included a massive number of 88 banks, from a time period of 8 years, she concluded that there was no such relationship between banks profitability from internet service and also that in India the internet banking service has no encouraging effect on the banks profitability, one of the reasons was that adoption of internet was a bit costly and they needed to increase their employee. Onay (2008) did a similar study for the country of Turkey, to find out the effects of internet banking on the financial institutes of the banks, he had used the data of about 13 banks for 10 years (1996-2005), he wanted to find out the effect of internet banking on the following determinants ROA, and ROE. His result showed that the internet banking sector had only positive result in the Return of Equity (ROE) only at the lag of two years, where as it showed that it was negative on the first year, he concluded that future studies may have a more affirmative result.

The outcome of this study that we concluded two different models. In the first model Capital Adequacy (CAR) showed us having a positive effect on ROA, which has been proven by the recent studies in relation to the Global crises. whereas other variables didn't had a lot of positive effect, even the internet Variable (Dummy) was insignificant and also had a negative effect on ROA, In the second model we used ROE as the dependent variable, there was a positive effect of the internet variable (dummy) per since it was insignificant so we can't make any conclusion about it, since we tested for both models and the result was insignificant.

Since previous studies also showed that there have been many negative effects of internet banking on the profitability for many countries, So this has actually showed us that the internet banking service is still new in the Saudi Arabia,

and will may need time to actually boost up the financial statements with positive results, it has only been 5 years for the banks to actually know about this service or this might also be because of either there is lack of data. If similar studies are done in the future with more years it might give us more accurate answers.

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