

**The Determinants of the Performance of Commercial
Banks Industry
Evidence of Listed Commercial Banks at ADX**

المحددات التي تؤثر على اداء صناعة المصارف التجارية – المصارف التجارية
المدرجة في سوق ابو ظبي المالي

by

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Dedication

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Abstract

The current study objects for determining the factors that are probably influencing the performance of listed commercial banks at Abu Dhabi Securities Exchange (ADX). To achieve this objective, the data covering the period 2008-2017, of 8 listed commercial banks among 12 listed bank banks At ADX. The study investigated 5 internal-based possible determinants, and three potential external determinants of commercial banks performance. Among the 12 listed banks at ADX, 2 commercial banks had excluded because its data is not available in complete along the period of the study, and another 2 Islamic banks had also excluded because the nature of operations in these banks is completely different, and therefore the financial reporting of this type of banks is also different, where this restrict the analysis of data.

As a result of the related literature and prior researches consideration, 9 hypotheses had been developed and scientifically tested. In addition to simple linear regression method that used in hypotheses testing, correlation and some descriptive statistics were also applied in the analysis of data. The findings demonstrate that except inflation rate and GDP, all other determinants have a significant effect on bank performance. In other words, it demonstrates that all internal determinants that had been taken into account, found affecting commercial bank performance, and two of external determinants have no effect. The eight determinants of commercial banks that the study takes into consideration, include, bank loans, bank size, capital adequacy, management efficiency, bank liquidity, inflation rate, GDP, and Tobin's Q. Five of these determinants are classified by some authors as in internal including, bank loans, bank size, capital adequacy, management efficiency, and bank liquidity, while inflation rate, GDP, and Tobin's Q, are classified as external. The study recommends managements of commercial banks to give more attention to the assets used in these banks, and to focus on increasing the market value of commercial banks. In addition, managements of commercial banks are recommended to give more attention to the way that liquid assets and credit risk are managed.

نبذة مختصرة عن البحث

هذه الرسالة تهدف الى تحديد العوامل التي من المحتمل انها قد تؤثر على اداء البنوك التجارية المدرجة في سوق ابو ظبي المالي ولتحقيق هذه الغاية سيتم دراسة المعطيات المالية والتحليلية لثمانية مصارف مدرجة في سوق ابو ظبي المالي من أصل 12 مصرفا تجاريا مدرجا وهذا البحث يغطي البيانات المالية للسنوات المالية 2008 – 2017.

الدراسة بحثت 5 عوامل داخلية قد تؤثر على اداء المصارف التجارية بالإضافة الى 3 عوامل خارجية قد تؤثر على نفس الغرض وهنا تم استثناء مصرفين تجاريين مدرجين بسبب قلة المعلومات المتوفرة كما انه تم استثناء مصرفيين اسلاميين بسبب اختلاف طبيعة العمليات بشكل كلي عن المصارف التجارية وبالتالي فان التقارير المالية مختلفة ايضا مما قد يؤثر على تحليل البيانات.

تم الرجوع الى العديد من الدراسات والبحوث السابقة المتعلقة بنفس الموضوع وهنا تم اختبار 9 فرضيات واستخدام طريقة الانحدار الخطي البسيط في فحص الفرضيات وايجاد العلاقة والتحليل المعياري بين هذه العوامل ومدى تأثيرها على الفرضيات، وجدت الدراسة بأن جميع العوامل لها تأثير مهم على أداء المصارف التجارية باستثناء عاملي معدل التضخم والنتاج القومي الاجمالي وبتعبير اخر فان كل العوامل الداخلية لها تأثير جوهري على أداء المصارف التجارية وأن هناك عاملين من أصل 3 عوامل خارجية ليس لها أي تأثير وبالتالي فان هناك ثمانية محددات تم أخذها بعين الاعتبار لاعداد هذه الدراسة يتضمن مجموع القروض الممنوحة، حجم المصرف، الملاءة المالية للمصرف، الكفاءة الادارية، السيولة، معدل التضخم في دولة الامارات العربية المتحدة، الناتج القومي الاجمالي بالإضافة الى معيار

Tobin's Q

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Chapter One

Introduction

1.1 Background of the study

1.2 Theoretical Framework

1.3 Problem Statement

1.4 Study Importance

1.5 Study Objectives

1.6 Nature and Limitations

1.1 Background of the Study

Commercial banking industry is considered nowadays as the most necessary and important industry in modern societies because of the important role, the institutions of this industry play in economics and different aspects of people life. The most common exercised activity of commercial banks these days, is to receive, keep, and invest the excess cash of individuals and institutions, and lending these accumulated amounts of cash to individuals, and institutions that have cash shortage. Through the practice of deposits acceptance and lending activities, commercial banks strongly participate in job creation, production, and economic growth. Therefore, commercial banks simplify the activities of other business activities of different industries. The activities of commercial banks is used as one among the instruments of the monetary policy, and it plays a role in money creation. The activities that traditionally provided by commercial banks became necessary to each human being these days, whatever the profession he exercises or the position he occupies. People can't imagine their life will be without the existence of commercial banks. Because of that, the author finds that banks attempt to increase its branches and offices, taking into consideration the cost/revenue constraint.

Commercial banks should follow the laws and regulations issued by the concerned government and central bank, and their banks are required to apply the rules and standards issued by interested international institutions. The equity capital of commercial banks is provided by owners or shareholders, where these owners and shareholders expect return on their money invested in banks. To achieve return on invested capital by owners, commercial banks should be profitable, and should improve its performance. The commercial bank performance should be measured and evaluated periodically, where based on the results of performance measurement, managements of banks can act to avoid any weaknesses, and thereafter achieve profits to its owners. The current study concentrates on the measurement of performance and attempts to determine whether specific factors are influencing this performance.

Considering the activities that are normally exercised by commercial banks, this role can be summarized in accepting deposits and making loans. Commercial banks accept deposits from those who have extra or surplus amounts of cash, and lend these amounts of cash to those with a need for cash, where producing entities borrow the highest portion of these deposited amounts of cash at banks. The borrowed amounts of cash by producers of goods and services are invested in more production of goods and services.

1.2 Theoretical Framework

Based on Du Pont model of firms' performance, the Return on Equity (ROE) can be broken down to be the product of Return on Assets (ROA), and equity multipliers, through dividing total assets by total equity (Okinye, 2012). In addition, and as a response to Sharpe (1964), single factor model, the Capital Asset Pricing Model (CAPM), Ross (1976) and Roll (1975), suggested a multifactor model called Arbitrage Pricing Theory (APT) model, where this model states that the expected return on an investment depends on how that investment reacts to a firm-specific factors and macro-economic factors. As a result, the current study takes into account internal factors such as bank liquidity, bank size, and capital adequacy, and external factors, where external factors include some macro-economic factors including, the rate of inflation and the Gross Domestic Product (GDP).

To a large degree, the economic growth of countries is strongly driven by commercial banks' efficiency (Rashid, 2010). Considering the nature of commercial banking industry, it is apparent that commercial banks play the most important role in different components of the financial system of any country. Actually, five components are available for the financial system of any country, including financial markets, financial institutions, financial instruments, and money. When the role and nature of work of each of these components is carefully considered, it is clearly noticed that commercial banks play the most important role in each of these components. In addition to the important role that banks play in economic growth, this

industry has a control on money supply, and affects the producing units in the country (Brigham and Houston, 2011). Commercial banking industry also plays also a role in the monetary policy of countries. Moreover, banks exercise a vital role in allocating economic resources in most countries, and therefore, and can promote more investments and attract foreign investments (Ongore and Kusa, 2013).

In details, performance of commercial banks is the dependent variable of the study, but several independent variables are investigated herewith the study. Independent variables are classified into internal and external variables. Exactly, the study investigates five different internal factors including, credit risk, bank size, bank liquidity, capital adequacy, and management efficiency, while it investigates Tobin's Q, inflation rate, and GDP, as external independent factors. In occasion, inflation rate and GDP are classified as macro-economic factors.

1.3 Problem Statement

During the last few years ago, several banks merged together, where merging occurs among business organizations, when the profitability of some of these is low, so these businesses go for merging with other similar organizations to protect itself from bankruptcy as a result of continuous weak performance. In other words, these processes of merge, came as a result of weak performance of some included commercial banks within the industry. In addition, because the weak performance of producing entities, depends actually on banks performance of countries, and because recently many firms within the United Arab Firms failed, the study comes to find solutions for this type of weak performance of other business organization than the commercial banks. The study investigates the financial performance of the listed commercial banks at Abu Dhabi Securities Exchange (ADX); and it is an actual attempt to determine the whether some selected variables affect the financial performance of this group

of banks. Based on the above discussion, the following questions may present the problem of the study in more appropriate form.

1. How the listed commercial banks at ADX were performing along the last 10 years?
2. What are the most important determinants of performance of listed commercial banks at ADX? And how each of these proposed determinants affect the performance of banks?
3. What is the form or direction of effect of each factor that is found affecting the performance of the commercial banking industry of Abu Dhabi?

The study attempts to find the scientific answer for each of the above-mentioned questions, where the entire group of questions form the problem statement.

1.4 Study Importance

The study is important since it attempts to identify the most important determinants of commercial banks performance. When these determinants are clearly identified, correcting actions can be taken to protect this industry from failure or weak performance, especially because when the weak performance continues for a long period, it may lead to bankruptcy and failure. When the determinants of performance of commercial banks, are identified, several actions can be taken, and new processes can be adopted to prevent this weak performance from occurring, and to improve the different aspects of performance. Weak performance of commercial banks can be easily noticed. When a reduction of number of customers occurs, this means that there is something wrong taking place in the bank and needs to be corrected. In addition, when deposits decline in its amounts, it is considered an indicator for weak performance. Moreover, when the volume of credit granted to customers, this will lead to a reduction in the profitability.

Measuring the performance of commercial banks is of high importance. Generally, when a bank profitability is high or reasonable and acceptable, this refers to strong performance, but in opposite, when the profitability on one institution is low, or the bank incurs

a loss, this means that the bank is suffering from weak performance. In addition to profitability, banks with strong financial position, can be described as well performing, but in opposite, when its financial position is low, that bank suffers from low performance. As a result of performance measurement of commercial banks, the strengths and weaknesses can be determined, and thereafter, actions can be taken to eliminate the weaknesses or to reduce its effects or support these institutions with more resources.

Since the study measures the performance of commercial banks and attempts to identify the most important determinates of its performance, the study can be considered important. When the determinants of bank performance are determined carefully, the management can maintain the situation of good performance, because it will be aware of all of these determinants, and more attention can be given to keep these determinants under the focus of management, and banks management can reduce the probability of weak performance and increase the probability of high profitability and strong performance. In addition, several actions can be taken to encounter any problem that the bank face in future. In brief, the findings of the study enhances the managements' understanding of banks performance, and can provide banks' managements with possible procedures and policies to improve the performance. Understanding the performance of commercial banking industry is also beneficial for shareholders and other stakeholders, where shareholders will be more eligible to take good investment decisions.

1.5 Study Objectives

The objectives of the study are different. These objectives can be summarized as follows:

1. To evaluate the financial performance of listed commercial banks at ADX, and to show the strengths and weakness of this performance.

2. To identify the most important determinants of performance of listed commercial banks at ADX.
3. To show the nature and form of each determinant of the listed commercial banks at ADX; and explain the results of that direction of effect.
4. To highlight the direction of each external macroeconomic determinant of commercial bank performance.
5. To illustrate the relation or association among the external determinants and the correlation between each of these external macroeconomic determinant and banks' performance.
6. To add more literature to the subject of commercial banks performance.

1.6 Nature and Limitations

There are several issues that distinguish the study from other related prior studies all over the world. While some prior researches investigated the internal determinants, and other took into consideration the external determinants, the current study measures and evaluates the performance of commercial banks, then it attempts to determine the different determinants, whether these determinants are internal or external, and whether external factors, are market or economic-based determinants. Moreover, the methodology of the current study seems different in some of its details, and in the statistical methods that are followed in analyzing and testing the hypotheses of the study. Actually, this study attempts to investigate the different aspects of commercial banks.

Limitations of the study are clear, where longer time is needed to investigate the different aspects of banks performance, but available time for the accomplishment of the study may see too much limited. The economic-based indicators may be difficult to collect some rates along a greater number of years. No local standard is available to compare the performance of commercial banks, worldwide standard will be used. Published data regarding the performance of banks are available and easy to be gathered, but sometimes there is a

difference in the disclosure procedures and information from year to year, despite that actions will be taken to overcome all of these differences.

The remaining sections of the current study are structured to be as follows. Section 2 reports the related literature; and summarizes the related previously accomplished studies. The hypotheses that had been developed as a result of literature review and prior researches, is shown in section 3, while methodology followed by the author is shown in the 4th section. The fifth Section in the study shows the analysis of collected data and demonstrates the results of the analysis, whereas, the findings and recommendations are available in section 6.

Chapter 2

Literature Review and Prior Researches

2.1 Commercial Banking Industry, An Overview

2.2 Performance Concept and Measurement

2.3 Performance Determinants

2.4 Theories of Commercial Banks' Performance

2.5 Prior Researches

2.1 The Commercial Banking Industry of UAE, an Overview

Banking operations and activities started in UAE since 946 when the British Bank of Middle East had opened its first branch in Dubai, UAE, where this bank was called at that time, Imperial Bank of Iran, as a result of oil discoveries and the strong relations between India and Gulf States at that time. Thereafter, and definitely, in 1962, three additional branches of foreign banks had opened its operations, such as East & Chartered Bank, Ottoman Bank, which later had merged with Grindlays In 1963. The first domestic bank had opened in Dubai, where that bank was called Dubai Bank with share with the National Bank of Kuwait. Then several domestic banks had been established (Al Bayan Newspaper, 2006).

By the end of 2016, 23 domestic banks and 28 foreign banks were working on the land of UAE, with a total asset of \$ 62 billion. In 2016, the commercial banking industry of UAE, had 930 branches, around the different emirates and cities. As of other commercial banking industry of other countries, commercial banking in UAE accept deposits from those who have extra amounts of cash, and lend these amounts to individual and institutional borrowers. Therefore, on October 2016, the total amounts of loans that lent by the banks of UAE totaled AED 1,463 billion. In 2017, two local banks were merged, where one of them was listed at ADX, where the other was listed in Dubai Stock Exchange. This large amount of loan demonstrates the role of commercial banking industry in investment, production, and therefore, in economic growth, despite that personal loans constituted about 30% of total loans (NBAD, 2016).

Deposits received by commercial banks of UAE reached AED 1,508 billion, which means that this industry plays a vital role in investing the cash exceeds the needs of depositors. The analysis showed that the growth rate of commercial banks assets is faster than the growth of GDP in UAE. Among the 23 local commercial banks of UAE, 12 banks are listed at ADX, while the rest of this number of banks are listed at Dubai Securities Exchange (NBAD, 2016).

Based on the regulations of the Central Bank of UAE, commercial banks are allowed to grant up to 20 times of the salary of the personal borrowers, and payment to be done by personal borrowers through a maximum of 48 months. Loan to GDP had been passed 100%. In UAE, certificates of deposits, as a monetary policy instrument, are only issued by the Central bank and sold to commercial banks, to absorb the excess liquidity (NBAD, 2016).

2.2 Performance Concept and measurement

Measuring the financial performance of business organizations is necessary to be done, at least one time a year, but evaluation by the end of each shorter period, such as by end of each quarter, or monthly, is better to be done. When the financial performance is measured, correcting actions and decisions may be taken to overcome the problems that may hinder the bank towards achieving its objectives. Performance measures is the process of measuring the action's efficiency and effectiveness (Neely, Gregory, and Platts, 2005). Performance measures is also defined as "a process wherein the organization manages its performance to match its corporate and functional strategies and objectives (Bititci and McDevitt, 1997).

The approach of bank performance analysis is normally based on the analysis of financial ratios, where these ratios include profitability and liquidity (Hawaldar, et al, 2017). Multiple causes necessitate the assessment of commercial banks performance during a specific period of time, where this process of assessment intends to highlight the general efficiency and feasibility of strategic and important decisions taken by senior managers, as well as governance, to solve, or at least minimize, the future financial failure (Hajer and Anis, 2016). Hajer and Anis (2016), defined the Financial performance as "achieving the objectives that determined by the firm or bank within the determined time and costs through the usage of available resources.

Good performance of commercial banks means high profitability, where a bank that achieved high profits, its performance can be considered good, despite that there are some

differences between performance and profitability. Despite of slight differences between financial performance and profitability of business entities, but it is found that high profitability is associated with good performance, or good performance leads to high profitability, and weak performance will not lead to profits, but mostly leads to losses. Profitability can be measured based on income, assets or equity (Boolakay and Auhamud, 2015). Return on Assets (ROA) shows whether a bank is profitable based on profit relation to total assets (Hawaldar, et al, 2017). ROA is the most common measure of firms' profitability or performance, where some studies referred that Return on equity (ROE) and income can't be considered good measures of banks performance, because it is unreasonable to make comparisons between banks with different proportion of equity in its capital structure. In addition, ROE disregards most of the associated risks with high and financial leverage.

The financial performance of business organizations can be evaluated by using accounting-based measures or economic based measures. Accounting measures include different measures, as of Return on Assets (ROA), Return on Equity (ROE), Return on Investment (ROI), Earnings per Share (EPS), etc. ROA is the most common used accounting-based measures, especially where it is a relation of earnings to total assets used. In addition, Tobin's Q, as a market-based measure is used in assessing the performance of the listed commercial banks at ADX.

2.3 Performance Determinants

Commercial banks performance can be classified into internal, external, and macroeconomic determinants. To a large degree, managements of commercial banks can affect and control the internal determinants, whereas, these managements have no control over the external determinants. The current study takes into account the different kinds of the determinants of commercial banks performance. It takes into account some internal determinants, in addition to one market-based determinant that called, Tobin's Q, and two-

macroeconomic-based determinants. The two macroeconomic determinants that the study takes in to consideration are; the rate of inflation of UAE, in addition to Gross Domestic Product (GDP) of UAE. The study investigates these determinants using data of the listed commercial banks at ADX.

The current study takes into consideration 5 bank-based determinants (internal), two macroeconomic-based determinants, and one market-based determinants. The five internal determinants that the study takes into account are, bank size, bank capital adequacy, bank management efficiency, bank loans, and bank Liquidity, whereas the two macroeconomic-based determinants are the GDP, and inflation rate of UAE. In addition to bank-based and macroeconomic based determinants of the performance of commercial banking industry, Tobin's Q is the single market-based determinant that the study takes into consideration.

Some prior authors found that the size of a bank has a positive effect on banks performance, such as Guillen, et al, (2014), and Pasiouras et al, (2007), whereas other authors showed an opposite findings when they showed a negative impact of bank size on performance, as of Kasman (2010). Bank size is normally measured through the total assets of banks. The ratio of capital adequacy is a measure of bank stability of based on the relation of capital to risk capital, where it can be measured by comuting the ratio of risky assets and loan to assets (Hawaldar, et al, 2017).

Capital Adequacy is another determinant of commercial bank performance. The ratio of capital adequacy expresses the ratio between regulatory capital and the weighted risk of assets. This ratio also determines the ability of commercial banks and other similar organizations to sustain and overcome problems in their statements of financial position (Govori, 2013).

Liquidity of commercial banks seems as important as banks profitability. The tradeoff between liquidity risk and return can be demonstrated by observing that liquidity is reduced by

shifting short term securities to long term securities, but in this case liquidity risk is declined, and the rate will also decline. This indicates that high ratio of liquidity is accompanied with low profitability (Nyanga, 2009). Therefore, a balance between liquidity and profitability should be adopted, because low liquidity creates lending and investing problems, whereas high liquidity prohibits banks from opportunities of profits.

2.4 Theories of Commercial Bank's Performance

Three theories regarding the performance of commercial banks had been appeared, where each of which needs to be mentioned. The efficient structure theory states that the most efficient banks achieve the highest profits, which means that the bank should be efficient in order to achieve profits, and inefficient bank can't achieve enough profits. Two approaches are available underline the efficient structure theory. The first is called x-efficiency approach, which states that more efficient banks achieve higher profits because efficient banks incur less costs. The second is called the scale approach, where this approach states that focusing on economies of scale, where larger banks achieves less cost per one unit.

The portfolio balanced model of assets diversification is related to banks performance. Based on this model, the optimum holding of a particular asset in the portfolio is a function of that portfolio size, the vectors of return on all assets held at the portfolio, and the vectors of risks associated of ownership of all assets held at that portfolio. The portfolio balance model implies that the portfolio diversification and the composition of a commercial bank portfolio is the result of bank management (Nzongang and Atemnkeng, 2006).

The market power theory mentions that the performance of a bank is influenced by the structure of the entire banking industry. This theory involves two approaches. The first approach is called the structure-conduct performance, where this approach declares that the level of focus in the market of banks, grants rise to the potential market power by banks, and increases banks profitability. The second approach is called the relative market power, and

demonstrates that the market share of a particular bank affects the profitability of that bank, where based on this, large banks that provide more differentiated services can increase its profits and can also make influence in prices.

2.5 Prior Researches

The importance of commercial banking industries stimulated academics, authors, bankers, and other interested people, for evaluating the performance of this industry in different countries and societies. Some prior studies focused on some internal determinants of the performance of commercial banking industry, and some others investigated the external determinants, but few studies took into consideration both of the internal and external factors that may have an influence on commercial bank performance. Nevertheless, the study made a survey to the most important related researches to the assessment of banks performance and the determinants of that performance.

Banna, Ahmad, and Koh (2017), investigated the efficiency of commercial banks of Bangladesh based on banking data covering the period 2000-2013. Definitely, the study focused on the effect of the global financial crisis and other factors on the efficiency of commercial Banking industry of Bangladesh. Using the Data Envelopment Analysis (DEA) method, the study found that commercial banks of Bangladesh achieved the highest efficiency during 2001, while it demonstrated its least efficiency in 2010. In addition, the study showed that the global crisis along with, bank size, capital adequacy ratio, return on average equity, and the real interest rate have a significant effect on the efficiency of commercial banking industry of Bangladesh.

Widyastuti, Purwana, and Zulaihati (2017), investigated the determinants of commercial banking industry of Indonesia. It focused on the internal determinants of bank performance. It took into consideration, capital adequacy, credit risk, liquidity, net interest margin, and operating efficiency. Based on data of 33 banks of Indonesia along the period

2010-2015, and using the ordinary least squares method, the study showed that, except capital adequacy and credit risk, the other determinants were found significantly affecting the Indonesian commercial bank performance. In more details, the study found a significant impact bank liquidity, net interest margin, and operational efficiency on commercial banks performance.

Almekhlafi and others (2016), studied the relationship between credit risk and banks performance of Middle East and North Africa. This study came as a result of the slow growth of commercial banks working in this area of the world along the period 1970-1990, depending on a sample consisted of six commercial banks of Yemen. The authors focused on Yemen banks because these banks were dominated by the public sector banks, where underline this approach, the government interventions is clear in credit allocation, losses and liquidity, and non-performing loans. The study investigated the determinants of credit risk and its implications on bank performance of Yemen, where data covering the period 1998-2013 is used in the analysis and hypotheses testing. The study found that profitability of banks is affected by non-performing loans, and the nature of that effect is negative. The most important conclusion is that the study finds a causal relationship between non-performing loans and the performance of banks.

The commercial banking industry of Mexico was among the interests of Chavarin (2015). The purpose of the study was to identify the main determinants of the profitability of commercial banking industry of Mexico. The author collected a data covering the period 2007-2013 and belonging to 45 commercial banks of Mexico. Different methods of statistics had used in analyzing the data of the study, and in testing its hypotheses. The study discloses that commercial bank profitability can be maintained by the level of capital, commissions and the charging of fees, operating expenses control, and certain market entry barriers.

Yimka and others (2015), carried out a study to determine whether credit risk affects the financial performance of Nigeria. The authors of the study investigated the role that credit risk plays in value creation process among Nigerian commercial banks. Such antecedents are examined in the study including loan and advances loss provision, total loans and advances, nonperforming loans, and total assets on ROA and ROE. Data of 10 commercial banks along the period 2006-2010 was used in analysis. The study revealed that credit risk management has a significant effect on the financial performance of listed commercial banks at Nigeria Stock Exchange.

Boolakay and Aahummud, (2015), evaluated the Mauritius commercial banks. The main purpose of the study was to identify the most important determinants of commercial banks. To achieve the objectives of the study, data of 10 commercial banks that is covering the time-period 2016-2019, was gathered and later used in analysis, where the regression method is the statistical method that used in analyzing the data. The study refers that local Mauritius banks recorded high profits over years 2013, and 2014, despite the 2008's financial crisis. A number of financial ratios had been tested to determine which has more contribution in commercial bank profitability of Mauritania. The study shows that the major factors affecting the performance of commercial banks are; credit risk, liquidity, interest margin, market concentration, and inflation.

Mazadzi and Maseya (2015), analyzed the commercial banking industry of Zimbabwe. The goal of the study was to determine the factors affecting the Zimbabwean commercial bank's profitability. Three indicators for banks profitability were used in the study including, ROA, ROE, and net interest margin. A pooled ordinary square regression had been applied in data analysis using GRETL. Several factors of banks performance were taken into consideration including, management efficiency, diversification, deposit growth, credit risk, capital adequacy, liquidity, competition, inflation, GDP growth rate, and bank size. The study showed

that the Zimbabwean commercial banks performance is only influenced by management efficiency, diversification, credit risk, capital, and GDP growth.

Jaber (2014), investigated both of internal and external determinants of commercial banks of Jordan. The key purpose of this research was to check whether the profitability of Jordanian banks is influenced by some selected internal and external factors, based on data covering the period 2007-2012. Adequacy of capital, liquidity ratio, cost to income ratio, and bank size were among the internal factors that the study took into account, and several external factors were also the study took into consideration such as inflation rate, the real growth of GDP, in addition to other external factors. The study demonstrates that the internal determinants have a significant influence bank performance, whereas no effect had found of capital adequacy ratio nor the liquidity ratio when underline the transformed model, and size has no significant effect underline both models; transformed and untransformed. Regarding the external determinants, the study demonstrated that some of them found affecting bank performance underline both of transformed and the untransformed models.

The profitability of commercial banks of Pakistan is also had been investigated by Tariq and others (2014). The goal of the study was to identify the whether a selected determinants contribute in determining on the profits of Pakistanis commercial banks. With dependents on data for the period 2004-2016 of 17 commercial banks of Pakistan, the study shows that banks' capital strength has a significant influence on commercial banks performance, along with assets quality, bank size, inflation, and NIGI. In more details, while it shows that bank capital, assets quality, bank size has a positive effect on profitability of banks of Pakistan, while inflation rate and NIGI has a negative effect.

Mashamba (2014), carried out a study aiming to investigate the determinants of liquidity of commercial banks in Zimbabwe. The author justified this study by the persistent high liquidity of Zimbabwean commercial banks. Liquidity of commercial banks is measured

in this study through the relation of loans to total assets, despite that the author demonstrated that liquidity of commercial banks can be measured through the relation of liquid to total assets, liquid assets to deposits and short-term borrowings, and loans to deposits plus short-term borrowings. Depending on the ordinary least square method and Pearson's correlation, the study demonstrated that the non-performing loans are negatively associated with the Zimbabwean commercial banks. Moreover, the study showed that bank size and assets adequacy of banks, are positively related to the liquidity of those banks.

Shah and Jan (2014), investigated the performance of private banks of Pakistan. The required data of the study had been collected from Financial Statement Analysis of Financial Sector that normally issued by the State Bank of Pakistan. The sample of the study consisted of the top 10 private commercial banks of Pakistan. Regression and correlation methods were attempted in data analysis and in testing the hypotheses of the study. The study showed that a negative relationship exists between each of bank size and operational efficiency with ROA, where ROA is the indicator used for banks performance. Results also showed that a positive relation exists between each of bank size and operational efficiency with assets management ratio. It also reveals that bank size has a positive relationship with interest income, and assets managements. Moreover, the study showed a significant negative relationship of operational efficiency with interest income.

Andrew (2013), followed a different methodology when he investigated some factors affecting the performance of commercial banking industry in Kenya, Bungoma County. The study is different in the instrument and data used, where it depended on a questionnaire as a primary resource of data, with secondary published data of commercial banks. Descriptive statistics had been adopted in data analysis and also in testing the study hypotheses. The main conclusion of the study is that commercial banks performance of Kenya, Bungoma County is strongly affected by clientele, followed by competition, and sources of funds. The study

showed that leadership and promotional strategies have less effect on the performance of commercial banks.

A study investigated the performance of commercial banks of Kenya, is carried out by Ongore and Kusa, (2013). The purpose of the study was to determine the most important factors affecting the performance of commercial banks of Kenya. In more details, the study investigated the impact of capital adequacy, asset quality, management efficiency, liquidity management, GDP, and inflation rate, on the commercial banks of Kenya. Based on data covering the period 2001-2010 of 37 banks working in Kenya, the study finds that capital adequacy, asset liquidity, and management efficiency have a significant effect on banks performance, while no significant effect of liquidity had found on banks performance. This is for internal factors, but regarding the external macroeconomic factors, the study shows that inflation has a negative significant influence in banks performance, but GDP doesn't.

In his study, Govori (2013), regarding the commercial banking industry of Kosovo, referred that financial intermediaries including commercial Banks, provide what is called indirect financing, and in specific, commercial banks are important contributors in this context, and these banks are necessary and play a key role in the application mechanism of the monetary policy, while it is exercising its functions. The study also referred, based on a comparison between Kosovo and other banking industries, that Kosovo banks performance is satisfactory. The study found that net interest margin, provisions on loan losses, revenues and expenses by the non-interest taxes, and the equity multiplier have important effect on the rates of returns achieved the commercial banks of Kosovo. The study also addressed the effect of the global financial crisis of 2008 on the performance of commercial banks of Kosovo depending on the asset use ratio.

Al Karim and Alam (2013), measured the commercial bank performance of a selected banks of Bangladesh. The study is based on a sample consisting of 5 commercial listed banks

in both the Stock Exchange of Dhaka and Chittagong Stock Exchange. ROA was used as an internal-based measure of bank performance in the study, whereas Tobin's Q was used as a market-based indicator, and the Economic Value Added (EVA) was used as an economic-based indicator for performance of banks. Time series data of 2008-2012, and the multiple linear regression, were used in data analysis. The study demonstrated that ROA is the strongest measure of performance, and affected by credit risk, assets management, and bank size. In addition, the study showed that EVA as an economic-based measure is a moderate measure of banks performance, and it is exactly affected by only the bank size and assets management, where operational efficiency and credit risk did not demonstrate a significant effect on EVA. The study also showed that Tobin's Q, as a market-based performance measure is the least efficient measure of banks performance. In brief, the study found that ROA is the strongest measure of banks performance, followed by EVA, and EVA is followed by Tobin's Q.

One study that carried out by AlKhatib (2012) and investigated the different types of performance determinants of Palestinian commercial banks. The purpose of the study was to empirically examine the financial performance of five Palestinian listed commercial banks at Palestine Stock Exchange. The author of the study used three indicators; internal-based performance, market-based performance, and economic-based performance, where internal based performance is measured by ROA, while market-based performance had measured by Tobin's Q, and economic-based performance is measured by the economic value added. To analyze the data and to test the hypotheses of the study, the author attempted the correlation method, in addition to multiple regression in data analysis and in testing the hypotheses of the study. The study shows that commercial banks' performance is influenced by bank size, credit risk, operational efficiency and the method of asset management.

Teker, Teker, and Kent (2011), investigated the performance of commercial banking industry of Turkey. The purpose of the study was to analyze the performance of the listed commercial banks at Istanbul Stock Exchange. Data covering the period 2003-2010 and related

to a sample consisting of 13 commercial banks, had been gathered and used in the analysis. In the study, six different characteristics are defined as the financial performance components for banks, and several factors used in measuring each characteristic. The study showed that the performance of commercial banks depends and influenced by management efficiency, profitability, liquidity, capital adequacy, and asset quality and growth.

Naifar ((2010), investigated the determinants of banks performance of Tunisia. The author used cross sectional and time series studies to identify the determinants. The study came as a reflection to the rare studies of banks financial performance in the developing countries. Data of 10 Tunisian banks, that covers the time period of 1999-2007, had been collected and analyzed to achieve the objectives of the study. In this study, ROA had been used as an indicator for banks performance and therefore used as dependent variable. Several internal determinants had been attempted to identify whether they affect bank performance, including; capital, size of banks, bank ownership, expenses of management, number of managers, liquidity, and loans. The data of the study had analyzed using descriptive statistics, while the hypotheses were tested using the regression method. The study found that Tunisian commercial bank performance is only explained by bank loans, expenses management, and ownership structure.

An explanatory study investigated both of the internal and external determinants of commercial banks performance of Kenya, and carried out by Nyanga (2009). Data of time-period 2001-2010 for a number of 43 Kenyan commercial banks in addition of the Central Bank of Kenya, was used in studying the determinants of bank performance of Kenya. Using correlation and regression methods, the study demonstrated that capital adequacy and exchange rates are negatively correlated with banks performance and each of liquidity, operating cost efficiency, bank size, risk, GDP, and inflation rate, affects ROE, as a measure used by the author for commercial banks performance. The study also reveals a negative relationship between exchange rates and ROA, as another measure of banks performance. The main

conclusion is that none of the investigated determinants had found significantly affecting banks performance underline 5 percent coefficient of significance.

The commercial banking industry of South Africa attracted the attention of Kumbirari and Webb (2010), when they investigated the performance of this industry, taking into consideration some internal factors. The study is based on a data of a sample consisted of largest 5 banks of South Africa. Exactly, the authors focused on measuring profitability, liquidity, and credit quality. To identify the effect of the financial crisis of 2008, the authors carried out the data analysis based on 2 periods, where the first period is 2005-2006, while the second period is 2008-2009. The study revealed that an improving performance of commercial banks along 2005-2007, while this performance deteriorated during 2008-2009. The key finding of the study is that banks performance is significantly affected by liquidity and quality of risk, where the study showed that low liquidity deteriorates credit quality.

One study that carried out by the African Department of International Monetary Fund (IMF) through Flamini, McDonald, and Schumacher (2009), had investigated the determinants of commercial banks' profitability of Sub-Saharan Africa (SSA). Depending on data covering the period 1998-2006 of 389 Banks in 41 SSA countries, the study found that the higher returns on assets of banks are associated with bank size, activity diversification, and private ownership. The study shows that bank returns are affected by macroeconomic factors such as macroeconomic policies which its adoption promote low inflation and stable output growth. It also shows that the returns of these banks are not retained as addition to equity, where it means that most of these returns are paid to shareholders as dividends.

Feyzioğlu (2009), carried out a study to investigate whether good financial performance guarantees that banks intermediate financial resources of the economy in an efficient form. The study examines how much the banks of China efficiently play the financial intermediation role. The study finds that Chinese banks were more efficient during 2001-2007, despite that some

few banks were inefficient. It also declares that large banks receive more deposits and operate beyond the point of declining returns to scale, whereas, smaller banks operate at increasing return to scale. The study finds no correlation between banks efficiency and profitability. This means that a profitable bank doesn't necessitate the existence of its efficiency. In addition, the study refers that possible factors lead to large profits for banks, including low interest rate on deposits, large margin of interests, and high market focus.

Kunt (1998), follows an international perspective when she investigated the banks' interests' margin and profitability. The author analyzed the differences in interest margin and profitability of 80 countries and identified several determinants of commercial bank's interests and profitability. The study finds that a larger bank asset to GDP ratio, and a lower market concentration ratio, lead to lower margins and profits. The study also showed that foreign banks achieved higher profits and margins, compared to domestic banks in developing countries, where the opposite is true in developed countries. The study also found an evidence that the corporate tax burden is completely passed to customers of banks.

Based on the survey done for the prior studies, it is apparent that there are a lot of commercial banks had been investigated by different studies. Some determinants had been found that it has a significant effect on banks performance, while the same determinants had not been found that it affects the performance of commercial banks. This means that these determinants are not certain yet, or more investigation is needed. Nevertheless, the findings of the studies that the survey encompasses, are summarized in Table (2-1).

Table (2.1)**Summary of Prior Researches Findings**

Ser. No.	Study author	Determinant Having A Significant Effect
1.	Banna, Ahmed, & Koh, 2017	(1) Global crisis, (2) Bank size, (3) Capital adequacy, (4) Return on average equity, (5) Real interest rate
2.	Widyastuti, Purwana, and Zulaihati, 2017	(2) Liquidity, (2) Net interest margin, (3) Operating efficiency
3.	Almekhlafi and others, 2016	(1) Non-performing loans
4.	Chavarin, 2015	(1) Level of capital, (2) Commissions and fees sharing
5.	Yimka and others, 2015	(1) Credit risk
6.	Boolaky and Aahummud, 2015	(1) Credit risk, (2) liquidity, (3) Interest margin, (4) Market concentration, and (5) Inflation
7.	Mazadzi and Maseya (2015)	Management efficiency, diversification, credit risk, capital, and GDP growth.
8.	Jaber, 2014	(1) Oost to income ratio, (2) Capital adequacy, (3) Bank size, (4) Inflation rate, (5) Total assets to GDP ratio, (6) Market capitalization to total assets
9.	Tariq, 2014	(1) Capital strength, (2) Assets quality, (3) Bank size, (4) Inflation, and (5) NIGI
10.	Mashamba, 2014	(1) Non-performing loans, (2) Bank size, and (3) Assets adequacy
11.	Shah and Jan, 2014	(1) Bank size, (operational efficiency, and (3) Assets management

12.	Andrew, 2013	(1) Clientele, (2) Competition, and (3) Sources of funds
13.	Ongore & Kusa, 2013	(1) Capital adequacy, (2) Asset liquidity, (3) Management efficiency, and (4) Inflation
14.	Govori, 2013	(1) Net interest margin, (2) Provisions on loan losses, (3) Revenues & expenses by non-interest tax, and (4) Equity multiplier
15.	Al Karim & Alam, 2013	(1) size of Banks, & (2) Assets management
16.	Alkhatib, 2012	(1) Bank size, (2) Credit risk, (3) Operational efficiency, and (4) Asset management
17.	Teker, Teker, and Kent, 2011	(1) Management efficiency, (2) Profitability, (3) Liquidity, (4) Capital adequacy, and (5) Assets quality and growth
18.	Naifar, 2010	(1) Bank loans, (2) Expenses management, and (3) Ownership structure
19.	Nyanga, 2009	(1) Capital adequacy, (2) Exchange rates, (3) Size, (4) Risk, (5) GDP, and (6) Inflation rate
20.	Feyzioğlu, 2009	(1) Low interest rate on deposits, (2) large interest margins, and (3) High market focus
21.	Kumbirari and Webb, 2010	(1) Liquidity, and (2) Quality of risk
22.	Flamini, McDonald, and Schumacher	(1) Bank size, (2) Activity diversification, (3) Private ownership, and (4) Macroeconomic measures
23.	Kunt, 1998	(1) Larger bank assets to GDP ratio, and (2) Market concentration

Chapter 3

Study Hypotheses

3.1 Introduction

3.2 Study Hypotheses

3.1 Introduction

In chapter 2, the related literature had been explored, and the possible determinants of commercial banks performance can be determined based on the literature, and the survey made to the prior researches. The current chapter is only dedicated to present the study hypotheses.

Based on the consideration of the literature and prior research, the possible determinants of commercial banks can be classified into internal, market, and macroeconomic determinants. When the determinant can be influenced by the management of the bank, and the banks management can control that determinant, the determinant is classified as internal. Examples of internal determinants include bank size, capital adequacy, et al. In other situations, it is perceived that managements of banks cannot influence some determinants, because the determinants are outside its control, such as the rate of inflation, and the GDP, in this case, the determinant is classified as external determinant. Managements of commercial banks may have weak influence on market determinants, such Tobin's Q.

Others prefer the classification of possible determinants into only internal and external. This classification may be confusing. For instance, where Tobin's Q is classified when internal and external classification of performance determinates is followed? It can't be classified within internal or external determinants, because the management can affect the market value of the firm through its financial performance, where Tobin's Q is a ratio of total market value to total assets. At the same time, it cannot be classified as internal determinant, because managements of banks have less effect on a firm market value, than its effect on other internal determinants. Despite this confusion, and because banks management has no enough control over this measure, this classification of determinants is still appropriate and preferable over others, since the control of management is the base of this classification. The current study treats all determinants as one unit, assuming no differences between internal, external, or market determinants

2. Study Hypotheses

Banks grant the deposits received from depositors to borrowers, whether those depositors institutional or normal individuals, because the amount of granted cash determines, with other factors, the profit of banks. Logic states that as a bank lends more, as more interest revenue is earned. Actually, interest revenue is considered the main source of interests in commercial banks. In occasion, the excess of interest rate of lending over the interest rate of borrowing constitutes the significance part of commercial banks profitability. Several prior studies investigated the effect of banks loans on performance, where some found a significant effect, while some found the opposite. Therefore, the hypothesis is developed, in its both forms, null and alternative, as follows.

Ha1. Bank loans granted by listed commercial banks at Abu Dhabi Securities Exchange affects the performance of these banks.

Ho1. Bank loans granted by listed commercial banks at Abu Dhabi Securities Exchange doesn't affect the performance of these banks.

The size of commercial banks may affect its performance. Total assets used by a bank is a good indicator for banks size. This means that as more assets used by a bank, the bank is supposed to achieve higher profits. Several studies found an effect of commercial banks' size on the profitability or performance of commercial banks. In opposite, some prior researchers found no effect of bank size commercial bank performance. The following hypothesis had been developed, in its both forms, the null and alternative, to represent the probable influence of banks size on performance, as follows.

Ha2. The size of the listed commercial banks at Abu Dhabi Securities Exchange affects the performance of these banks.

Ho2. The size of listed commercial banks at Abu Dhabi Securities Exchange doesn't affect the performance of these banks.

Capital adequacy is of high importance for the performance of commercial banks. Basel agreement, No. 3 increased the required amount of capital. In brief, capital adequacy means that banks having a high ratio of capital to total amounts invested in the bank. A shortage of capital may lead to weak performance, but enough capital may lead to high profitability and good performance. The hypothesis that had been developed to enable testing the possible influence of capital adequacy on banks performance, is developed to be, in both forms; null and alternative, as follows.

Ha3. Capital adequacy of the listed commercial banks at Abu Dhabi Securities Exchange affects the performance of these banks.

Ho3. Capital adequacy of the listed commercial banks at Abu Dhabi Securities Exchange doesn't affect the performance of these banks.

The findings of some prior related studies demonstrated that management efficiency of commercial banks has an effect on the performance of commercial banks. Management efficiency can be measured quantitatively through dividing the equity book value by total assets that the bank owns, or by dividing cost on income. Managements are authorized to take important decisions; and has the authority to control cost. As a result, it is assumed to affect the profitability of banks. The third hypothesis that had written to enable testing the assumed effect of capital efficiency on bank performance is shown below, in its both forms, the null and the alternative, as follows.

Ha4. Management efficiency of the listed commercial banks at Abu Dhabi Securities Exchange affects the performance of these banks.

Ho4. Management efficiency of the listed commercial banks at Abu Dhabi Securities Exchange has no effect on the performance of these banks.

Liquidity of banks is one among the factors that some prior researches found affecting commercial bank performance. Liquidity of banks means that enough cash and other quick assets are available in the bank, to satisfy the needs of customers, and to enable the bank lending more cash and invest in more profitable alternatives. Liquidity can be measured mathematically by finding the relation of liquid assets to total assets, where liquid assets means cash and short term investment equities that classified as available for sale securities. The hypothesis that had been developed to enable testing the possible influence of liquidity on banks performance is shown below, in its both forms of null and alternative, as follows.

Ha5. The liquidity of listed commercial banks at Abu Dhabi Securities Exchange has an effect on bank performance.

Ho5. The liquidity of listed commercial banks at Abu Dhabi Securities Exchange has no effect on bank performance.

Tobin's Q is the relation of the firm market value to its total assets. Actually, Tobin's Q can be computed by dividing the fair market value of the bank by its total assets. The market value of the firm, or of the bank, is simply computed by multiplying the market value per share by the average number of common shares outstanding. The hypothesis that developed to represent the proposed effect of Tobin's Q on banks performance, is listed below, in its null and alternative forms, as follows.

Ha6. Tobin's Q of the listed commercial banks at Abu Dhabi Securities Exchange affects the performance of these commercial banks.

Ho6. Tobin's Q of the listed commercial banks at Abu Dhabi Securities Exchange doesn't affect the performance of these commercial banks.

Inflation rate is a macroeconomic possible determinant of commercial banks performance. This means that managements of firms can't influence this potential determinant and have no control over this variable. Rate of inflation is the continuous increase in prices

average, and normally determined based on the process of interaction between supply and demand. When demand is higher than supply, prices tend to increase, where in opposite, when supply is more than demand, prices tend to decline. Rate of inflation in UAE, is considered low when compared with the rate of inflation in other countries, because governments identify the prices of some goods and services. The hypothesis that represents the possible impact of inflation rate on commercial bank performance is developed, and appears, in it's both null and alternative forms, as follows.

Ha7. The annual inflation rate of the United Arab Emirates affects the performance of the listed commercial banks at Abu Dhabi Securities Exchange.

Ho7. The annual inflation rate of the United Arab Emirates doesn't affect the performance of the listed commercial banks at Abu Dhabi Securities Exchange.

GDP is another potential macroeconomic determinant of the commercial banks performance. The value of GDP depends on the goods and services produced or provided by the country. Because UAE is an oil producing country, the GDP of this country is high and exceeds the GDP of a large number of countries. As of rate of inflation, managements of commercial banks have no control over GDP. The hypothesis that represents the potential effect of GDP on commercial bank performance, had been developed, in its both null and alternative forms, to be as follows.

Ha8. The annual GDP of the United Arab Emirates affects the performance of the listed commercial banks at Abu Dhabi Securities Exchange.

Ho8. The annual GDP of the United Arab Emirates doesn't affect the performance of the listed commercial banks at Abu Dhabi Securities Exchange.

The last hypothesis is developed to accommodate the determinants together, whether the category of the determinant is internal, external, or market determinant. This hypothesis had been developed to appear, in its both forms, null and alternative, as follows.

Ha9. The performance of listed commercial banks at ADX is not affected by the entire group of independent variables that consisting of loan ratio, bank size, capital adequacy, management efficiency, liquidity ratio, Tobin's Q, inflation rate, and GDP.

Ho9. The performance of listed commercial banks at ADX is not affected by the entire group of independent variables that consisting of loan ratio, bank size, capital adequacy, management efficiency, liquidity ratio, Tobin's Q, inflation rate, and GDP.

Chapter Four

Research Methodology

4.1 Introduction

4.2 Population and Sample

4.3 Data Resources

4.4 Research Variables and Model

4.5 Methods of Data Analysis

4.1 Introduction

An appropriate scientific method should be followed by authors while they investigate an issue or problem to reach for reasonable findings or solutions. The methods used in each study depends on the nature of the study, in addition to its required data. The current chapter reports the methods used by the author in data collection and data analysis. In addition to data collection and analysis, the chapter explains the appropriate data of the study, and the resource of needed data and other required information. The chapter presents the population and the sample of the study. The dependent and independent variables that forming the structure of the study are illustrated in the chapter in a direct and easy way, and how each variable is measured. The chapter also highlights the statistical methods used in data analysis and hypotheses testing. Moreover, two models of regression, each connects the independent variables with the dependent one, are also presented in the chapter. In brief, the chapter presents the different methods used by the author, starting from data collection, and ending with findings and conclusions.

4.2 Population and Sample

There is an agreement among most interested people that the activities, nature, and objectives, of commercial banking industry are the same, whatever the location or the country of its existence, since the same duties are exercised by the institutions of this industry in different countries, with few differences in details that may be available. Therefore, the population of the study includes all commercial banks in UAE; and can be extended to include the institutions of commercial banking industry all over the world. Actually, all listed commercial banks at ADX were included among the cluster sample, where the listed commercial banks at ADX are considered one cluster that resembles the other clusters in different countries. By the end of 2017, twelve commercial banks were listed at ADX, but two banks among them were excluded from the study because no available data of these two banks

are available along the period of the study that covers 2007-2008. Moreover, it had been found that two other banks are Islamic banks, so these two banks were also eliminated, because the reported data in the financial statements of Islamic commercial banks is different, and the items included in its financial statements are also different. Therefore, the study depends on data issued of the remaining 8 listed banks. The list of included banks is shown in table 4.1, as follows.

Table 4.1

Sample of commercial banks

Ser.	Title	Symbol
1.	Abu Dhabi Commercial Bank	ADCB
2.	First Abu Dhabi Bank	FAB
3.	Bank of Sharjah	BOS
4.	National Bank of Fujairah	NBF
5.	National Bank of Umm Al Quwain	NBQ
6.	The National Bank of Ras Al Khaimah	RAK BANK
7.	United Arab Bank	UAB
8.	Union National Bank	UNB

Source: ADX Annual Reports

Therefore, the total number of excluded from the listed banks at ADX is four banks, so the study takes into consideration 8 among 12 listed banks at ADX. During the phase of data collection, 2 Islamic banks are excluded because of differences in financial annual reporting between Islamic and other non-Islamic normal banks. In addition, and during the period of data collection, another 2 banks had also excluded, because the data of these 2 banks, was available for only the most recent two years, where efforts had been made to collect the data from other

resources, but these efforts failed. Table 4.2 shows the excluded banks and the reason standing behind the exclusion.

Table 4.2
Sample of Excluded Commercial Banks from the Sample

Ser.	Title	Symbol	Exclusion Reason
1.	Commercial Bank International	CBI	Unavailable complete data
2.	Invest Bank	INVESTB	Unavailable complete data
3.	Abu Dhabi Islamic Bank	ADIB	Disclosure differences
4.	Sharjah Islamic Bank	SIB	Disclosure differences

Source: ADX Annual Reports

4.3 Data Sources

Data is normally classified into primary and secondary. Secondary data is readily available in journals, periodicals, text book, internet, brochures, et al. With regard to the current study, its required data is secondary, and no primary data is needed. Information needed to accomplish the study is gathered from text books, journals that include articles, master thesis, and doctorate dissertation, but the required data for the analysis and for hypotheses testing had been collected from the annual reports of listed commercial banks at ADX, and directly from the website of ADEX. These reports include the annual financial statements of listed banks, where financial information of different aspects of financial performance can be found.

Unfortunately, only the annual reports of two years are available at the website of ADX, so different websites had been attempted to gather the required data to cover the period of the study. Data covers the period 2008-2017 of two commercial banks did not found, so those two banks had been excluded, since its data is only available for the last two years at ADX website.

4.4 Research Variables and Models

The performance of the listed commercial banks at ADX, is the dependent variable of the study. For business organizations, more profitable organizations, are referred to as good performing organizations. This just to mention that, good performance means high profitability, and same measures are used in assessing performance and profitability. Several measures can be used in evaluating performance of business organizations including, ROA, ROE, operating profit margin, net profit margin, but the most common one is ROA, followed by ROE. Actually, ROA is considered better than other measures of performance, because it takes with consideration the relation of earnings (income) to total assets, where total assets refer to the total capital invested in the firm, whether it contributed by shareholders, or borrowed. ROA is a relation of net after tax income to total assets, but in case that the firm is subject to income tax, net interests, are better to be added back to net income. In UAE, local commercial banks are not subject to income tax, and only branches of foreign banks are required to pay income tax. In general, ROA can be computed by using the following equation.

$$\text{ROA} = \frac{\text{Net Income} + [\text{Interest Expense} \times (1 - \text{Tax Rate})]}{\text{Average Total Assets}}$$

Several independent variables the current study takes into consideration. The study does not take into account whether the determinant is internal or external, or whether it is market, internal, or external determinant, because the classification of the determinant is irrelevant to the objectives of the study. The independent variables the study examines its effect on bank performance include bank loans, bank size, capital adequacy, management efficiency, bank liquidity, Tobin's Q, inflation rate, and GDP.

Bank loans is normally computed by finding the relationship of net loans granted by the bank to the total assets of that bank. The relation is expressed as follows.

$$\text{Bank Loan Ratio} = \frac{\text{Net Loans}}{\text{Total Assets}}$$

The second internal factor that it is taken into consideration in the study, is the size of banks. Bank size can be determined by the size of its total assets. Natural logarithms of total assets is often used in the size of business organizations. As a result, natural algorithms of a base 10 is used here in the study.

Capital adequacy means whether the bank has enough capital and will be able to grant enough loans to its clients. It can be found by computing the relation of book value of equity to total assets, as follows.

$$\text{Capital Adequacy} = \frac{\text{Book Value Of Equity}}{\text{Total Assets}}$$

Management efficiency means the ability of management to manage the bank in an efficient form, and whether it can take good decisions based on surrounding situations. Efficient management can quickly take good decisions to adapt with the changes taking place around, and whether it can control costs and takes with consideration the cost/revenue relationship. . It can be normally computed by finding the ratio of cost to income, as follows.

$$\text{Management efficiency} = \frac{\text{Cost}}{\text{Income}}$$

Bank liquidity means whether the bank has enough liquidity, and will continue able to provide loans to customers, to generate profit. Liquidity of a commercial bank is a ratio of liquid assets to total assets, where liquid assets includes cash and cash due from banks, the securities that classified as available for sale, in addition to governmental securities. So the equation that is used in the computation of liquidity is as follows:

$$\text{Bank Liquidity} = \frac{\text{Cash and Cash Due from Banks+Available for Sale Securities}}{\text{Total Assets}}$$

Tobin's Q represents the growth opportunities, where if Tobin's Q ratio with the future operating performance, is positive, in this case, Tobin's Q represents growth performance, while if this ratio is not positive, it can't be considered that it represents growth opportunities.

Tobin's Q can be computed by dividing the market value of the bank by the replacement cost of the bank's total assets (Fu, Singhal, and Parkash, 2016). The market value of firms including commercial banks, is simply the total market value of its outstanding shares, where debt and preferred shares market value is the same as its book value. Moreover, a bank replace cost of its total assets is estimated based on its book value.

GDP is one among the independent variables that the study takes into consideration. It is actually the market value of the final goods and services produced in a country within specific period of time, normally one calendar year. In other words, it is a measure of national income and output during in a country a specified period of time (Kira, 2013). This measure is announced in each country next to the ending of each year.

The last independent variable is inflation rate, where is the continuous rise in the general price level, or the continuous fall in the value of money prices average of goods and services (Labonte, 2011). Similar to GDP, the rate of inflation is measured each year by the governmental economic authorities in each country.

As a result of one dependent and 8 independent variables forming the structure of the study, the regression model had developed, to be as follows.

$$ROA = a + bLN + cBS + dCA + eME + fLO + gTQ + hIR + iGD + E$$

Where:

ROA: the dependent variable, return on assets

LN: loan ratio

BS: bank size

CA: capital adequacy

ME: management efficiency

LO: liquidity ratio

TQ: Tobin's Q

IR: inflation rate

GD: gross domestic product

Regarding a, b, c, d, e, f, g, h, and I, are constants, where a, represents the value of the dependent variable, when the values of other independent variables equals zero, but b, c, d, e, f, g, h, and I, each of which represents the slope of the corresponding variable in its effect on the dependent variable.

4.5 Methods of Analysis

Some statistics that are considered descriptive such as the variance, and standard deviation as measures of variation, and the mean, as a measure of tendency are used in data analysis. The linear regression method, and the method of correlation are used as statistical methods in testing the study hypotheses. A 95 percent confidence level had been adopted as a base the null hypothesis acceptance or rejection decision. This means that the adopted predetermined coefficient of significance is 5 percent ($1 - 0.95$). Underline this decision rule, when the computed coefficient of significance is higher than the predetermined, the null hypothesis should be accepted, whereas in opposite, when this coefficient is below than the predetermined one, it is rejected. In addition to the above mentioned criterion of null hypothesis acceptance, or rejection, as a decision base, a comparison method between the computed and the tabulated t or f-values, is also used, where underline this rule, the null hypothesis is accepted when the computed t-value or f-value, is less than the tabulated one, whereas it is rejected when the computed t-value or f-value is higher than the tabulated. In occasion, both decision criterion lead to the same result.

Chapter 5

Analysis and Results

5.1 Introduction

5.2 Descriptive Statistics

5.3 Correlation Analysis

5.4 Regression Analysis

5.5 Hypotheses Testing

5.6 Regression Models

5.7 Using ROE as A Measure of Bank Performance Instead of ROA

5.8 Expected and Actual Relations Among Variables

5.1 Introduction

The objective of the study was to assess the financial performance of listed commercial banks at ADX, and to determine the most important determinants of commercial banks performance, using ROA, and ROE. Based on the survey and literature and prior researches consideration, 5 internal and 3 external determinants were used to be investigated in their effect on ROA and ROE. Actually ROA, is the most common measure used by authors to moderate firm's profitability, followed by ROE. In brief, the study attempts to explain the relationship between both of ROA, and ROE, as indicators for banks financial performance, and specific selected external determinants.

The author collected and employed data from 8 among a total of 12 listed commercial banks at ADX. Among the total number of listed banks at ADX, 4 banks had been excluded, where 2 banks among the 4 excluded, had been excluded because of incomplete information along 2008-2017, and other 2 banks among the excluded 4, are Islamic banks, and the information announced by Islamic banks are different in nature, items included in financial statements, and the titles of some accounts in statements. Therefore, data covers the period from 2008 to 2017, of 8 listed commercial banks had employed.

Descriptive statistics such as the mean, as a measure of central tendency, and the standard deviation, as a measure of variation were used in data description and analysis. In addition, the coefficient of correlation, simple and multiple regression methods, had also been used in data analysis and hypotheses testing.

5.2 Descriptive Statistics

The study attempted both of time series and cross-sectional study. Time series analysis of 10 years (2008-2017), and cross-sectional using averages of years 2008-2017, had been attempted. Descriptive statistics of all dependent and independent variables are appearing in table 5.1.

Table 5.1
Descriptive Statistics

Measures	No. of Cases	Minimum	Maximum	Mean	Std. Deviation
ROA	10	0.0216	0.1910	0.01548	0.0026
ROE	10	0.0844	0.1464	0.1163	0.0230
Capital Adequacy	10	0.1100	0.1506	0.1322	0.0142
Loan Ratio	10	0.1983	0.4541	0.2809	0.0754
Management Efficiency	10	0.7121	22.769	6.0324	8.664
Bank Size	10	10.88	12.15	11.77	0.3776
Liquidity Ratio	10	0.550	0.76	0.6556	0.0620
Tobin's Q	10	0.08	0.16	0.12227	0.02377
Rate of Inflation	10	00.0070	0.1230	0.0273	0.0351
GDP	10	993	1,412	1,227	137.73

Based on information appearing in table 5.1, the mean of ROA is low and equals 0.015 or about 1.5%, while it is about 0.11 for ROE. This large difference between ROA and ROE is because the equity capital is low when compared to total assets, where large amounts invested in assets. This difference between ROA and ROE is because ROA is a relation of income to total assets, while ROE is a relation of income to equity.

The table also shows the descriptive statistics of all independent variable. Loan ratio is one among these independent variables, where it is actually a relation of amounts lent to total assets. As a commercial bank lends more cash, revenue from interests is supposed to be increased, assuming that bad debt ratio is fixed. In addition, theoretically and logically, as a bank lends more cash, the ratio of bad debts is supposed to be increased, but in case that there is good and active credit management, bad debts may not increase. The appearing mean of loan ratio in table (5.1), is considered good, since it is not too high nor too much low. Too high loan ratio may lead the bank to borrow at higher interests just to cover the expenses, and when loan ratio continues high enough for long period, it may lead the bank for bankruptcy because of continuous shortage in liquidity. In opposite, low loan ratio means that the bank follows a conservative credit policy, and this situation will lead to a reduction in the profitability of banks. Therefore, a credit policy must be adopted in a bank in a way to keep a type of balance between liquidity and profitability. Based on information appearing in the table, the mean of loan ratio is a round 28 percent, which considered good, because it is nor high neither low.

With regard to management efficiency, it has a mean of 6.03, with a high standard deviation. This high standard deviation is apparent by considering the range, where the highest value is 22.769, while the least value is 0.712. Management efficiency is a relation of cost to income. This high mean of management efficiency means that the cost are high when is compared with profits. Because the standard deviation is high, this means that some banks have good control over cost, and others have weak or bad control.

The size of banks is measured through the natural algorithms of total assets, using base 10 and exponent 2. The mean of bank size equals 11.77 with 0.3776 standard deviation, so this standard deviation is low, which means that there is no large difference among banks regarding the total assets employed by banks.

Liquidity ratio is a relation of liquid assets to total assets of banks, where assets are liquid when it can be sold quickly without significant losses (Alger & Alger, 1999). Therefore, liquid assets of commercial banks include cash, optional reserves, when compared with legal required reserves by the central bank, securities and interbank loans that have a short period of maturity. The listed commercial banks at ADX, can be considered of high liquidity since the mean of liquidity equals 0.6556, where this refers that banks invest more in liquid assets.

The mean of Tobin's Q equals 0.12227, with 0.02377 standard deviation. As mentioned above, Tobin's Q is a relation of the banks' market value to total assets. The mean and standard deviation of Tobin's Q refer that the market value of banks is high when compared to total assets. In opposite, when the value of the standard deviation is low, it means that there is no large differences among banks regarding the relation of their market value to total assets.

The rate of inflation and the GDP are macroeconomic proposed determinants for the performance of commercial banks. It was mentioned above, that managers of commercial banks have no control over macroeconomic indicators. The mean of the inflation rate equals 0.0273, or about 2.7 percent a year, with 0.0351 standard deviation. Low rate of return is preferable in business environment, especially for banks and other financing institutions.

In opposite, GDP of a country is as it is higher as it is better. It is common widespread indicator for production and growth in production, and normally it reflects the welfare of people in a society. The mean of GDP of UAE for the period 2008-2017, equals AED 1,227 billion, which is considered too much high compared with GDP of other countries. The high GDP in UAE can be attributed to the oil extracted inside the country. Considering the standard deviation of GDP, it equals AED 137.73 billion, where it means that there were no large fluctuations in the value of GDP from year to year.

5.3 Correlation Analysis

Normally and in different types of studies the analysis of correlation is better to be made among the different kinds of variables. The coefficient of correlation that normally referred with r , explains whether a relation exists between two or more variables. When the coefficient of correlation is high between two variables, this doesn't mean that one of them affecting the other, but both or all variables that associated with high coefficient may be affected by an external variable, that the study doesn't took into consideration, or completely is not interested with. Where regression examines the effect of one variable on other, correlation only examines the relations between these two variables, where the affecting variable of both may be outside the interests. Table (5.2) shows the correlation coefficients among the different variables.

Table (5.2)

Coefficients of Correlation

	ROA	ROE	CA	LR	ME	INF	BS	LIQ RAT	GDP	TQ
ROA	1.00	0.881	0.062	0.023	- 0.534	0.020	0.646	0.070	0.063	-0.059
ROE		1.00	- 0.360	-0.33	- 0.652	0.375	0.603	0.318	- 0.181	0.183
CA			1.00	0.731	0.493	- 0.475	- 0.067	-0.594	0.653	-0.277
LR				1.00	0.534	- 0.313	0.047	-0.541	0.736	0.011
ME					1.00	- 0.035	- 0.539	-0.756	0.763	-0.179

INF						1.00	-	0.406	-	0.713
							0.124		0.033	
BS							1.00	0.174	-	0.142
									0.202	
LIQR								1.00	-	0.521
ATIO									0.811	
GDP									1.00	-0.103
TQ										1.00

Table (5.2) reveals that some the correlation coefficients among variables are high, and it is low among some others. It also reveals that, the relation is positive among some variables, while it is negative among some others. The highest positive coefficient of correlation exists between ROA and ROE; and equals 0.881. It is normal to find a strong association between ROA and ROE, because the dominator of both ratios is net income, but the denominator of ROA is total assets, while the remunerator of ROE is equity. In opposite the weakest correlation is 0.020, which is the coefficient of correlation between ROA and rate of inflation. It also deserves to be mentioned that a somewhat strong positive correlation is available between bank size and ROA.

It also notable that the strongest negative coefficient of correlation is -0.811, where this exists between liquidity ratio and GDP, whereas the least negative coefficient of correlation exists between GDP and Tobin's Q. Except some few coefficients, a weak correlation exists among variables. Actually, it is a healthy issue when a weak correlation exists among the independent variables, so the existence of these weak coefficients enhances the reliability of the study.

5.4 Regression Analysis

In addition to the regression outputs that used as a base of acceptance or rejection decision of the null hypotheses, year by year regression is made as a secondary procedure, just to show an idea regarding the effect of the global financial crisis of 2008. the individual year by year regression along 2008-2017 for all variables except rate of inflation and GDP, where these two variables are constants, the study shows the capital adequacy is the strongest variable affecting ROA, followed by loan ratio, whereas other independent variables have a weak effect on ROA.

5.5 Hypotheses Testing

First of all, it is necessary to remind that the study is a time serial along the period 2008-2017. Table (5.3) lists the mean of each value of each variable at each year, along the period of the study, which starts from the beginning of 2008 till the ending of 2017. Actually, the values seem reasonable, and no large gaps in these values from year to year. The unique gap is in management efficiency over the last three years, while the means of other values have no gaps.

Table (5.3)

Means of Variables along the Period of the Study

Year	ROA	ROE	CA	Loan Ratio	ME	Inf. Rate	Bank Size	Liq. Ratio	GDP	Tobin's Q
2008	0.016	0.146	0.112	0.198	0.71	0.123	11.6	0.755	1156	0.158
2009	0.011	0.088	0.126	0.203	1.12	0.016	11.6	0.720	993	0.126
2010	0.013	0.108	0.109	0.247	0.88	0.009	11.5	0.698	1090	0.098
2011	0.017	0.136	0.128	0.215	0.73	0.007	12.1	0.657	1132	0.092
2012	0.018	0.130	0.143	0.323	0.75	0.007	12.1	0.664	1190	0.092

2013	0.017	0.120	0.144	0.280	0.82	0.011	11.8	0.681	1259	0.109
2014	0.018	0.145	0.128	0.277	0.73	0.023	12.1	0.603	1300	0.114
2015	0.013	0.103	0.129	0.303	18.24	0.041	11.9	0.590	1350	0.111
2016	0.014	0.097	0.150	0.454	13.53	0.018	11.8	0.630	1391	0.141
2017	0.012	0.084	0.148	0.306	22.76	0.018	10.8	0.554	1412	0.082

It was mentioned above that 9 hypotheses constructing the structure of the study, and these hypotheses are developed based on the objectives that the study attempts to achieve; and based on the related literature and prior researches. The adopted indicator for banks performance in the study is ROA, whereas ROE is used only for deeper analysis. In addition, all hypotheses are tested using t-value in single regression and f-value in multiple regression, under 0.95 coefficient of significance (0.05 coefficient of significance).

5.5.1 First Hypothesis Test

The first hypothesis had developed to enable examining the effect of bank loans on the performance of banks. The hypothesis is again presented, only in null form, as follows.

H₀₁. Bank loans granted by listed commercial banks at Abu Dhabi Securities Exchange are positively related to the performance of these banks.

Table (5.4) presents the outputs of the analysis using SPSS. Considering the table, the computed t-value is appearing of 4.74, and the significance coefficient is close value to zero. Comparing the computed t-value is with the tabulated one, it is apparent that the computed value is higher than the tabulated which actually equals 1.96. Moreover, the process of comparison between the coefficient of significance and the predetermined, which equals 0.05, it is apparent that the computed one is less than the predetermined one. Because the computed t is higher than the corresponding one that existing in tables, and because the coefficient of significance is less than the predetermined one, the author rejects this hypothesis, and accepts

the alternative one instead of it, which states that. This result demonstrates that loans ratio is significantly affecting commercial bank performance.

Table (5.4)

Impact of Loans Ratio on Bank Performance

Hypothesis	Coefficient	Deg. Of Freedom	T. Value	Sig.
H01	0.003	72	4.74	0.004

5.5.2 Second hypothesis Test

The 2nd hypothesis had created to enable testing the possible impact of bank size on the performance of these banks. The hypothesis is written again, using only it's null form.

Ho₂. The size of listed commercial banks at Abu Dhabi Securities Exchange is positively related to the performance of these banks.

Size of business organizations can be indicated by different ways, but the most common indicator for size nowadays is total assets. As a result, total assets are adopted in this study and used as indicator for the size of commercial banks. Because, often, total asset number is large, the natural algorithms of base 10, exponent 2, is used to simplify the process of analysis, and to add more consistency to the data used in analysis.

With regard to the effect of bank size on commercial banks performance, table (5.5) declares that the computed value of t regarding the impact of bank size on performance of commercial banks. The table reveals that the computed t-value is 1.95, and the coefficient of significance is 0.056. These values show that the computed t-value is approximately equals to its corresponding tabulated one, that equals 1.96, and the computed coefficient of significance equals the predetermined one, which equals 0.05. Because the computed t-value and its corresponding tabulated one are approximately equal, and because the computed coefficient of

significance and the predetermined one are also equal, the null hypothesis is rejected, where instead, the alternative one is accepted. This means that the size of commercial banks has a significant effect on the performance of listed commercial banks at ADX.

Table (5.5)

Impact of Bank Size on Performance

Hypothesis	Coefficient	Deg. Of Freedom	T. Value	Sig.
H02	1.03	72	1.95	0.056

5.5.3 The Third Hypothesis Test

The third hypothesis had been developed to enable examining the possible assumed effect of capital adequacy on the performance of listed commercial Banks at ADX. Capital adequacy means that enough capital is available in the bank that enables the bank to provide its services to customers and satisfy the needs of borrowers. The hypothesis is again listed in this location, in its null form, as follows.

H₀₃. Capital adequacy of the listed commercial banks at Abu Dhabi Securities Exchange is positively related to the performance of these banks.

Table (5.6) shows the SPSS related outputs to the effect of capital adequacy on commercial banks performance. Considering the table, the computed t-value is 2.39, and the computed coefficient of significance is 0.020. The comparison between the computed t-value and the corresponding one in tables, which equals 1.96, and between the coefficient of significance and the predetermined one, shows that the computed t-value is higher than the tabulated, and the coefficient of significance is less than 0.05 or less than the predetermined. Based on results of these two types of comparison, between the computed and the tabulated t-value, and between the computed and the predetermined coefficients of significance, the null

hypothesis should be accepted, while is alternative one should be rejected. This result means that bank performance is affected by capital adequacy.

Table (5.6)

Impact of Capital Adequacy on Performance

Hypothesis	Coefficient	Deg. Of Freedom	T. Value	Sig.
<i>H03</i>	0.0385	72	2.39	0.000

5.5.4 The Fourth Hypothesis Test

The fourth hypothesis handles the proposed effect of efficiency of banks management on commercial bank performance. The hypothesis is only presented again in null form, as follows.

H07. Management efficiency of the listed commercial banks at Abu Dhabi Securities Exchange is positively related to the performance of these banks.

Table (5.7) demonstrates the related results of analysis and the related statistics regarding the impact of management efficiency on bank performance. Considering the contents of the table, the computed t-value is found equals -9.04, and the coefficient of significance is found equals zero. Comparing between the computed t-value and the tabulated one, which equals 1.96, and between the coefficient of significance and the predetermined one, which equals zero, or a close value to zero, it is clear that the computed t-value is higher than the tabulated, and coefficient of significance is less than the predetermined. Therefore, and based on the results of these comparisons, the null hypothesis is rejected, and the alternative one is accepted. This result means that there is a significant impact of management efficiency on bank performance, or in other words, bank performance is affected by management efficiency, in addition to other factors.

Table (5.7)

Impact of Management Efficiency on Performance

Hypothesis	Coefficient	Deg. Of Freedom	T. Value	Sig.
H07	-0.0001	72	-9.04	0.000

5.5.5 The Fifth Hypothesis Test

The Fifth hypothesis states that liquidity may have an effect on the performance of commercial banking industry of UAE. Liquidity of a commercial bank means that enough cash and other quick liquid assets are available in the bank to be able to make loans and profitable investment to achieve good profits, and to avoid problems resulting from liquidity shortages. In null form, the hypothesis is again reported as follows.

Ho5. The liquidity level of listed commercial banks at Abu Dhabi Securities Exchange is positively related to the performance of the banks.

The outputs of analysis with regard to the fifth hypothesis that is enables testing the effect of liquidity on bank performance, is available in table (5.8). The table demonstrates that the computed value of t is 2.54, and 0.014 is the value of significance coefficient. Comparing between the computed t-value that equals 1.96, and the tabulated one, in one hand, and between the computed coefficient of significance and the predetermined one that equals 0.05, in other hand, it is apparent that the computed t-value is higher than the one in tables, and the coefficient of significance is less than predetermined one. Based on this result, the null hypothesis is rejected, and the therefore the alternative is the one that it is accepted. This result illustrates that commercial bank liquidity affects bank performance. In other words, the results approve that bank performance is influenced by its level of liquidity.

Table (5.8)

Impact of Liquidity on Performance

Hypothesis	Coefficient	Deg. Of Freedom	T. Value	Sig.
H05	0.021	72	2.54	0.014

5.5.6 The Sixth Hypothesis Test

The sixth hypothesis focuses on the proposed effect of the rate of inflation on the performance of the listed commercial banks at ADX. The null form of the hypothesis is again presented, as follows.

H₀₆. The annual inflation rate of the United Arab Emirates is related to the performance of the commercial banks.

Table (5.9) shows that the computed t-value, regarding the effect of inflation rate is -0.42, and the coefficient of significance equals 0.675. When the computed and the tabulated t-values are compared, this comparison shows that the absolute computed one is less than the tabulated value. In addition, comparing between the resulting coefficient from analysis, and the predetermined one, which as mentioned in more than one location, which equals 5 percent, the comparison declares that the computed one is higher. The results of these two types of comparisons enforce accepting the null hypothesis and rejecting the alternative one. This result illustrates that no significant influence of inflation rate on bank performance. In brief, the analysis find that bank performance has a relation to the rate of inflation of UAE.

Table (5.9)

The Impact of Inflation Rate on the Performance of Commercial Banks

Hypothesis And Variables	Coefficient	Deg. Of Freedom	T-Value	Sig.
H06	-0.0655	72	-0.42	0.675

5.5.7 The Seventh Hypothesis Test

The 7th hypothesis deals with the proposed effect of GDP on the performance of the listed commercial banks at ADX. The 9th hypothesis is again listed below, using only the null form.

H₀₇. The annual GDP of the United Arab Emirates is related to the performance of the commercial banks.

Table (5.10) declares that the computed t-value, regarding GDP effect on bank performance is -1.27, and the coefficient of significance is 0.209. When the comparison is made between the computed and the tabulated t-values, which equals 1.96, and when a similar type of comparison is made between the coefficient of significance and the one had predetermined on advance, which as mentioned before, is 5 percent, it is found that the absolute computed value of t is below than the related one available in tables, and the coefficients of significance is greater the predetermined. Therefore, and based on the results of these two comparisons, the author accepts the null hypothesis and rejects the alternative one. For more illustration, the test made to the hypothesis did not approve that GDP has a significant effect on bank performance, or using different words, bank performance is not affected by GDP.

Table (5.10)

The Impact of GDP on the Performance of Commercial Banks

Hypothesis And Variables	Coefficient	Adj. R²	Deg. Of Freedom	T- Value	Sig.
H07	-0.017	0.011	72	-1.370	0.174

5.5.8 The Eighth Hypothesis Test

The Eighth hypothesis states that Tobin's Q affect the financial performance of listed commercial banks at ADX, where Tobin's Q is a ratio of the bank market value to total assets. The hypothesis is presented again, but only in null form, as shown below.

H₀₆. Tobin's Q of the listed commercial banks at Abu Dhabi Securities Exchange is related to the performance of the commercial banks.

Table (5.121) declares the computed t-value and the coefficient of significance regarding the effect of Tobin's Q on bank performance. The table declared that the computed t-value is 2.78, and the coefficient of significance is 0.007. When the computed t-value is compared with its corresponding tabulated one, and when the computed coefficient of significance is compared with its related predetermined one, it is clear that the computed t-value is higher than the tabulated, and the coefficient of significance is less than the one that predetermined previously before starting the analysis. These results enforce rejecting the null hypothesis and accepting the alternative. Based on this result, Tobin's Q is found significantly affecting bank performance, or in a different word, bank performance is significantly affected by the ratio called Tobin's Q of listed commercial banks at ADX.

Table (5.11)

The Impact of Tobin's Q on the Performance of Commercial Banks

Hypothesis And Variables	Coefficient	Deg. Of Freedom	T. Value	Sig.
H08	0.0069	72	2.78	0.007

5.5.9 The Ninth Hypothesis Test

The ninth and the last hypothesis takes into consideration the entire effect of all independent variables, whether these variables are internal or external, on the financial performance of commercial banks. The hypothesis is presented again, but only in null form of hypotheses, as shown below.

H09. The performance of listed commercial banks at ADX is affected by the entire group of internal and external factors together

The method of statistics that used in testing this hypothesis is different from methods of statistics used in testing all prior hypotheses, where multiple linear regression is followed in examining this hypothesis, because it examines the effect of all independent variables together on bank performance. Results of analyzing the ninth hypothesis are available in table (5.12). The table reveals that the computed F-Value is 82.53, and the coefficient of significance is zero. The comparison that had made between the computed and predetermined coefficients illustrates that the coefficient of significance is higher than its corresponding predetermined one. This result refers for a decision of rejecting the null hypothesis and accepting its alternative, should be taken. This result refers that all independent variables together as one group affect bank performance, or bank performance is significantly influenced by the entire group of independent variables that the study takes into account.

Table (5.12)

Impact of All Internal and External Variables on the Performance of Banks

Hypothesis and Variables	R²	Deg. Of Freedom	F. Value	Sig.
H09	0.6695	72	82.53	0.000

5.6. The Regression Model

Table (5.13) summarizes the results of using the regression method that represents the effect of all independent variables on bank performance as a dependent variable.

Table (5.13)

Results of Regression Based on ROA as Indicator for Bank Performance

ROA Dependent	Coef.	Std. Err.	T	P > t 	95% Conf.	Interval
L1.ROA	0.66577	0.1299	5.15	0.000	0.4089	0.9285
Loan Ratio	0.0030	0.0006	4.74	0.000	0.0017	0.0043
Bank Size	1.03	0.0039	3.12	0.000	0.031	0.0618
Capital Adequacy	0.0385	0.0161	2.39	0.020	0.0062	0.0708
Management Eff.	-0.0001	0.0000	-9.04	0.000	-0.0002	=0.0001
Liquidity Ratio	0.0210	0.0082	2.54	0.014	0.0014	0.0376
Log. Assets	1.03e-06	5.28e-07	1.95	0.056	-2,79e-08	2.08e-06
Inflation Ratio	-0.0655	0.155	-0.043	0.675	0.3760	0.2449
LnGDP	-0.017	0.0137	-1.27	0.209	-0.0448	0.0099
Tobins'Q	0.0069	0.0024	2.78	0.007	0.0019	0.0119
Constant	0.1164	0.0994	1.23	0.223	-0.0724	0.3052

Table above based on Stata output

Table (5.13) shows that loan ratio, capital adequacy, management Efficiency, liquidity ratio, and Tobin's Q, each of which, has a significant effect on bank performance, and that entire of independent variable has a significant effect on the listed commercial banks of ADX. The table also shows that management efficiency has the strongest effect on banks performance, whereas inflation ratio has the least effect on banks performance among the independent variables.

The regression model that used to represent the effect of all independent variables on banks performance was as follows before data analysis.

$$ROA_{it} = a + b_1ROA_{it-1} + b_2LN_{it} + b_3BS_{it} + b_4CA_{it} + b_5ME_{it} + b_6LO_{it} + b_7TO_{it} + b_8IR_{it} + b_9GDP_{it} + \varepsilon_{it}$$

When hypotheses had been tested, and the model is solved, it became as follows.

$$ROA_{it} = 0.116 + 0.665ROA_{it-1} + 0.003LN_{it} + 0.000001BS_{it} + 0.0385CA_{it} - 0.0001ME_{it} + 0.003LO_{it} + 0.0069TQ_{it} - 0.0655IR_{it} - 0.0174GDP_{it}.$$

5.7 Expected and Actual Relations among Variables

The linear regression method shows the value of constants and the slope of each independent variable using both ROA and ROE as a dependent reciprocal variable. Table (5.14) shows the expected and the actual sign of each independent variable on the dependent variable, where both dependent variables were used, but in a reciprocal term. When the value of slope (B-Value) is positive, it means that the variable has a positive effect on the dependent, whereas in opposite, when B-Value is negative, this means that an increase in the independent variable leads to a decrease in the dependent, and a decrease in the independent results to an increase in the dependent. The table shows that most actual independent signs agree the expected signs.

Table (5.14)

Individual Independent Variables Explanation of Change in Banks Performance

Variables	Hypothesis	Study Result
Liquidity Ratio	H01	Supported
Capital Adequacy	H02	Supported
Man. Efficiency	H03	Supported
Bank Size	H04	Supported

Loans Ratio	H05	Supported
GDP	H06	Supported by 5%
Inflation Rate	H07	Supported by 10%
Tobin's Q	H08	Supported by 5%

Chapter 6

Findings and Recommendations

6.1 Introduction

6.2 Findings and Conclusions

6.3 Recommendations

6.1 Introduction

The key purpose of the current study is to determine the most important determinants of commercial bank performance. In addition to the key objective, the study investigates some additional aspects of the financial performance of this group of commercial banks. To achieve these objectives, a survey is made to the literature and prior researches. Based on the survey that had been done to the related literature of bank performance and the related prior researches, 9 hypotheses were developed to enable testing the effect of 8 independent variable on the performance of commercial banks as a single dependent variable. The independent variables that the study examines their effect on bank performance are; bank size, loans, management efficiency, bank liquidity, and capital adequacy, inflation rate, Tobin's Q, and GDP.

As a result, data of 10 continuous years covering the period 2008-2017, had been collected, and used in the analysis, where in total, 12 commercial banks are listed at ADX, but 4 of them are eliminated. Next to data collection, the data had used in the analysis using descriptive statistics, correlation, and linear regression method for hypotheses testing. Except the last hypothesis, the remaining first 8 hypotheses were tested using the simple linear regression method, while the multiple linear regression is only used in testing the 9th or the last hypothesis. All study hypotheses are examined at 95 percent level of confidence, or 5 percent predetermined level of significance ($1 - 0.05$). The decision criterion rule of comparison between the computed and the tabulated t-value, for simple regression, and the comparison between the computed and tabulated f-value, for multiple regression is used as a base for the decision acceptance or rejection. Moreover, the comparison approach between the coefficient resulting from analysis, and the predetermined one, is used as another additional base to take a decision of whether to accept or reject the null hypothesis.

As a result of data analysis and hypotheses testing, some of these determinants had been found having a significant effect on commercial banks performance, while others had been

found that they have no effect. Based on the analysis, a group of recommendations are presented for the decision makers of commercial banks.

6.2 Conclusions and Findings

The current study takes into consideration the bank performance as a single dependent variable and 8 independent different variables, where some of these are classified as internal, while others as external. The study investigated the effect of 8 independent variables, including, bank size, loans, bank liquidity, management efficiency, capital adequacy, Tobin's Q, rate of inflation, and GDP of UAE, on the single dependent variable, performance of listed commercial banks at ADX. As a result of this work, the study finds the following:

1. Together, the total entire group of independent variables significantly affecting the performance of listed commercial banks at ADX. The multiple linear regression methods revealed that, together the group of independent variables affects the performance of banks, despite that no individual effect had been found for some of these variables. The study shows that these independent variables together explain a large amount of change taking place in bank performance.
2. The study finds a significant impact of loans ratio on bank performance. This conclusion seems logical because as more loans are granted to customers increase, as more profit is achieved by the bank. This finding is in agreement with Naifar ((2010),
3. The analysis of the impact of bank size on bank's performance shows that bank size is significantly affecting bank performance. Total assets of each included bank had been used as an indicator, for the size of each, so banks of larger total assets, are considered with larger size, and the opposite is correct. In Occasion, the study finds that no large differences in size of listed commercial banks at ADX. This finding is in agreement with Tariq and others (2014), Mashamba (2014), Shah and Jan (2014), Banna, Ahmad, and Koh (2017), Tariq and others (2014), Al Karim and Alam (2013), et al.

4. The study finds that capital adequacy of listed commercial banks at ADX, has a significant effect on the performance of these banks. Capital adequacy should follow Basil agreement, where the committee increased the ratio of capital to the total investments in the bank. The increase in the ratio of capital may come as a result of its effect on performance. This finding is in agreement with Banna, Ahmad, and Koh (2017), and Tariq and others (2014).
5. The study finds a significant effect of management efficiency on the financial performance of commercial banks. Despite that management is authorized to take important decisions, but data analysis reveals that a negative significant effect of management efficiency of listed commercial banks at ADX. This means that costs were outside the control of managements, when these costs are proportioned to income. This conclusion agrees the conclusions of Mazadzi and Maseya (2015), Ongore and Kusa, (2013), and Teker, Teker, and Kent (2011).
6. Liquidity of banks was also among the internal variables that the study takes into consideration. The study demonstrates that there is a significant effect of liquidity on commercial banks performance. This conclusion agrees the conclusions of Widyastuti, Purwana, and Zulaihati (2017), Boolaky and Aahummud, (2015), Ongore and Kusa, (2013), et al.
7. With regard to Tobin's Q, the study demonstrates a significant effect of this market assumed determinant on the performance of commercial banks. Tobin's Q is a market-based determinant, so managements of firms have no enough influence on this value. In other words, the market value to total assets ratio of banks, has an impact on commercial bank performance. This finding is in agreement with Al Karim and Alam (2013).
8. Rate of inflation as a macroeconomic factor has a significant effect on the performance of listed commercial banks at ADX. This macroeconomic factor can't be controlled by commercial banks' managements, but despite that, it has a significant effect on the performance of commercial banks. This finding agrees the findings of Boolaky and Aahummud (2015), Jaber (2014), Tariq and others (2014), and Ongore and Kusa, (2013).

9. GDP of UAE also has no significant impact on bank performance. This factor is also a macroeconomics variable, so it can't be influenced by managements of banks, because it is outside control of commercial banks managements.

In brief, the analysis of data reveals that the entire group of independent variables has a significant effect on the performance of listed commercial banks at ADX. In addition, the study shows that loan ratio, bank size, capital adequacy, management efficiency, bank liquidity, Tobin's Q, and the rate of inflation, each of which, has a significant individual effect on the performance of listed commercial banks at ADX.

5.3 Recommendations

As mentioned above, managements of commercial banks have control over the internal determinants; and can influence each of these determinants. In opposite, managements of commercial banks have no control over the external determinants, so these managements can't influence these determinants, especially the rate of inflation, and GDP, as macroeconomic-based variables. Managements of commercial banks may have weak influence on market-based determinants, but its influence on macroeconomic-based measures is completely are unavailable. Therefore, the recommendations of the study focus on the internal determinants because the managements of banks can influence these determinants.

Since the study revealed a strong significant effect of bank size, and because total assets is the best indicator for size, managements of firms are invited to manage its assets carefully, whether these assets are liquid or illiquid assets. Liquid assets are less profitable than illiquid, but its management is very sensitive, because liquid assets can be liquidated or sold quickly within a short period of time, without loss. Maintaining fewer liquid assets by banks, may lead the bank for liquidity problems, and the bank will not be able to grant loans, or unable to pay its short-term financial obligations. Because, illiquid assets are more profitable, managers of commercial bank, should not maintain more of these assets to increase the profitability of banks. Therefore, managements of commercial banks are required to keep a balance of held

liquid and illiquid assets, because keeping fewer liquid assets and more illiquid assets may slightly increase the profits, but this situation leads the bank to difficulties and problems in satisfying borrowers of funds and in paying financial obligation on time, when they due. On the other hand, managements of banks, should not keep less illiquid assets, and more liquid assets, because it will not be able to achieve enough profits for shareholders. Therefore, managements of commercial banks are asked to select a balance between liquid and illiquid assets, and to give the size of banks enough attention.

Banks are also recommended to increase its capital, since enough capital when available, enables commercial banks to satisfy the requirements of customers, and leads to more profitable commercial banks. Regarding capital adequacy, commercial banks are required to follow Basel agreement, especially where recently, the agreement asks more capital to be used in commercial banks.

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