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RESEARCH ARTICLE

BANK SPECIFIC AND MACRO-ECONOMIC DETERMINANTS OF THE UNITED ARAB EMIRATES COMMERCIAL BANKS PROFITABILITY: A PANEL DATA ANALYSIS

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Abstract

This study attempts to identify the “Bank Specific and Macro- This study attempts to identify the “Bank Specific and Macro-economic Determinants of The United Arab Emirates Commercial Banks Profitability” measured by Return on Assets, Return on Equity and Net Interest Margin. The study uses bank-specific and microeconomic factors as independent variables. The bank-specific factors include bank size, capital adequacy, assets quality, liquidity, deposits, diversification, business mix, and efficiency, while the macroeconomic factors include real Gross Domestic Product growth, Inflation Rate, and Real Interest Rate. Regression models were used to relate bank profitability ratios to the independent variables built on panel data for the period 2013-2019 of sixteen commercial banks operating in the United Arab Emirates. The results of the study show that asset size, liquidity, off-balance sheet activities, and diversification have significant impact on profitability as measured by the Net Interest Margin. In addition, loans under follow-up to total loans, and managerial efficiency are found to be highly significant variables of profitability in the context of the United Arab Emirates commercial banks as measured by Return on Assets and Return on Equity. Furthermore, diversification has a significant impact on profitability as measured by Return on Assets. The remaining bank-specific factors (capital adequacy, loans to total assets, liquidity, deposits to assets ratio, and operating expenses to total assets ratio) and macroeconomic factors have no significant effect on bank profitability. The results of the study suggest that banks can improve their profitability through maintaining high operating income, decreasing the size of non-performing loans, full utilization of liquid assets, more concentration on the main activities, efficiently managing their operating expenses, and taking advantage of the Gross Domestic Product growth, inflation, and Interest Rate changes to improve the bank’s performance and profitability. In addition, it is recommended to make further studies on the banks’ performance with an expanded scope which is to be extended to other industries.

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Introduction: -

Banks are the most important pillar of a country's financial system and economic growth through their role of providing finance, capital, and financial services to individuals and firms in all economic sectors as well as the creation of jobs. The economic situation of any country reflects the healthiness of its banking sector, where a reliable and strong banking system in any country plays a vital role in the economic growth and sustainability of the economic development of that country. On the other hand, a weak and inefficient banking system could lead to a major systematic crisis and disaster for the economy which becomes noticeably clear during the financial crisis. So, a healthy and profitable banking sector will make the economy better in facing negative shocks and contribute to the stability of the financial system (Athanasoglou, Brissimis, & Delis, 2005). Therefore, it is important to understand the factors that affect the profitability of the banking sector.

In any country, banks support the economic growth through financing the productive investments by the available funds (Tobash&Dhanka, 2014; Tobash, 2016) taking into consideration that the banking system aims mainly to make a considerable profit and to have a sufficient level of liquidity and financial resources for lending, and to have a good quality of services to customers. Hence, the importance of bank profitability in the economy can be determined at the micro level as profit is a determinant and is required for any competitive banking institution. Also, at the macro level, a profitable banking sector should be able to absorb external negative shocks and to achieve the stability of the financial system.

The United Arab Emirates (UAE) banking industry became one of the most dynamic in the region and plays a very important role in the economic growth and development of the UAE through the mobilization of financial resources in meeting the needs of individuals for financing and providing funds for the support of all other sectors and the national economy. The UAE has 46 commercial banks, out of which 19 are national banks with 697 branches including 7 Islamic banks and 27 Foreign Banks with 128 branches. In addition, the UAE has 2 Investment Banks.

There are many factors that may affect the banks' performance. However, the determinants of a banks' profitability might be changed as the macroeconomic and legal environment changes. Therefore, examining the profitability determinants of the banking sector is of a great interest in developed economies. In emerging economies like the UAE's, the number of studies that focus on profitability of commercial banks is limited. In this context, the study of Bank Specific and Macro-economic Determinants of The United Arab Emirates Commercial Banks Profitability will be of greater interest for the UAE Central Bank, commercial banks themselves, policymakers, and finance scholars. This reflects the importance of examining and understanding the determinants of bank profitability which is essential and pivotal to the stability of the economy as far as the crucial role of the banking sector in the welfare of the economy is of concern. Accordingly, this research paper attempts to study the banks' specific and macro-economic determinants of the United Arab Emirates commercial banks' profitability over the period 2013-2019.

Problem Statement

Banking is an industry that grows rapidly and works in a changing environment with many factors that affect the performance of the industry, and continuously reshape the trend towards competitiveness and high quality of services. Accordingly, each bank is trying to achieve a good level of profitability and enhance the overall performance to be in a better position compared to the competitors in the financial system. This study will identify the key elements that have an impact on the performance of UAE commercial banks.

Objectives of the Study: -

The main objectives of this study are to identify the determinants of bank-specific characteristics as well as macroeconomic variables of The United Arab Emirates commercial banks and to examine the effect of the main bank specific internal factors along with the main macroeconomic external factors on the profitability performance of UAE commercial banks from the years 2013 to 2019.

Significance of the Study

This study brings the attention of bank managers and policy makers to the importance of determining and investigating the main bank specific and macroeconomic factors that affect the profitability performance of commercial banks. On the managerial level, it helps the decision makers in figuring out the actions that can be taken to improve the performance of the banks. On the regulatory level, regulators of banks are interested in the protection of the banking system and the confidence of the public. Investors and depositors can also gain benefits from this study through knowing the bank's performance and the factors that impact this performance which defiantly affect

their deposits and investment decisions and whether they should put their money in banks or invest it in other businesses and what factors affect the performance of banks.

The study also brings the attention of other researchers who are willing to investigate and make more studies on the other internal and external factors that might affect the overall performance of the UAE banking sector.

Literature Review and Previous Studies: -

After the early studies on bank profitability prepared by (Short, 1979) and (Bourke, 1989), there were numerous research papers held recently to identify the internal and external determinants of bank profitability. The internal determinants are related to bank management and are called micro or bank specific determinants of profitability (Gungor, 2007), which include bank specific financial ratios that represent capital adequacy, cost efficiency, liquidity, asset quality, and size while the external determinants are reflecting economic and legal environments that affect the operation and performance of banks including economic growth, inflation, market interest rates and ownership. However, some empirical studies on bank profitability have focused on a specific country such as the USA (Berger, 1995; Angabazo, 1997), Colombia (Barjas, Steiner, & Salazar, 1999), Malaysia (Guru, Staaunton, & Balahanmugam, 2002; Ong & Teh, 2013), Brazil (Afanasieff, Lhacer, & Nakane, 2002), Greece (Mamatzakis & Ramoundo, 2003; Kosmidou, 2008), Tunisia (Naceur, 2003), India (Badola & Verma, 2006), China (Heffernan & Fu, 2008), Switzerland (Dietrich & Wanzenrid, 2009), Japan (Lui & Wilson, 2010), Pakistan (Javaid, Anwar, Zaman, & Gafoor, 2011), UK (Saeed, 2014), Tanzania (Kapaya & Gwahula, 2016), Nigeria (Ebenezer, Bin Omar, & Syahida, 2017), and India (Al-Homaidi, Tabash, Farhan, & Almaqtari, 2018). while others aimed at analyzing bank profitability in groups of countries such as (Molyneux & Thornton, 1992), (Demirguc-Kunt & Huizinga, 2001), (Abreu & Mendes, 2000), (Athanasoglou, Brissimis, & Delis, 2005).

In an earlier study, (Berger, 1995) finds a positive relationship between the return on equity and the capital asset through the investigation of the relationship between the two factors for a sample of US banks for the period starting in year 1983 to 1992. While investigating the relationship between the interest margin and other factors on a sample of US banks for the period starting year 1989 to year 2003, (Angabazo, 1997) finds a positive relation between bank interest margin and management efficiency, default risk, opportunity cost of non-interest-bearing reserves and leverage.

In a study on the effects of the financial liberalization on the Colombian banks' interest margin after the liberalization, (Barjas, Steiner, & Salazar, 1999) finds that loan quality increased and overall spread has not declined. The relevance of the different factors behind the bank spreads are affected by such measures. In another study by (Guru, Staaunton, & Balahanmugam, 2002) on a sample of seventeen Malaysian commercial banks from year 1986-1995, it was found that expenses management is one of the most important factors reflected in the high bank profitability. In addition, inflation is found to have positive effects on bank performance. However, a high interest ratio is associated with low bank profitability. Also, in a study on investigating the determinants of bank interest spreads using macro and micro variables in Brazil, (Afanasieff, Lhacer, & Nakane, 2002) find that macroeconomic variables have the most effect on bank interest spread.

In Greece, a study prepared by (Mamatzakis & Ramoundo, 2003) shows that the variables given high attention by a bank's strategic planning (i.e., personnel expenses, loans to assets ratio, equity to assets ratio) are the ones that highly affect profitability. The study also finds that the economies of scale, the size of the market and the supply of money are significantly having an impact on profitability. (Naceur, 2003) investigates the effect of banks characteristics, final structure, and macroeconomic indicators on bank's profitability in the Tunisian banking industry for the period of 1983 to 2000. He finds that inflation and growth rates have a negative effect on a bank's profitability while stock market development has a positive impact on the same factor.

(Badola & Verma, 2006) studied the determinants of profitability of public sector banks in India for the years 1991 to 2004. They concluded the non-interest income, operating expenses, provision contingencies and bank spread have significant impact on the net profits. (Kosmidou, Tanna, & Pasiouras, 2006) examines the determinants of performance of Greek banks during the period of the EU financial integration (1990-2002) and found the well-capitalized banks, lower cost to income ratios, and growth of gross domestic product (GDP) have a positive relationship on the high return on average assets (ROAA), while inflation has a significant negative impact. Also, money supply growth has no significant impact on profits, whereas the assets to GDP ratio, stock market capitalization to banks assets and concentration are all statistically significant and are negatively related to ROAA.

(Heffernan & Fu, 2008) studied the factors that affect the performance of Chinese banks from year 1999 to 2006 and examined four measures of performance to identify which one, if any, is superior. The independent variables include the standard financial ratios, those which reflect more recent reforms (listing, bank type, the extent of foreign ownership) and macroeconomic variables. They concluded that the economic value added, and the net interest margin do better than the more conventional measures of profitability, namely ROAE and ROA. They also found that the financial ratios and some macroeconomic variables affect the profitability of Chinese banks. The study also finds that the type of bank influences profitability, while bank size does not. Neither the percentage of foreign ownership nor bank listings has a clear effect.

A research paper on the factors that determine the profitability of commercial banks in Switzerland prepared by (Dietrich & Wanzenried, 2009) found that GDP growth variable, fast increase in the bank's loan volume compared to the market, and a better capitalized bank have a positive effect on profitability. On the other hand, the effective tax rate and the market concentration rate have a significant negative impact on bank profitability in Switzerland. However, banks with a higher interest income share are less profitable. (Lui & Wilson, 2010) investigate the factors that affect the Japanese bank's profitability following the major financial crisis that affected the country's economy in the mid-1990s. They concluded that the growth in Gross Domestic Product (GDP), the industry concentration, and the extent of stock market development have a high impact on the profitability of Japanese banks. However, they found evidence that well capitalized, efficient banks, with lower credit risks tend to outperform less capitalized, less efficient counterparts with higher credit risks.

In Pakistan, (Javaid, Anwar, Zaman, & Gafoor, 2011) found in a study of examining the determinants of bank profitability that equity and deposits have a significant impact on profitability. They also found that a higher total asset may not necessarily lead to higher profits and that higher loans contribute towards profitability, but their impact is not significant. Also, in a study prepared by (Ong & Teh, 2013) on the determinants of Malaysian commercial banks' profitability during the period of 2003 to 2009, they concluded that the ROA is the best profitability measure. All bank-specific determinants affect bank profitability significantly in an anticipated way. However, no evidence is found to support the effect of macroeconomic variables on banks' profitability.

(Saeed, 2014) studied the effect of bank-specific, industry-specific, and macroeconomic variables on UK bank profitability from the years 2006 to 2012. He found that the bank size, capital ratio, loan, deposits, liquidity, and interest rate have positive relationships with ROA and ROE while GDP and inflation rate have negative relationships with the same factors. (Kapaya & Gwahula, 2016) investigated the impact of bank-specific, industry-specific and macroeconomic determinants on Tanzanian banks profitability from the years 1998 to 2010. The findings indicated that credit facilities, capital adequacy, credit risk, diversification ratio, bank risk and financial market development have significant impacts on ROA. (Ebenezer, Bin Omar, & Syahida, 2017) examined the bank-specific and macroeconomic determinants in Nigerian banks profitability from the years 2010 to 2015. The findings show that capital adequacy, liquidity, the macroeconomic variable, and GDP growth have significant impacts on bank profitability. However, efficiency ratio has a negative impact on bank profitability.

A study by (Al-Homaidi, Tabash, Farhan, & Almaqtari, 2018) investigated the determinants of Indian commercial banks profitability, which was measured by three important variables, namely Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM). In addition to the Gross Domestic Product (GDP), inflation rate, interest rate and exchange rate as macroeconomic determinants, the study also uses bank-specific factors which include bank size, assets' quality, capital adequacy, liquidity, operating efficiency, deposits, leverage, assets management and the number of branches as an independent variable. The study concluded that all bank-specific factors, except the number of branches, have significant impacts on profitability as measured by NIM. It was also found that all macroeconomic determinants used in the study were found to be significant with negative impacts on Indian commercial banks profitability. However, bank size, number of branches, assets management ratio and leverage ratio are highly significant variables of profitability in the context of Indian commercial banks as measured by ROA.

The first study to investigate a multi-country setting was prepared by (Molyneux & Thornton, 1992), who investigate the determinants of bank profitability for a group of 18 European countries for the period of 1986 to 1989. They concluded that there is a significant positive impact of the level of interest rates in each country, bank concentration and government ownership on the return on equity. Also, another study by (Demirguc-Kunt & Huizinga, 1999) was prepared to examine the determinants of bank profit and net interest margins, using a comprehensive set of bank specific characteristics, as well as macroeconomic conditions, taxation, regulations,

financial structure, and legal indicators for 80 developed and developing countries, both in the period 1988-1995. The study concluded that foreign banks have a higher profitability than domestic banks in developing countries, while in the developed countries, foreign banks have lower profitability compared to local banks. However, the overall conclusions of the study show that there is a positive relationship between the capital ratio and financial performance. The study was followed by another study by (Abreu & Mendes, 2000) to investigate the determinants of a bank's interest margins and profitability for some European countries. The conclusions show that well-capitalized banks have lower expected bankruptcy costs and better profitability.

(Athanasoglou, Delis, & Staikouras, 2008) studied the effect of a selected set of determinants on banks profitability in the South Eastern European region over the period of 1998-2002. The study concluded that concentration has a positive relationship with bank profitability and inflation has a strong effect on profitability while real GDP per capita fluctuations do not have a significant impact on banks' profitability.

(Zitun, 2012) investigated some influential factors (foreign ownership, banks-specific variables, and macroeconomic factors) on Islamic and conventional banks on the bank's profitability in the Gulf Cooperation Council (GCC) countries during the period of 2002-2009. The results show that the bank's equity is important in explaining and increasing conventional banks profitability only. The cost-to-income had a negative and significant impact on Islamic and conventional banks' performance. Additionally, the estimated effect of size provides evidence of economies of scale in Islamic banking using the ROE, while it is not significant for conventional banks. Foreign ownership, however, does not improve Islamic and conventional banks performance. Furthermore, the bank's age and banking development have no effect on bank performance. Finally, GDP is positively correlated to the bank's profitability, while inflation is negatively correlated to the bank's profitability.

Hypotheses

1. H1: Bank Size (Log. A) is significantly a determinant of bank profitability.
2. H2: Bank profitability has a positive relationship with Equity to Total Asset Ratio (CA).
3. H3: Bank profitability has a positive relationship with Loans to Total Assets Ratio (LA).
4. H4: Bank profitability has a negative relationship with Loan Under-Follow-up to Total Loans Ratio (LFA).
5. H5: Liquid Assets to Total Assets Ratio (LQD) has a negative relationship with bank profitability.
6. H6: Deposits to Total Assets Ratio (DP) has a negative relationship with bank profitability.
7. H7: Bank profitability has a positive relationship with Non-Interest Income to Total Assets Ratio (OBA).
8. H8: Bank profitability has a positive relationship with Operating Income to Total Assets Ratio (DSN).
9. H9: Operating Expenses to Total Assets Ratio (OEM) has a negative relationship with bank profitability.
10. H10: Bank profitability has a negative relationship with Operating Expenses to Interest Income (ME).
11. H11: Bank profitability has a positive relationship with GDP growth.
12. H12: Inflation (INF) has a negative relationship with bank profitability.
13. H13: Real Interest (RIR) rate has a negative relationship with bank profitability.

Methodology: -

Variables

The researcher includes three dependent variables and thirteen independent variables to examine the Bank Specific and Macro-economic Determinants of The United Arab Emirates Commercial Bank's Profitability. The independent variables are divided in two sub-categories as bank-specific and macroeconomic determinants of bank profitability (figure 1). Both types of variables are defined as follows: -

Dependent Variables

The bank's profitability as a dependent variable is typically measured by return on asset (ROA), return on equity (ROE), and net interest margin (NIM) as the majority of previous profitability studies commonly used (Garcia & Guerreiro, 2016; Naeem, Baloch, & Khan, 2017; Singh & Sharma, 2016; Tobash, 2016; Tiberiu, 2015; Zampara, Giannopoulos, & Koufopoulos, 2017). ROA is a comprehensive financial ratio that measures the overall profitability of a bank and indicates how much income the management can make out of the assets. Hence, ROA can be used to indicate the efficiency of bank management in converting assets into revenue (Goddard, Molyneux, & Wilson, 2004). ROA is defined as net income divided by total assets and is expressed as a percentage (Rose, 2002). The ROE measures bank accounting profits per dollar of book equity capital (Rose, 2002) and shows the ability of bank

management in handling the shareholders' funds to generate profits. It is defined as net income divided by average total equity. This study uses return on assets (ROA) and return on equity (ROE) as proxies for a bank's profitability. The return on assets (ROA) is a general measure for bank profitability that reflects bank ability to make income on its sources of fund. The second measure, ROE, is defined as net profit divided by shareholders' equity and reflects how a firm utilizes its shareholder's wealth to generate revenue (Olalere & Wan, 2016). The third measure, NIM, is defined as net interest income divided by total assets. This Variable is an important measure of bank efficiency and performance used in previous studies (Kosmidou, 2008; Heffernan & Fu, 2008). It focused on the profit earned on interest. However, a high NIM indicates a higher bank profitability performance provided the asset quality is kept well. It is defined as the net interest income minus net interest expenses over the total assets. The interest income is referring to the income that a bank collects from assets such as interest charged on loans, overdrafts, and trade finance. The interest expense is the amount of interest that banks pay for savings and other accounts.

Bank Specific Independent Variables

The bank's management and policy objectives determine the bank specific determinants as internal factors including asset size, capital adequacy, asset quality, liquidity, deposit, and income-expenditure structure. The study uses the following eleven bank-specific variables as internal determinants of bank profitability:

Asset size:

Bank size is represented by the natural logarithm of total asset (log A) which is used in most finance literature as a proxy for bank size. In general, the bank size is expected to have a positive impact on profitability (Smirlock, 1985). However, the results from previous studies have different outcomes; (Spathis, Kosmidou, & Doumpos, 2002) studied the performance of small and large Greek banks over the period of 1990-1999 and found that large banks were more efficient. (Mamatzakis & Ramoundo, 2003) found that economies of scales significantly influence profitability. On the other hand, (Kosmidou, 2008) found that bank size is negatively related to bank profits in the research of investigating the impact of bank-specific characteristics, macroeconomic conditions and the financial market structure on UK owned commercial banks' profits. As per the well-documented literature, the researcher uses the banks' total assets as a proxy for its size to account for size related economies or diseconomies of scale.

Capital adequacy:

Capital adequacy (CA) is a measure of equity to total assets and is considered as a basic ratio for capital strength. It gives an indication on whether the bank needs an external funding or not, where the higher is the ratio and the lower is the need for external funding and thus the higher the profitability of the bank. This measurement shows the ability of a bank to absorb losses and handle risk exposure with shareholders. Equity to total assets ratio is expected to have a positive relation with performance wherein well-capitalized banks face lower costs of going bankrupt which reduces their costs of funding and risks. (Hassan & Bashir, 2003; Alper & Anbar, 2011) indicated that the well-capitalized banks have a greater NIM and resulted in a high profit. (Mamatzakis & Ramoundo, 2003; Staikouras CH & Wood, 2003), and (Athanasoglou, Delis, & Staikouras, 2008) concluded that the equity to total assets has a positive relation with profitability. This supports the argument that a well-capitalized bank usually achieves higher profitability. Therefore, this study expects that the relationship between equity to total assets and profitability is positive.

Asset quality:

This measurement uses two ratios: loans to total assets (LA) ratio which measures the income source of a bank and it is expected to positively affect the profitability unless the bank takes on unacceptable levels of risk (Alper & Anbar, 2011). The other ratio is Loans under follow-up (net) (Loans under follow up - specific provisions) to total loans ratio (LFA). This ratio is an important measurement of asset quality and indicates the changes in the health of a bank's loan portfolio which affects the performance of the bank negatively (Aydogan, 1990). However, the higher the ratio, the poorer the quality and therefore the higher the risk of the loan portfolio.

Liquidity (LQD):

This ratio is a measurement of liquidity which measures the liquid assets to total assets. The higher this percentage is, the more liquid the bank is. Insufficient liquidity is one of the major reasons that would cause bank failures. However, holding liquid assets has an opportunity cost of higher returns. (Bourke, 1989) finds a positive significant link between bank liquidity and profitability. (Heffernan & Fu, 2008) indicated that the assets' liquidity has a positive effect on ROA and ROE, but it has an inverse impact on NIM. However, banks may choose to increase their cash holding to minimize risk in time of instability unlike (Molyneux & Thornton, 1992) who concluded in their study that there is a negative correlation between liquidity and profitability levels.

Deposits (DP):

There are different sources of a bank's funding with the main one being the deposits which are the lowest cost of funding. Banks transformed most deposits into loans; However, the more deposits that are transformed into loans, the higher the interest margin and profit. Therefore, deposits have a positive impact on the profitability of the banks.

Off-balance sheet activities (OBA):

This ratio measures the non-interest income (net) to total assets. However, non-interest income includes income from net fees and commissions, incomes/expenses, dividend income, foreign exchange profits and proceeds from sales of investment securities (net), as well as other operating income. This ratio is a measure of diversification and business mix. (Sufian, 2011; Krakah & Ameyaw, 2010) found a positive correlation between off-balance sheet activities and bank performance and thus this study expects a positive connection.

Diversification (DSN):

Diversification ratio is measured by ratio of operating income to total assets. (Masood & Ashraf, 2012) reported that there is a positive relation between banks' profitability and higher assets management ratio.

Operating expenses management (OEM):

This ratio is defined as operating expenses to total assets. Efficient operating expenses management reduces bank's cost structure and hence improves bank profitability. A higher ratio implies in efficient operating expenses management and deteriorates bank profits. On the contrary, a low ratio indicates effective operating expenses management which will ultimately be translated into higher profits. This being so, the study will assume negative relationship between the OEM variable and profitability measures.

Managerial Efficiency (ME):

(Rashid & Jabeen, 2016) defined managerial efficiency as a percentage of operating expenses divided by interest income. The lower the operating efficiency ratio, the greater the management efficiency is.

Macro-economic Independent Variables

Banks' profitability is expected to be affected by the macroeconomic variables. In the literature, three macroeconomic variables are used as external determinants: Annual real gross domestic product growth rate (GDP), annual inflation rate (INF) and real interest rate (RIR). This study will also use GDP, INF, and RIR.

Annual real GDP growth rate: Gross domestic product (GDP) is widely used as a microeconomic indicator. It is a measure of the total economic activity and it is adjusted for inflation. GDP is the income generated by the output and production of a country's economy during a period. The GDP growth is used as a proxy measure for GDP and is expected to affect the supply and demand for loans and deposits. When an economic boom occurs, the demand for credits or loans increases in addition to the quality of assets. In this case, banks can make a higher profit. However, when the economy slows down, the GDP growth slows down as well. Accordingly, the lending tends to decrease. In conclusion, GDP growth can be used as an indicator of the demand for banking services and is included as a variable that influences bank profitability (Kosmidou, 2008; Pasiouras & Kosmidou, 2007; Heffernan & Fu, 2008). In this context, this study expects a positive relationship between bank profitability and GDP development as the demand for lending increases (decreases).

Annual inflation rate (INF):

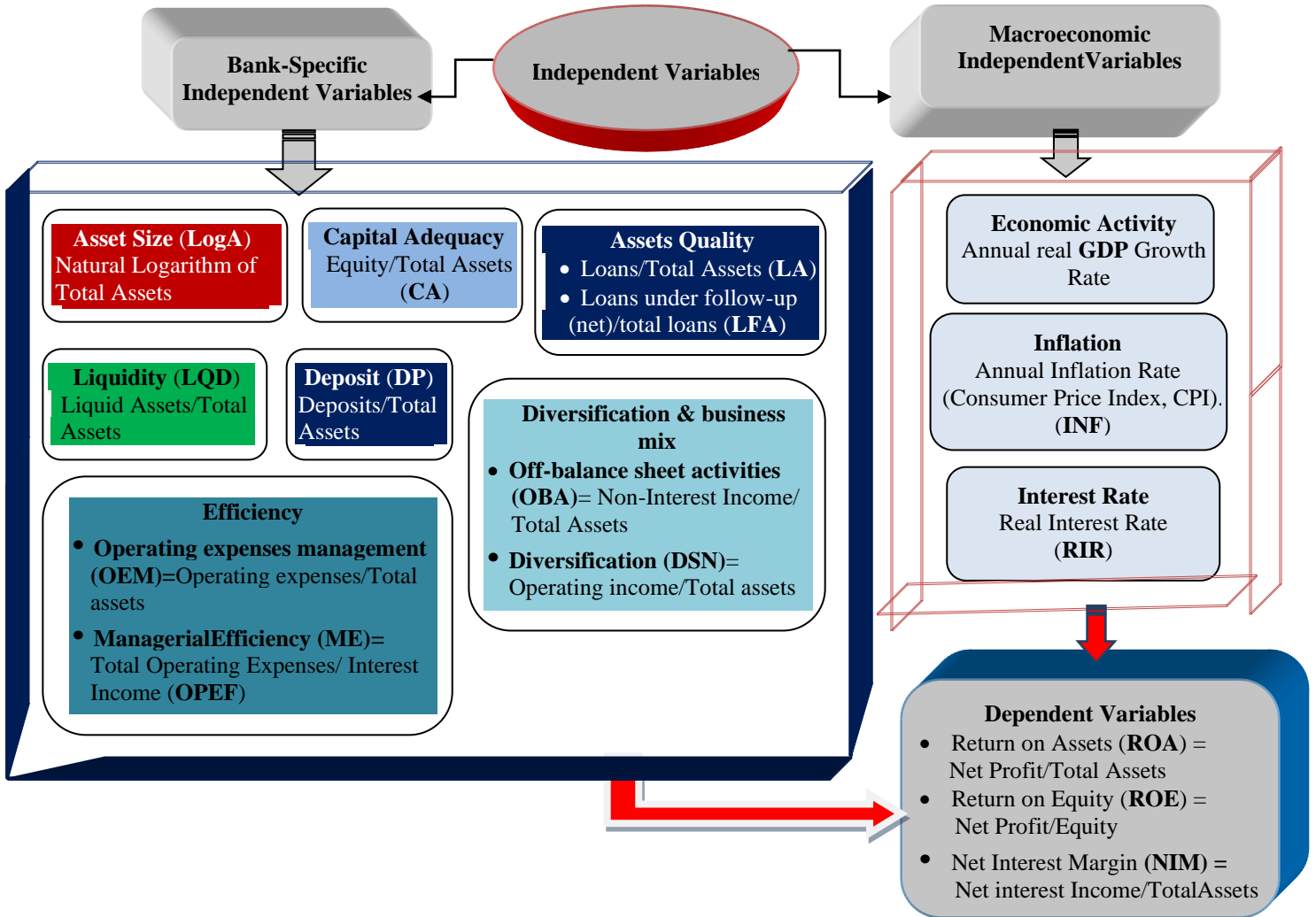
This measures the overall percentage increase in Consumer Price Index (CPI) for all goods and services. Inflation erodes the purchasing power of consumers and affects the real value of costs and revenues. The relationship between the inflation and bank profitability has been introduced by (Revell, 1980) and may have a positive or negative effect on profitability depending on whether it is anticipated or unanticipated (Perry, 1992). If an inflation rate is anticipated, banks can adjust the interest rate to increase revenues over costs. On the other hand, if the inflation rate is not anticipated, banks cannot make the proper adjustments for the interest rate and thus costs may increase faster than revenues. However, studies found a positive impact between inflation and profitability (Hassan & Bashir, 2003; Kosmidou, Tanna, & Pasiouras, 2006). This study expects a positive relationship between inflation and profitability as well.

Real interest rate (RIR):

The interest rate refers to the lending interest rate that a bank gain. Many previous studies brought up evidence of a positive interest rate effect on banks' profitability where bank profits increase with rising interest rates (Samuelson,

1945). On the other hand, (Rashid & Jabeen, 2016) reported a negative effect of interest rate on banks' performance whereas (Yahya, Akhtar, & Tabash, 2017) found a positive effect. Real interest rate is calculated by the Fisher equation.

Figure 1: - Theoretical Framework of the study.



Data and Research Method: -

This study uses a pooled time-series and cross-sectional data. The data was collected from the available financial reports of 16 local and foreign commercial banks operating in the United Arab Emirates banking sector for the period of 2013 to 2019 consisting of 112 observations. The bank-specific variables are derived from the income statements and balance sheets of commercial banks. The financial statements are collected from the published audited annual financial reports through the websites of the commercial banks. However, the macroeconomic variables, the data of economic growth, inflation rate and interest rates are obtained from the United Arab Emirates Central Bank's published annual reports. The real interest rate is calculated by the Fisher equation.

The researcher uses panel data to examine the determinants of bank profitability. Panel data or longitudinal data is a set of data that includes both time series and cross-sectional elements and known as a longitudinal data. In panel data models, the data set consists of n cross-sectional units, denoted $i = 1 \dots N$, observed at each of T time periods, $t = 1 \dots T$. In a data set, the total observation is $n \cdot T$. Many studies have used a structure of panel analysis such as (Chowdhury & Rasid, 2017; Brooks, 2014; Masood & Ashraf, 2012) and this study follows the same structure and context of these studies using the following regression model: $Y_{it} = \alpha + \beta X_{it} + U_{it} \dots (1)$

where Y_{it} is the dependent variable (profitability), α is the intercept term, β is a $k \times 1$ vector of parameters to be estimated on the explanatory variables (coefficient of explanatory variables), and X_{it} is a $1 \times k$ vector of observations on the explanatory variables, $t = 1, \dots, T$; $i = 1, \dots, N$.

The practical and operational form, Equation (1), can be defined as follows:

Profitability = f (Bank-specific variables; Macroeconomic variables). Profitability is measured by ROA, ROE, and NIM. Bank-specific variables comprised of Asset size, Capitaladequacy, Assets quality (Loans/Total Assets & Loans under follow-up (net) /Total Loans), Liquidity, Deposits, Diversification & business mix (off-balance sheet activity: Non-interest income/Total assets & Diversification: Operating income/Total assets), and Efficiency (Operating expenses management: Operating expenses/Total assets & Managerial efficiency: Total operating expenses/Interest income). However, macroeconomic variables are “GDP, Inflation rate, and Real interest rate”. Thus, Equation (1) could be restructured and expanded using the three proxies of profitability as follows:

$$ROA_{it} = \alpha_i + 1 \text{Log Ait} + 2CA_{it} + 3L_{ait} + 4LFA_{it} + 5LQD_{it} + 6DP_{it} + 7OBA_{it} + 8DSN_{it} + 9OEM_{it} + 10ME_{it} + 11GDP_{it} + 12INF_{it} + 13RIR_{it} + \epsilon_{it} \text{----- (1-a)}$$

$$ROE_{it} = \alpha_i + 1 \text{Log Ait} + 2CA_{it} + 3L_{ait} + 4LFA_{it} + 5LQD_{it} + 6DP_{it} + 7OBA_{it} + 8DSN_{it} + 9OEM_{it} + 10ME_{it} + 11GDP_{it} + 12INF_{it} + 13RIR_{it} + \epsilon_{it} \text{----- (1-b)}$$

$$NIM_{it} = \alpha_i + 1 \text{Log Ait} + 2CA_{it} + 3L_{ait} + 4LFA_{it} + 5LQD_{it} + 6DP_{it} + 7OBA_{it} + 8DSN_{it} + 9OEM_{it} + 10ME_{it} + 11GDP_{it} + 12INF_{it} + 13RIR_{it} + \epsilon_{it} \text{----- (1-c)}$$

Where i indicates an individual bank; t refers to year; β_1 : β_{14} are the coefficients of determinant variables and ϵ is the error term; and all other variables are as defined in Figure 1. These models have been used to examine the factors that may determine banks’ profitability in the United Arab Emirates. The models were constructed based on the banks’ profitability in the United Arab Emirates as a function and is dependent on both bank specifics and macroeconomics. Each regression model was estimated using the fixed effects model. However, studies use the fixed effects or random effects models to estimate panel data models. In the fixed effects model, the individual-specific effect is a random variable that can be correlated with the explanatory variables. On the other hand, the rationale behind the random effects model is that, unlike the fixed effects model, the individual-specific effect is a random variable that is uncorrelated with the independent variables included in the model. The fixed effects model is an appropriate specification if we are to focus on a specific set of N firms and our inference is restricted to the behavior of these sets of firms (Baltagi, 2005). Also, to find which of these models is the most appropriate, the Hausman test can be conducted. In this study, the fixed effects model is used. There are 21 National banks including 4 Islamic Banks and 27 foreign commercial banks operating in the United Arab Emirates. However, a total of 16 commercial banks (13 local and 3 foreign (Table 1)) were used as samples in this study while other banks were excluded because the data is missing and is not complete. A total of 112 observations were obtained for the period of 2013 to 2019.

Table 1: - The sample of the study - Commercial Banks Operating in UAE.

1.	Abu Dhabi Commercial Banks	1.	Bank of Baroda
1.	Invest Bank	2.	HSBC Bank M. E. L.
3.	Al Masraf Bank	3.	Al Khaliji Bank
4.	Commercial Bank of Dubai		
5.	Emirates NBD		
6.	MASHRQ Bank		
7.	Bank of SHARJAH		
8.	Union Arab Bank		
9.	RAK Bank		
10.	Commercial Bank International		
11.	National Bank of Fujairah		
12.	NB of Um Al Quwain		
13.	Emirates Investment Bank		

Source: Central Bank of the United Arab Emirates, May 31, 2020.

Results and Discussion: -

Descriptive Statistics

The basic descriptive statistics of the variables shown in Table 2 indicates that, on average, banks' mean value for ROA, ROE and NIM were 0.0126, 0.0655 and 0.0266 respectively over the entire period from 2013 to 2019.

ROE has the highest mean value of 0.0655 and a range of 2.193. This implies that bank net profit before tax represents 0.0655% of shareholders equity in the United Arab Emirates (UAE). The statistics shows that, among dependent variables, ROA has the lowest mean value of 0.01264 which implies that banks, on average, are earning AED 0.01263 net income per AED 1 of total assets which is an extremely low or unsatisfactory return. The lowest ROA was -0.105 and the maximum value was 0.0475. Among explanatory variables, bank size (Log A) had the highest mean value of 17.29 which indicates that banks have an average asset base of AED 872,094,514. OEM showed the highest standard deviation implying greater variability in operating expenses compared to total assets among banks. OBA variables show the lowest mean value of 0.0148 which indicates that the average Non-interest income was 0.0148% of total assets among banks while the means of the Liquidity ratio (LQD) and Managerial efficiency are 0.0259 and 0.0163 respectively, the minimum values are 0.00 and 0.00 respectively, and the maximum value is 2.97 for LQD and 0.048 for ME. The average growth rate of real GDP is approximately 0.031 (minimum: 0.005 and maximum 0.051 during the period of 2013 to 2019. When the mean of the inflation rate is 0.019, the real interest rate has a 0.024 mean value for the same period of 2013 to 2019. The averages of the loans to assets ratio (LA) and deposits to assets (DP) are approximately 0.58 and 0.66, respectively. Liquidity ratio (LQD) which is one of the important ratios for the bank amounts to 0.26 on average, while it varies between 0.00 and 2.97.

Table 2:- Descriptive Statistics-Dependent and independent variables (2013-2019).

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	112	-.1050	.0475	.012641	.0172586
ROE	112	-1.9703	.2226	.065498	.2155650
NIM	112	-.0130	.0771	.026571	.0130894
Log A	112	14.4120	20.3425	17.288227	1.3573821
CA	112	.0533	.9991	.182214	.1531822
LA	112	.0392	.7413	.576735	.1442856
LFA	112	.0002	.4047	.044713	.0469119
LQD	112	.0000	2.9654	.258967	.2952371
DP	112	.0684	.9009	.662270	.0984512
OBA	112	.0000	.0495	.014809	.0094459
DSN	112	.0038	.1046	.041577	.0154630
OEM	112	-8.2789	47.3705	1.141528	4.7045182
ME	112	.0000	.0476	.016264	.0091411
GDP	112	.0050	.0510	.031143	.0167089
INF	112	-.0120	.0410	.018571	.0155510
RIR	112	-.3430	.1383	.023561	.0434112
Valid N (listwise)	112				

Source: SPSS data analysis result

Multicollinearity diagnostic and Correlation

The correlation coefficients shown in table 3 are below 0.8 which clearly indicates that the research data is free from multicollinearity problems. According to (Cooper & Schindler, 2014), only variables with correlations coefficients of 0.8 and above must be eliminated in the regression model.

ROA, ROE, and NIM are used as proxy measures for bank profitability. The correlation between the variables shows that the ROA has a positive significant relation with OBA, DSN, and GDP (table 3). However, it has the highest strength of correlation with DSN and is supported by (Masood & Ashraf, 2012) who reported that there is a positive relationship between banks' profitability and the higher assets management ratio. Besides that, ROA has a negative relationship with DP which is supported by (Gul, Irshad, & Zaman, 2011) who concluded that there is a negative link between banks' profitability and deposits ratio. ROA also has a negative relationship with LFA. This result is supported by (Rani. & Zergaw, 2017) who argued that it is expected that the loans under follow-up to total loans have a negative impact on bank's profitability except when the bank is at unbearable risk levels.

ROE has a negative correlation with LFA and DP. The relationship between ROE and LFA indicates the changes in the health of the bank’s loan portfolio which affects the performance of the bank negatively (Aydogan, 1990). However, the higher the ratio, the poorer the quality and therefore the higher the risk of the loan portfolio. The ROE’s negative correlation with DP is supported by (Olson & Zoubi, 2011). This means that the higher the deposits to total assets ratio the lower the ROE is in United Arab Emirates banks; this would be due to the performance of the bank’s assets and other resources which make deposits as a secondary source of income to the UAE commercial banks.

NIM is positively significant to LA, DP, ME and RIR. This indicates that interest income from loans, deposits to assets ratio, managerial efficiency, and real interest rate are positively affecting NIM. This seems due to the large size of loans in the UAE commercial banks’ balance sheet matching with the inherited traditional activity of the banks. In addition, it is more often that the bank loan of a bank is the major asset that generates the major share of the bank’s income. Hence, the quality of the loan portfolio determines the profitability of the banks. The highest risk facing a bank is the losses derived from bad loans and it highly affects the performance of banks (Dang, 2011; Lui & Wilson, 2010). On the other hand, NIM has an inverse relationship with DSN and OEM. This is supported by (Mehta & Ganga, 2017) who argue that a bank’s operational efficiency had significant negative relationship with the NIM.

Table 3: - Correlations Matrix between Independent Variables.

ROA	1.00																
ROE	.884 **	1.00															
NIM	.244 **	.055	1.00														
Log A	.147	.170	.023	1.00													
CA	.10	.022	0.016	-.069	1.00												
LA	.017	-.93	.607 **	.084	-.035	1.00											
LFA	-.614 **	-.625 **	.017	-.119	.013	.319 **	1.00										
LQD	.066	0.042	-.076	.011	-.103	-.065	-.032	1.00									
DP	-.0238 *	-.268 **	.204 *	-.470 **	-.207 *	.349 **	.309 **	.005	1.00								
OBA	.195 *	.170	-.072	-.147	-.100	-.434 **	-.274 **	-.055	.009	1.00							
DSN	.329 **	.155	-.798 **	-.050	-.053	.254 **	-.159	-.087	.174	.541 **	1.00						
OEM	-0.052	-.005	-.229 *	-.181	-.066	-.359 **	-.104	.068	.166	.234 *	-.052	1.00					
ME	-0.04	-.076	.431 **	-.148	-.073	-.077	-.077	-.081	.129	.575 **	.710 **	.162	1.00				
GDP	.207 *	.137	.040	-.037	.060	.040	-.146	-.102	.036	.156	.127	.070	.029	1.00			
INF	.059	.10	.057	-.003	-.129	.085	-.114	-.017	.099	.035	.068	.092	-.006	.264 **	1.00		
RIR	.086	.021	.588 **	.169	.106	.336 **	.064	.023	-.015	-.172	.391 **	-.091	.231 *	-.197 *	-.338 **	1.00	

Source: SPSS data analysis result

Correlation is significant at the 0.01 level (2-tailed) and * Correlation is significant at the 0.05 level (2-tailed)

Regression analysis:

This study uses three proxy measures, namely return on assets (ROA), return on equity (ROE) and net interest margin (NIM) to measure the United Arab Emirates Commercial Banks’ Profitability. Table 4 exhibits the statistical results of the ANOVA test for ROA, ROE, and NIM. NIM has the highest F-value, 2872.046, followed by ROA, 11.220 and ROE, 6.789. All three models have the significant value of F as 0.000 (0.000 is lesser than 0.05) which indicates that all models are good to measure banks’ profitability.

Table 4: - ANOVA.

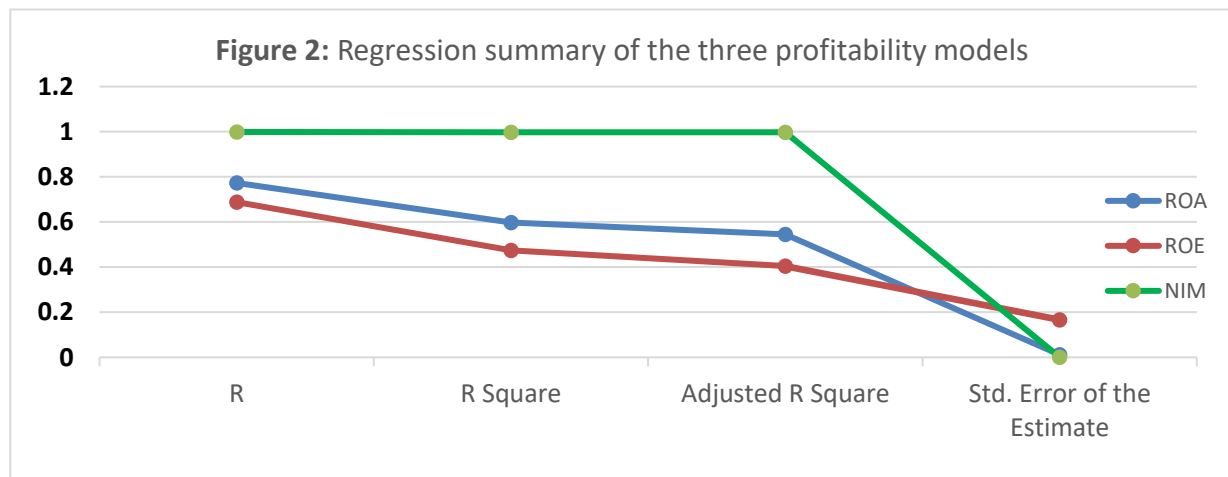
Model		Sum of squares	Df.	Mean square	F.	Significant
ROA	Regression	.020	13	.002	11.220	.000
	Residual	.013	98	.000		
	Total	.033	111			
ROE	Regression	2.444	13	.188	6.789	.000
	Residual	2.714	98	.028		
	Total	5.158	111			
NIM	Regression	.019	13	.001	2872.046	.000
	Residual	.000	98	.000		
	Total	.019	111			

Tables 5 and 6 show the model summary of regression results for all models. Among these three models, NIM model generates the highest R square, 0.997 (figure 2), which means that 99.7% of the variance in NIM is explained by thirteen independent variables considered in this paper and still leaves 0.03% unexplained. In other words, there are other additional variables that are important in explaining NIM that have not been considered in this paper. The R square for ROA and ROE model is 0.598 and 0.474, respectively. For the ROA model, the independent variables explain 59.80% of ROA. The ROE model generates the lowest R squares, wherein the sample only describes 47.40% of ROE and the remaining 52.60% is unexplained.

Table 5: - Regression model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
ROA	0.773	0.598	0.545	0.0116440
ROE	0.688	0.474	0.404	0.1664093
NIM	0.999	0.997	0.997	0.0007128

From the analysis, it is concluded that the NIM model is the most reliable model among the three profitability measures models providing the highest R square (figure 2) and it is better explained by bank-specific determinants and macroeconomic determinants that were employed in the study’s analysis. This reflects the importance of using the NIM as a profitability measurement among the other profitability models or measurements. This finding is inverse with the findings of (Rivard & Thomas, 1997; Golin J, 2001) who demonstrate that ROA is the best measurement of bank profitability as compared to ROE and NIM.



NIM suggested that there are four variables that have a significant relationship with bank profitability, namely LogA, LQD, OBA, and DSN (table 6). DSN is found to be the most critical determinant in the NIM model. It is found that DSN has positive impact on the United Arab Emirates commercial banks’ profitability which supports hypotheses H8. This result is supported by the findings of (Blessing Katuka, 2015). Bank size (logA) is highly significant and is positively related to NIM at a 5% level of significance. This positive relationship shows that the size of the bank has significant positive impacts on profitability; this result is matching with hypotheses H1 which stated that: bank size is significantly determinant of bank profitability. This shows the impact of bank size on

profitability. (Pasiouras & Kosmidou, 2007) investigated the factors influencing the profitability of domestic and foreign commercial banks in the European Union. They argue that big banks can benefit from economies of scales and achieve higher profit. (Bougatef, 2017; Chowdhury & Rasid, 2017; Petria, Capraru, & Ihnatov, 2015; Singh & Sharma, 2016) reported a positive effect of banks size on banks' profitability whereas (Gul, Irshad, & Zaman, 2011) found a negative effect on banks' profitability.

LQD is found to be significantly affecting the profitability of commercial banks measured by NIM with negative effect at a 5% level. This result supports H5 and indicates that the greater the ratio of liquidity, the more the cost of higher return is. Furthermore, inadequate liquidity levels may lead to a bank's failure. Prior studies have reported mixed evidence regarding the effect of liquidity on banks' profitability (Issn, Ebenezer, & Ahmad, 2017; Loh, 2017). OBA is also found to be significantly affecting the profitability of commercial banks measured by NIM with negative effect at a 5% level. This result has a reverse result with H7, where it is said that bank profitability has a positive relation with OBA. However, (Krasah & Ameyaw, 2010) found positive correlation between off-balance sheet activities and bank performance. Prior studies have reported mixed evidence regarding the effect of liquidity on banks' profitability (Issn, Ebenezer, & Ahmad, 2017; Loh, 2017). The impact of DSN on bank profitability is a clear-cut as the NIM model found that DSN is positively correlated to NIM and positively correlated to ROA, this is supported by (Masood & Ashraf, 2012) who concluded that there is a positive relationship between banks' profitability and the higher assets management or the diversification ratio. This implied that managing the operating income including interest income and expenses improves the profitability performance of banks. Banks can lower the cost of borrowing from externals and this results in higher profit. Therefore, banks should keep enough liquid assets.

The ROA model shows that LFA, DSN, and ME are determinants of bank profitability and are significant at 5%. DSN is the most critical determinant in the ROA model which again supports H8. This implies that operating income is the most important variable that positively affects ROA while (Lui & Wilson, 2010) were uncertain about the expected sign. However, LFA and ME are also determinants of the United Arab Emirates (UAE) profitability but with negative effect, which means that loans under follow-up and operating expenses have negative effect on banks' profitability in the UAE, this result is matching with hypotheses H4 and H10. This is supported by (Heffernan & Fu, 2008) who prove that loan loss is provisioning improved performance if the asset quality is sound. Hence, a bank must manage its expenses efficiently. Banks with enough liquid assets have lowered the risk to be insolvent as they can withstand the financial risk. The higher the LFA implies that the bank must set aside more reserves to cover the bad loans and lower the bank profitability.

From the ROE model, we can conclude that LFA is a determinant of bank profitability. LFA affects the bank profitability negatively and implied that lower loans under follow-up result in a higher ROE which means higher profitability. This result is in line with H4 and is supported by (Heffernan & Fu, 2008) who argued that LFA improves the bank profit as they discovered that LFA has positive relationship with ROA and NIM, but not with ROE. However, it is found that LA has no significant relationship with profitability at 5% level which indicates that loans to total assets is not a determinant of profitability, although, it is expected to have a negative impact on a bank's profitability except when the bank is at unbearable risk levels (Rani & Zergaw, 2017).

ME is also a determinant of bank profitability. It affects the bank profitability negatively which supports H10. (Marijana, Poposki, & Pepur, 2012; Petria, Capraru, & Ihnatov, 2015) argue that operating expenses contribute importantly and are a significant determinant of a bank's profitability. This argument is also supported by (Salike & Ao, 2017; Jara-Bertin, Moya, & Perales, 2014). They have provided evidence that operational efficiency is an important determinant that significantly explains a bank's profitability. However, total operating expenses to Interest income have negative impact on ROE. This shows the impact of operating expenses and income from interest on profitability. Regression results indicated that capital adequacy, loans to total assets, deposits, and operating expenses management have no impact on all models (ROA, ROE, and NIM) at a level of 0.05, which is not conforming to theoretical expectations (Obamuyi, 2013) and hypotheses H2, H3, H6, and H9.

The macroeconomic variables are not found to have a significant impact on UAE commercial banks' profitability. Therefore, they are not determinants of bank's profitability and this is supported by (Naceur, 2003) who examined the Tunisian bank profitability performance during 1990 to 2000; he found that GDP growth rates and inflation have no impact on bank profitability performance. However, this paper proposed that UAE commercial banks' profitability is affected by bank-specific determinants while the macroeconomic determinants such as GDP growth, interest, and inflation are seeming insignificant towards profitability performance. This result does not support the

hypotheses H11, H12, and H13. However, this is different from previous studies that found that GDP growth and inflation have a clear effect on the performance of the banking sector such as (Sufian, 2011). In addition, (Kosmidou, Tanna, & Pasiouras, 2006) found that Inflation and GDP growth are profitability determinants for banks in the UK. According to these researchers, the negative relationship between ROA and GDP growth indicates that high economic growth improves business environment and lowers bank entry barriers which increases competition and ultimately impacts bank profitability (ROA) negatively. In terms of interest rate, conflicting evidence was reported by prior studies on the effect of interest rate on banks' profitability. While (Rashid & Jabeen, 2016) reported a negative effect of interest rate on banks' performance (Yahya, Akhtar, & Tabash, 2017) found a positive effect.

Table 6: - Summary of regression results for bank profitability.

Independent variables	Dependent Variables								
	ROA			ROE			NIM		
	Coefficient	t. value	Significant	Coefficient	t. value	Significant	Coefficient	t. value	Significant
Log A	-.00006	-.059	.953	.004	.268	.790	.000	-4.153	.000
CA	.009	1.217	.227	.005	.049	.961	.000039	.082	.935
LA	.014	.997	.321	.197	1.013	.314	-.001	-1.242	.217
LFA	-.193	-6.918	.000	-2.670	-6.706	.000	.003	1.737	.085
LQD	.005	1.281	.203	.023	.421	.675	-.001	-2.305	.023
DP	-.026	-1.605	.112	-.261	-1.145	.255	-.001	-.833	.407
OBA	.085	.374	.709	3.048	.940	.350	-.989	-71.193	.000
DSN	.658	3.986	.000	3.048	1.292	.199	1.005	99.430	.000
OEM	.000	.697	.487	.002	.504	.615	-.000011	-.645	.521
ME	-.919	-4.692	.000	-7.766	-2.775	.007	-.011	-.883	.379
GDP	.074	1.022	.309	.473	.458	.648	.002	.339	.735
INF	-.074	-.890	.376	-1.233	-1.033	.304	.007	1.274	.206
RIR	-.018	-.467	.642	.011	.021	.983	.004	1.715	.090

Conclusions: -

Profitability is an important criterion to measure the performance of banks, especially in the changing environment of banking. This study examines the determinants of commercial bank profitability in The United Arab Emirates. For this aim, the panel data method (fixed effects model) is applied to data which is obtained from 16 banks' financial statements from 2013 to 2019. The current study concluded that asset size has a positive and significant effect on profitability. It suggests that larger banks achieve a higher NIM. Also, the positive and significant coefficients of the asset size variable provide evidence for the economies of scale theory. The ratio of loans under follow-up/loans is found to be negative and significantly impacts the ROA and ROE. This indicates that credit portfolio volume and weak asset quality negatively impact the return on asset. It is also concluded that the liquidity has negative effect on NIM. This indicates that keeping high liquid assets within the bank's assets structure negatively influences the net interest margin ratio and gives an indication of weak investment policy and uses of funds. Another bank-specific variable, non-interest income/assets ratio has a negative and significant effect on NIM. This indicates that greater bank activity diversification negatively influences returns. However, Operating income to total assets has a positive and significant effect on profitability. It suggests that banks who utilize their assets on the main activities will result in high operating income which is reflected positively and significantly on return on investments and net interest margin. ME is found to be having a negative effect on profitability as measured by ROA and ROE. This indicates that a greater operating expense to interest income is lowering The United Arab Emirates commercial banks' profitability. The remaining bank-specific factors (capital adequacy, loans to total assets, liquidity, deposits/assets ratio, and operating expenses to total assets ratio) and macroeconomic factors (real GDP growth rate, inflation rate, and real interest rate) have no significant effect in all bank profitability models.

Recommendation: -

Based on the empirical results of the study, the researcher recommends that the United Arab Emirates commercial banks ensure they maintain a high operating income since diversification had a greater influence on profitability measures. In addition, banks can improve their profitability through decreasing the size of non-performing loans, full utilization of liquid assets, more concentration on the main activities as main source of income, and efficiently manage their operating expenses. Furthermore, good economic environment for financial institutions fosters an increase in bank profitability. Hence, the researcher recommends UAE commercial banks to continuously make their own studies to determine when and how to take advantages of the GDP growth, inflation and interest rate

changes. In addition, the researcher recommends that further studies on the banks' performance can be done with an expanded scope and can be extended to other industries as well.

Source: Central Bank of the United Arab Emirates, May 31, 2020).

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