Effects of non-performing loans on Earnings and Quality of bank Assets : Comparative study of some selected commercial banks in Saudi Arabia

Dr. Mudathir Ahmed Abuelgasim - Associate Professor in Economics Banking and Finance

Al-Zaeim Al-Azhari University (Sudan) – Almajmmah University (Saudi Arabia)

Dr. Ali Alhijris - Assistant Professor in Marketing- Almajmmah University (Saudi Arabia)

Abstract

This study investigates the effects of NPLs on earnings and quality of bank assets, for three of the top 10 banks in KSA, these banks were chosen which considered as fairly representative of the commercial banking sector in KSA based on their largest proportion percentage of the total assets of commercial banks at the end of the year 2012. The selected banks are: NCB Bank, Al Rajhi Bank and Samba Bank. We used as dependent variables 6 measures of profitability widely employed in the banking literature such as, Debt Ratio, Return on Assets Ratio, Return on Equity Ratio, Equity Multiplier Ratio, Assets Utilizations Ratio, Marginal Profit Ratio. And non- performing loans as independent variable, during the period 20122018-. Secondary data were used to carry out ratio analyses, and trend analyses which were correlated to the variables. The study used Pearson correlation coefficient to carried out analysis, It is founded that bank non- performing loans (NPLs) have significant relationship on earnings and assets quality of banks. That is, it can be concluded that NPLs play a crucial roles on earnings and assets quality of banks in KSA. The results indicated that there is negative relationship and significantly correlated between non- performing loans and earnings and assets equality of banks when Debt Ratio, Return on Assets Ratio, Assets Utilizations Ratio and Marginal Profit Ratio are used as a measures of earnings and assets quality of banks but the relationship becomes positive and significantly correlated with Return on Equity Ratio and Equity Multiplier Ratio.The results of this study highlighted several implications and recommendations bank managers need in KSA, to thoroughly scrutinize client data and information during the credit analysis stage so to reduce informational gaps and increase access to complete, accurate and reliable information concerning credit risk and higher quality of bank assets. Equally, banks management needs to employ cost efficiency mechanisms in managing their loan portfolio

Keywords: Non-performing loans, Debt Ratio, Return on Assets, Earnings, quality of bank assets.

المستخلص

أثر القروض المتعثرة على أرباح وجودة الأصول المصرفية: دراسة مقارنة لبعض البنوك التجارية المختارة في المملكة العربية السعودية . تبحث هذه الدراسة في آثار القروض المتعثرة على أرباح و جودة الأصول المصرفية، بالنسبة إلى ثلاثة من أفضل 10 بنوك في المملكة العربية السعودية، تم اختيار هذه البنوك عن قصد والتي يمكن اعتبارها ممثلة إلى حد ما للقطاع المصرفي استنادًا إلى نسبتها الكبيرة في إجمالي أصول البنوك التجارية في نهاية العام 2012م. تم إستخدام كمتغيرات تابعة ستة مقاييس للربحية وهى نسب تستخدم على نطاق واسع في الأدب المصرفي مثل: نسبة الدين، نسبة العائد على الأصول، نسبة العائد على حقوق الملكية، نسبة مضاعف الأسهم، نسبة استخدام الأصول و نسبة الربح الحدي. وإعتبار القروض المتعثرة كمتغير مستقل خلال الفترة من 2012م2018-م. إستخدمت البيانات الثانوية لإجراء تحليلات النسب وتحليل إتجاهات إرتباط المتغيرات. استنادًا إلى التحليل الذي تم إجراؤه، باستخدام معامل إرتباط بيرسون، تبين أن القروض المصرفية المتعثرة لها علاقة كبيرة بالأرباح وجودة أصول البنوك. فالقروض المتعثرة تلعب أدوارًا حاسمة في الأرباح وجودة الأصول للبنوك في المملكة العربية السعودية. كما أشارت النتائج التجريبية إلى وجود علاقة إحصائية سلبية بين القروض المتعثرة وأرباح البنوك وجودة الأصول لدى البنوك عند استخدام نسبة الدين ونسبة العائد على الأصول ونسبة استخدام الأصول ونسبة الربح الحدي كمقياس للأرباح و جودة أصول البنوك، ولكن هناك علاقة إيجابية ترتبط بشكل كبير مع نسبة العائد على حقوق المساهمين ونسبة مضاعف الأسهم. وتشير هذه العلاقة الأخيرة إلى أن ارتفاع القروض المتعثرة (جودة الأصول المنخفضة) يؤدي إلى زيادة نسبة العائد على حقوق المساهمين ونسبة مضاعف الأسهم لبنوك العينة. أبرزت نتائج هذه الدراسة العديد من التوصيات التي يحتاجها مديرو البنوك في المملكة العربية السعودية، منها فحص بيانات العميل ومعلوماته بدقة خلال مرحلة تحليل الائتمان لتقليل الفجوات المعلوماتية وزيادة إمكانية الوصول إلى معلومات كاملة ودقيقة وموثوقة بشأن مخاطر الائتمان وارتفاع جودة الأصول المصرفية وبالمثل، تحتاج إدارة البنوك إلى استخدام آليات فعالة من حيث التكلفة في إدارة محفظة قروضها.

الكلمات المفتاحية: القروض المتعثرة، نسبة الدين، العائد على الأصول، الأرباح، جودة الأصول المصرفية.

Introduction:

The relationship between non-performing loans and earnings, quality assets of banks are an important indicators of financial performance and, of banks weakness. Banks may sustain losses for a long time because of their weakness managements of non-performing loans. Also, banks with bad managements in their non-performing loans may faced higher risks in attempting to increase their earnings, and by the end accelerating the deterioration of their financial position. Therefore, detection of earnings badness and increased of non - performing loans may enable the bank to take correct actions before the solvency of the bank is seriously threatened and before it begins to assume increased risks in attempting to achieve earnings and a higher quality assets Non-Performing Loans (NPLs) are representing one of the serious challenges for the banking systems in the last years. Therefore, a sustainable decision-making process should be implemented by the banks, for minimizing the effects of Non-Performing Loans risk. A bank loan is considered non-performing when more than 90 days pass without the borrower paying the agreed instalments or interest. Non-performing loans are also called "bad debt" SAMA(2018). A performing loan will provide a bank with the interest income it needs to make a profit and extend new loans. When customers do not meet their agreed repayment arrangements for 90 days or more, the bank must set aside more capital on the assumption that the loan will not be paid back. This reduces its capacity to provide new loans (Adriaan M. B,Russel. F (2005). To be successful in the long run, banks needs to keep the level of bad loans at a minimum so they can still earn a profit from extending new loans to customers. If a bank has too many bad loans on its balance sheet, its profitability will suffer because it will no longer earn enough money from its credit business. In addition, it will need to put money aside as a safety net in case it needs to write off the full amount of the loan at some point in time. (http://www.businessdictionary.com).The granting of credit by banks to investors is one of the most profitable operations of banks and can have a significant impact on the profitability of banks, the quality of their assets and their exposure to credit risk .Therefore, the administrations of these banks and central banks must develop controls to improve the process of providing this credit in a manner that achieves its objectives for the borrower and the bank providing credit and macroeconomic for the country in general. The problem of non-performing loans, which many commercial banks suffer from, is to reduce their chances of making profits and improving the quality of their assets. These loans will result in administrative costs, bad debts and freezing of bank assets in non-performing loans that could have been used to achieve many of the objectives .Profitability or to improve the assets of these banks. The ratio of non-performing loans to Saudi commercial banks was 1.394% during the study period (20122018-), while this ratio showed negative growth in 2013 and 2014, and grew positively in the rest of the years. This paper examines the effect of this increase in the ratio of non-performing loans on the profitability and quality of the assets of commercial banks in the Kingdom of Saudi Arabia by selecting the first three of the top 10 commercial banks in Saudi Arabia: Al Ahli Bank, Al Rajhi Bank and Samba Bank. There are a number of studies and several special reports have addressed the impact of NPLs on banks performance, all of them have shown the importance of NPLs on profitability, liquidity, and others economic factors like, inflation, GDP growth...etc, and major of them focused only on the ranking of banks according to these indicators, but very little direct research assess whether NPLs impacts on bank's earnings and assets quality with differential questions has been done. More researches to assessment the NPLs in KSA commercial banks and measure its impact on its earnings and assets quality is needed.

This paper consists of six sections. First, we present the literature review, Overview of non-performing loans in Saudi commercial sample banks are presented in the following section; while section number three, the Overview of earnings and profitability in Saudi commercial sample banks. Section four Data collections and measurements variables; while section five review Results and Discussions. Conclusion: Finding Results and Recommendations, are presented in section six.

Research questions:

This study was conducted to tested the effects of NPLs on earnings and quality of bank assets as a comparative study of some commercial banks selected from KSA banking sector. And it will clarify the basic elements of the research problem by answering the following questions:

1- The scope to which NPLs affect the earnings and quality of assets of banks in KSA?

2- What is the relationship between NPLs and other variables such as Debt ratio, Return on Assets Ratio (ROA), Return on Equity Ratio (ROE), Assets Utilizations Ratio (AU) and Marginal Profit Ratio (PM)?

Objectives of the study:

i. To test the extent to which NPLs affect the earnings and quality of assets of banks in KSA.

ii. To examine the relationship between NPLs and other financial variables such as Debt ratio, Return on Assets Ratio (ROA), Return on Equity Ratio (ROE), Assets Utilizations Ratio (AU) and Marginal Profit Ratio (PM)?

Hypothesis of the study:

The study tested the following null hypothesis:

H0: non-performing loans does not affect earnings and quality of bank assets.

H1: non-performing loans affects earnings and quality of bank assets.

I. Literature Review

The evaluation effects of NPLs on performance in banking sector has been assessed by various researchers, academicians and policy makers in different time periods. A simplistic review of some of the important studies is presented here which fulfills the need for the present study. A summary of some of these studies is given below:

Peter S.K, (2018), the researcher examined the impact of Non-performing loans on banks profitability , using panel data from (2007 to 2015) of 16 commercial banks in Tanzania. In his study he employed descriptive statistics and multiple regression analysis estimation methods. His study found that non-performing loans is negatively associated with the level of profitability in commercial banks in Tanzania. The findings of his study have both theoretical and managerial implications for practitioners and policy-makers. Ali. (2018), the researcher addressed the macroeconomic determinants of non-performing loans in Turkey and Saudi Arabia, based on data between 20002016-. The study found that there are positive relations between the market value and the inflation variables with the non-performing loans of Turkey, and the existence of a positive relationship between GDP, inflation, debt, market capitalization and cash supply with non-performing loans in the KSA and negatively related unemployment and transparency variables with non-performing loans for Saudi Arabia. Study mentioned that, the determinants of non-performing loans depended on some different macroeconomic conditions of different countries. Peter Wym, (2017), the study identified the impact of non-performing loans on Universal Banks profitability based on data for the period 20002014-. In the study they used the ARDL test to confirm a long-term relationship between variables. The study concluded that there was a significant negative impact between NPLs and profitability of Universal Banks in both short and long run. The study recommended that, the officials Universal Banks must revise their lending policy according to the economic condition of the country, as well as, reduce their periodic loans to a minimum, by not engaging in risky lending practices.Timothy A. J, (2018), examined both the bank variable (return on assets) and macroeconomic factors (GDP, unemployment rate and exchange rate) determinants of non-performing loans for commercial banks in Nigeria, used two commercial banks, which were sampled judiciously using secondary data sources during 20102015-. The researcher found that the GDP ratio had a positive relationship with ROA, while the exchange rate and unemployment rate had a negative relationship with ROA, and he recommended that the government should maintain political stability and fight corruption at all levels. Good of its clients with respect to repayment of loans Finally banks must employ sustainable manpower. Michael .N, (2018), The aim of study was to established the effect of non-performing loans on profitability of four of the major banks listed on the Ghana Stock Exchange (GSE) as this could enhance profitability in banks and consequently contribute to a healthy financial system, the researcher used Panel regression analysis to establish the relationship between credit risk and profitability in order to account for heterogeneity among selected banks; Standard Chartered Bank (SCG), ECO Bank Ghana (EBG) Ghana Commercial Bank (GCB) and Cal Bank (CBG) for a data span of 2006 to 2015,he used return on equity (ROE) for profitability -dependent variable. Non-performing loan ratio (NPLR) and capital adequacy ratio (CAR) were the two key explanatory variables. The study revealed that NPLR negatively affect profitability of banks but rate of CAR showed a significant positive relationship with profitability, and bank size equally showed a positive relationship with profitability, The researcher recommended that, managers of banks are to comply strictly with the rules that regulate the operations of banks in Ghana especially on the issue of capital adequacy ratio. Banks should also be cautious on the rate they expand since bank size can equally affect the fortunes of banks. The central bank must also be up and doing to ensure that banks keep- to all ratios set down by the Central Bank, the banking regulations and the various bards. Khalid .S. R, (2016). This study dealt with the determinants of non-performing loans in the Jordanian banking sector, used macroeconomic and banking factors to determine the determinants of non-performing loans in Jordanian banks for the period 20082012-. The study found that overdue loans and loans to total assets ratio had a positive effect on non-performing loans and considered as the most important determinants of non-performing loans. The results also showed that large banks are not necessarily more effective in checking loan customers than the smaller counterparts. The study found that there is a negative impact of economic growth and inflation rate on non-performing loans.

II. Overview of non- performing loans in Saudi commercial sample banks:

Bank credit is based on several criteria and principles aimed at minimizing credit risk. However, in practice, the Bank cannot maintain a risk-free loan portfolio due to the nature of bank credit (Benthem.C.V,2017.pp 510-). The most important of these risks are non-performing bank loans. And a Non-performing loans (NPL) are loans for which the borrower has not repaid the principal and interest of the loan for a set number of days, although the specific elements of the non-performing loan vary, but generally the duration of the banks is considered non-performing if the debtor has made any interest payments or principal Within 90 days, or was 90 days due and non-performing loans include (IMF): A loan that has been settled, refinanced or delayed for 90 days due to interest or modification of the original agreement, or a loan with arrears of 90 days, but the lender no longer believes that the debtor will make future payments, or a loan in which the maturity date of the loan principal is due, but a small portion of the loan remains. The following ratios are required to assess non-performing loans in the sample banks for the year 2012 – 2018.

1- Gross non- performing loans ratio:

The NPLs Ratios calculated by dividing the amount of non-performing loans in the Bank's loan portfolio to the total amount of outstanding loans held by the Bank .This ratio measures the Bank's ability to collect its loans and it used to identify the annual increase in non-performing loans in the Bank year by year. The annual increase in this ratio indicates an increase in credit risk, forcing the Bank to adding a fresh stock of bad loans and this indicator of the poor Bank's management of its NPLs, which mean that, the bank is either not exercising enough caution when offering loans or he too lax in terms of following up with borrowers on timely repayments. (John.T.A,2018,pp 1117-).

Table 2: Gross NPL ratio for sample banks for the year 2012 – 2018:

Bank Name	Years	Total NPL	Total loans	Gross NPL ratio	Aver-age	Bank Group Rank
	2012	4,933	163,461	3.02%		
	2013	2,919	187,687	1.56%		
	2014	2,851	220,722	1.29%		
	2015	3,682	252,940	1.46%		
NCB	2016	3,925	253,592	1.55%	2.12%	3
	2017	4,769	249,234	1.91%		
	2018	5,247	265,317	1.98%		
	2012	3,530	171,941	2.05%		
	2013	3,008	186,813	1.61%		
	2014	2,656	205,940	1.29%		
	2015	3,267	210,218	1.55%		
Al Rajhi	2016	2,868	224,994	1.27%		
	2017	1,770	233,536	0.67%	1.30%	1
	2018	2,290	334,063	0.69%		
	2012	3,341	104,786	3.19%		
	2013	2,012	113,455	1.77%		
	2014	1,660	124,079	1.34%		
	2015	1,114	129,819	0.86%		
	2016	1,076	125,234	0.86%		
Sam-ba	2017	1,227	117,685	1.04%	1.44%	2
	2018	1,489	113,709	1.04%		

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

According to the Gross NPL ratio, table 2 above showing that, ,all Saudi sample banks fulfilled the Basel Committee 111's in minimum Gross NPA ratio ,that it is, their troubled non performing loan are less than 2.5% and all of them rated 2 in proportion to the loans, but that means, they have some less important weakness in their credit administration and risk management in practice, it shows weak underwriting standards set by the banks management and their control actions.(Trautmann,2006, p.17). According to the analysis of the table above, on the basis of group average of the Gross NPA ratio of each Saudi bank separately, the analysis shows Al Rajhi Bank was at the top position with group average of 1.30% in period 2012 -2018. Followed by Samba Bank with average 1.44% and NCB bank stood at the last position with average 2.12%.

2- Debt ratio: It is a financial ratio that measures the extent of a bank's leverage, the ratio of total loans to total assets expressed as a percentage and refers to the proportion of the bank's assets that are financed by debt. The higher the ratios, indicates the better in bank's profitability, but it faces high credit risk associated with higher non-performing debt. The debt ratio greater than 1.0 (100%), means that the bank has more debt than assets. At the same time, 100% means the bank has more assets than debt, and generally, lower ratio of loans to assets is preferred to higher one to reduce high risk of credit, and the high percentage also suggests that the bank may be putting itself at a risk of default on its loans if interest rates were to rise suddenly (Will.K 2019). The following is the analysis of the advances to assets ratio of sample banks.

Table 3: Loans to assets ratio for sample banks for the year 2012 – 2018:

Bank Name	Years	Total Loans	Total Assets	Loans to assets ratio	Average	Bank Group Rank
NCB	2012	163,461	345,260	47.34%	53.77%	2
	2013	187,687	377,280	49.75%		
	2014	220,722	434,878	50.75%		
	2015	252,940	448,642	56.38%		
	2016	253,592	441,491	57.44%		
	2017	249,234	443,866	56.19%		
	2018	265,317	453,390	58.52%		
Al Rajhi	2012	171,941	267,383	64.31%	70.06%	3
	2013	186,813	279,871	66.75%		
	2014	205,940	307,712	66.93%		
	2015	210,218	315,620	66.60%		
	2016	224,994	339,712	66.23%		
	2017	233,536	343,117	68.06%		
	2018	334,063	365,004	91.52%		
Samba	2012	104,786	199,224	52.60%		
	2013	113,455	205,037	55.33%	53.63%	1
	2014	124,079	217,399	57.07%		
	2015	129,819	235,243	55.19%		
	2016	125,234	231,489	54.09%		
	2017	117,685	227,611	51.70%		
	2018	113,709	229,938	49.45%		

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

According to the analysis of the table above, on the basis of group average of advances to assets ratio of each Saudi bank separately, the analysis shows Samba Bank was at the top position with group average of 53.63% in period 2012 -2018. Followed by NCB Bank with average 53.77% and Al Rajhi Bank stood at the last position with average 70.06%.

III. Overview of earnings and profitability in Saudi commercial sample banks:

The main objective of any bank is to increase the value of the wealth of the owners by making profits using the money received from their customers' deposits. The Bank's revenues from its credit facilities represents the largest proportion of banking operations, for this, the basic criterion of the efficiency of the Bank is the amount of profits it achieves. However, the Bank's attempt to make profits by employing an unfeasible loan may lead to credit risk affecting its financial safety as a result of the increase in the NPLs ratio in the bank's portfolio. Therefore, it is necessary to balance between the expansion of loans to increase revenues and credit risks that may be faced a bank. (Aspal & Dhawan, 2016, P. 13). As is obvious that all banks are undertaking their business activities and accept risk only for the purpose of attaining positive earnings, and the quality of earnings is an extremely significant parameter which expresses the quality of profitability and capability of a bank to sustain quality earning consistently. Strong earnings and profitability profile of banks reflects the ability to support present and future operations. (Aspal & Dhawan, 2016, Pp. 1620-). The following ratios are required to assess earning quality in the sample banks for the year 2012 – 2018.

1- Return on Assets Ratio (ROA): The ratio of net profit to total assets refers to the ability of banks to use their assets to generate profits. The higher ratio reflects the Bank's ability to generate better asset income and improve its future management efficiency. (www.investopedia.com).

Table 4: Return on Assets Ratio for sample banks for the year 2012 – 2018:

Bank Name	Years	Net Profit	Total Assets	Return on Assets Ratio	Average	Bank Group Rank
NCB	2012	6,613	345,260	1.92%	2.20%	3
	2013	7,989	377,280	2.12%		
	2014	8,793	434,878	2.56%		
	2015	9,148	448,642	2.04%		
	2016	9,416	441,491	2.13%		
	2017	9,965	443,866	2.25%		
	2018	10,830	453,390	2.39%		
Al Rajhi	2012	7,885	267,383	2.95%	2.53%	1
	2013	7,438	279,871	2.66%		
	2014	6,836	307,712	2.22%		
	2015	7,130	315,620	2.26%		
	2016	8,126	339,712	2.12%		
	2017	9,121	343,117	2.66%		
	2018	10,297	365,004	2.82%		
Samba	2012	4,332	199,224	2.17%		
	2013	4,510	205,037	2.20%	2.24%	2
	2014	5,010	217,399	2.30%		
	2015	5,214	235,243	2.22%		
	2016	5,006	231,489	2.16%		
	2017	5,024	227,611	2.21%		
	2018	5,529	229,938	2.40%		

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

According to the Return on Assets Ratio, table 4 above showing that, all Saudi sample banks fulfilled beyond the Basel Committee 111's minimum Return on Assets Ratio, all sample banks are rated 1, that it is, their net profits are more than 1.50% in proportion to the total assets, which means that their earnings ability is strong, where earnings enough to support bank operations and maintain adequate capital. According to the analysis of the table above, on the basis of group average of the Return on Assets Ratio of each Saudi bank separately, the analysis shows Al Rajhi Bank was at the top position with group average of 2.53% in period 2012 -2018. Followed by Samba Bank with average 2.24% and NCB bank stood at the last position with average 2.20%.

2- Return on Equity Ratio (ROE):

the profitability ratio that measures the Bank's ability to realize profits from equity and to assess the extent to which the Bank is able to invest capital in its operations to generate the profits of the Bank and it calculated by dividing net profit by total equity.

Table 5: Return on Equity Ratio for sample banks for the year 2012 – 2018:

Bank Name	Years	Net Profit	Total Equity	Return on Equity Ratio	Average	Bank Group Rank
	2012	6,613	39,404	16.78%		
	2013	7,989	42,536	18.78%		
	2014	8,793	46,921	18.86%		
	2015	9,148	48,462	18.88%		
NCB	2016	9,416	53,038	17.75%		
	2017	9,965	56,011	17.79%		
	2018	10,830	65,669	16.49%	17.90%	2
	2012	7,885	36,469	21.62%		
	2013	7,438	38,498	19.32%		
	2014	6,836	41,896	16.32%		
	2015	7,130	46,639	15.29%		
Al Rajhi	2016	8,126	51,947	15.64%	17.97%	
	2017	9,121	55,751	16.36%		1
	2018	10,297	48,552	21.21%		
	2012	4,332	31,637	13.69%		
	2013	4,510	34,931	12.91%		
	2014	5,010	38,912	12.88%		
	2015	5,214	40,251	12.95%		
Sam-ba	2016	5,006	42,545	11.77%	12.64%	3
	2017	5,024	44,682	11.24%		
	2018	5,529	42,309	13.07%		

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

Table above showing, the return on equity ratio of all Saudi sample banks for the year 2012 – 2018.According to the analysis of the table above, on the basis of group average of the return on equity ratio of each Saudi bank separately, the analysis shows Al Rajhi Bank was at the top position with group average of 17.97% in period 2012 -2018. Followed by NCB Bank with average 17.90% and Samba bank stood at the last position with average 12.64%.

3- Equity Multiplier Ratio (EM): Ratio measures the portion of bank's assets that are financed by stockholder's equity. It is calculated by dividing a bank's total asset value by total equity and linked to return on assets through the equity multiplier. The equity multiplier compares assets with equity as the greater value of this multiplier indicates a greater degree of debt financing than equity (www.investopedia.com).It therefore measures financial leverage as a measure of profit and risk, if the bank achieves a high or low return on equity, the reason for the return on assets or the financial leverage or both. If the return on equity is due to the financial leverage, shareholders and analysts know the level of risk that that level of return or performance requires. Conversely, if the return on equity high through the governance of excellent assets, it will be in this case, another message to analysts and shareholders for the good management of the bank. A low equity multiplier indicates that the bank is loathe to take on debt, which is usually seen as a positive as their debt servicing costs are lower, but it could also mean that the bank is unable to seduce lenders to loan them money, which would be a negative, and a high equity multiplier indicate that the bank overly dependent on debt for financing which would make it a potentially risky investment. Market consensus, though it can vary by sectors and industries, is that an equity multiplier of 2:1 is an optimal balance of debt and equity for a bank to finance its assets. Akhilesh Ganti(2019),

Table 6: Equity Multiplier Ratio for sample banks for the year 2012 – 2018:

Bank Name	Years	Net Profit	Total Assets	Total Equity	EM	Average	Bank Group Rank
NCB	2012	6,613	345,260	39,404	0.17	0.18	1
	2013	7,989	377,280	42,536	0.19		
	2014	8,793	434,878	46,921	0.19		
	2015	9,148	448,642	48,462	0.19		
	2016	9,416	441,491	53,038	0.18		
	2017	9,965	443,866	56,011	0.18		
	2018	10,830	453,390	65,669	0.16		
Al Rajhi	2012	7,885	267,383	36,469	0.22	0.16	2
	2013	7,438	279,871	38,498	0.03		
	2014	6,836	307,712	41,896	0.16		
	2015	7,130	315,620	46,639	0.15		
	2016	8,126	339,712	51,947	0.16		
	2017	9,121	343,117	55,751	0.16		
	2018	10,297	365,004	48,552	0.21		
Sam-ba	2012	4,332	199,224	31,637	0.14	0.13	3
	2013	4,510	205,037	34,931	0.13		
	2014	5,010	217,399	38,912	0.13		
	2015	5,214	235,243	40,251	0.13		
	2016	5,006	231,489	42,545	0.12		
	2017	5,024	227,611	44,682	0.11		
	2018	5,529	229,938	42,309	0.13		

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

According to this analysis and table 6 above, all Saudi sample banks not fulfilled an optimal equity multiplier of 2:1in period 2012 -2018. And on the basis of group average of the equity multiplier ratio of each Saudi bank separately, the analysis shows NCB Bank was at the top position with group average of 0.18 in period 2012 -2018.Followed by Al Rajhi Bank with average 0.16 and Samba bank stood at the last position with average 0.13.

4- Assets Utilizations Ratio (AU): The ratio measures the efficiency with which the bank uses its assets to generate revenue to reach a sufficient profitability level, and this ratio is frequently used to compare a bank's efficiency over time. It is calculated by dividing a bank's total profits value by total assets, according to this formula. (www.investopedia.com).

Asset Utilization = Total Profit / Total Assets

Table 7: Assets Utilizations Ratio for sample banks for the year 2012 – 2018:

Bank Name	Years	Total Profit	Total Assets	AU Ratio	Average	Bank Group Rank
NCB	2012	13,509	345,260	3.91%	3.92%	3
	2013	14,857	377,280	3.94%		
	2014	13,667	434,878	3.14%		
	2015	17,486	448,642	3.90%		
	2016	18,647	441,491	4.22%		
	2017	18,345	443,866	4.13%		
	2018	18,927	453,390	4.17%		
Al Rajhi	2012	13,983	267,383	5.23%	4.70%	1
	2013	13,845	279,871	4.95%		
	2014	13,667	307,712	4.44%		
	2015	13,746	315,620	4.36%		
	2016	15,341	339,712	4.52%		
	2017	15,905	343,117	4.64%		
	2018	17,320	365,004	4.75%		
Samba	2012	6,694	199,224	3.36%		
	2013	7,001	205,037	3.41%	4.41%	2
	2014	7,385	217,399	3.40%		
	2015	7,755	235,243	3.30%		
	2016	7,760	231,489	3.35%		
	2017	7,892	227,611	3.47%		
	2018	8,157	229,938	3.55%		

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

According to analysis of table7 above, on the basis of group average of the assets utilizations ratio of each Saudi bank separately, the analysis shows Rajhi Bank was at the top position with group average of 4.70% in period 2012 -2018.Followed by Al Samba Bank with average 4.41% and NCB bank stood at the last position with average 3.92%.

5- Marginal Profit Ratio (MP): Marginal Profit Ratio reflects the efficiency of the Bank in the management and control of its costs and measures the net income earned per unit of cash in one of the total profits.Will K,(2019).

Table 8: Marginal Profit Ratio for sample banks for the year 2012 – 2018:

Bank Name	Years	Net Profit	Total Profit	MP Ratio	Average	Bank Group Rank
NCB	2012	6,613	13,509	48.95%	54.50%	3
	2013	7,989	14,857	53.77%		
	2014	8,793	13,667	64.34%		
	2015	9,148	17,486	52.41%		
	2016	9,416	18,647	50.50%		
	2017	9,965	18,345	54.32%		
	2018	10,830	18,927	57.22%		
Al Ra-jhi	2012	7,885	13,983	56.39%	54.54%	2
	2013	7,438	13,845	53.72%		
	2014	6,836	13,667	50.02%		
	2015	7,130	13,746	51.87%		
	2016	8,126	15,341	52.97%		
	2017	9,121	15,905	57.35%		
	2018	10,297	17,320	59.45%		
Samba	2012	4,332	6,694	64.71%		
	2013	4,510	7,001	64.42%	65.74%	1
	2014	5,010	7,385	67.84%		
	2015	5,214	7,755	67.23%		
	2016	5,006	7,760	64.51%		
	2017	5,024	7,892	63.66%		
	2018	5,529	8,157	67.78%		

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

According to analysis of table 8 above, on the basis of group average of the assets utilizations ratio of each Saudi bank separately, the analysis shows Samba Bank was at the top position with group average of 65.74% in period 2012 -2018.Followed by Al Rajhi Bank with average 54.54% and NCB bank stood at the last position with average 54.50%.

IV. Data collections and measurements variables:

In Saudi Arabia there are 24 banks, 12 of them are local banks and 12 branches of foreign banks (SAMA, 2018). However, for the purpose of the study, three of the top 10 banks, were selected, the banks were chosen based on their largest proportion percentage of the total assets of commercial banks at the end of the year 2012, addition to their age group, expansion, and their ranking as three of the top 10 banks, in KSA. The selected banks are: NCB Bank, Al Rajhi Bank and Samba Bank. Financial statements of the above banks were used from (20122018-), We used as dependent variables 6 measures of earnings and quality of bank assets widely employed in the banking literature such as, Debt Ratio, Return on Assets Ratio, Return on Equity Ratio, Equity Multiplier Ratio, Assets Utilizations Ratio, Marginal Profit Ratio and non- performing loans as independent variable. The data collection for this study is the secondary sources data because based on our study objectives, secondary data are more appropriate for the various analyses that were to be done. Data has been collected from the bank annual reports, books, journals, annual reports of financial stability in KSA during the period of the study and other related document.

Table 1: Variables definitions:

Symbol	Variables	Measurement
Independent variable: GNPL	Gross NPA Ratio	Total Non- Performing loan/Total loans
Dependent variables: ROA	Return on Assets Ratio	Net Profit/ Total Assets
ROE	Return on Equity Ratio	Net Profit/ Total Equity
AU	Assets Utilizations Ratio	Total Profit/Total Assets
MP	Marginal Profit Ratio	Net Profit/ Total Profit
DR	Debt Ratio	Total loans/Total assets

Source: Researcher's own construct

V. Results and Discussions:

1- Descriptive Statistics:

As it can be seen from Table 10, the results show a low minimum Gross NPL Ratio of 1.3 percent which is due to accumulated losses which increased significantly in 2012 – 2018. The mean value of Gross NPL Ratio is 1.62 percent, whereas maximum is 2.12 percent. The mean value of Debt Ratio is 59.15 percent, which range from of 53.63 percent to 70.06 percent. The average Return on Assets Ratio of 2.32 percent, whereas maximum is 2.53 percent. The mean value of Return on Equity Ratio is 16.11 percent, which range from of 12.46 percent to 17.97 percent. The mean of Equity Multiplier Ratio averaged 0.157 percent, which range from of 0.13 percent to 0.18 percent. The Assets Utilizations Ratio has a mean of 4.34 percent and a standard deviation of 0.39 percent. The mean value of Marginal Profit Ratio is 58.26 percent, whereas maximum is 65.74 percent. The descriptive results of variables are presented in table 9 below.

Table 9: Descriptive Statistics of Variables:

	Gross NPA Ratio	Debt Ratio	Return on Assets Ratio	Return on Equity Ratio	Equity Multiplier Ratio	Assets Utilizations Ratio	Marginal Profit Ratio
Mean	1.62	59.15333	2.323333	16.11	0.156667	4.343333	58.26
Standard Error	0.253246	5.453483	0.103976	1.825112	0.01453	0.227621	3.740018
Median	1.44	53.77	2.24	17.9	0.16	4.41	54.54
Mode	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Standard Deviation	0.438634	9.44571	0.180093	3.161186	0.025166	0.39425	6.477901
Sample Variance	0.1924	89.22143	0.032433	9.9931	0.000633	0.155433	41.9632
Kurtosis	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Skewness	1.535668	1.731623	1.63642	-1.7311	-0.58558	-0.73918	1.731977
Range	0.82	16.43	0.33	5.51	0.05	0.78	11.24
Minimum	1.3	53.63	2.2	12.46	0.13	3.92	54.5
Maximum	2.12	70.06	2.53	17.97	0.18	4.7	65.74
Sum	4.86	177.46	6.97	48.33	0.47	13.03	174.78
Count	3	3	3	3	3	3	3
Largest(1)	2.12	70.06	2.53	17.97	0.18	4.7	65.74
Smallest(1)	1.3	53.63	2.2	12.46	0.13	3.92	54.5
Confidence Level (95.0%)	1.089628	23.46444	0.447375	7.852823	0.062516	0.979372	16.092

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

***Significant at 5% level.**

2- Correlation Results:

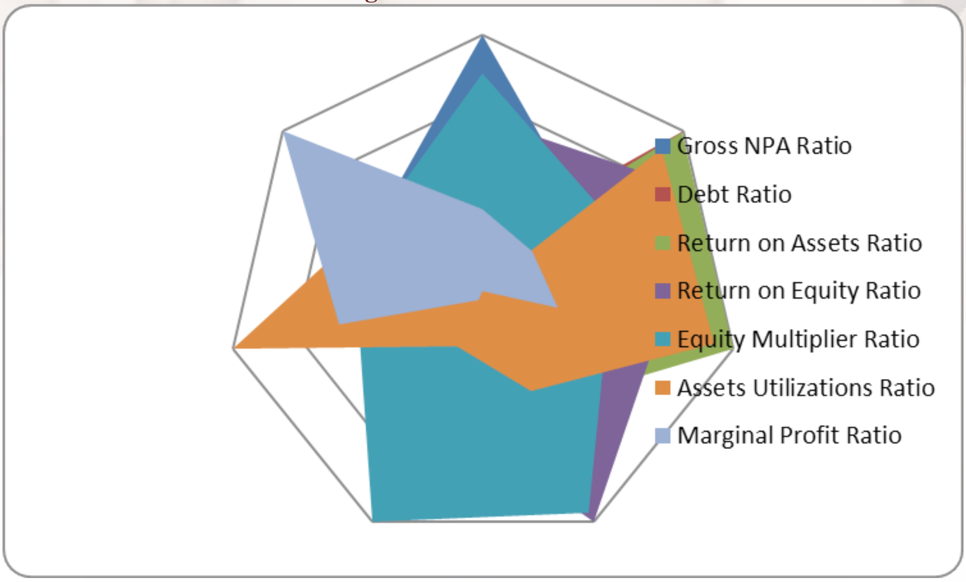
We used person correlation coefficient to determine whether a statistically significant correlation was present between Debt Ratio, Return on Assets Ratio, Return on Equity Ratio, Equity Multiplier Ratio, Assets Utilizations Ratio, and Marginal Profit Ratio (as the ratios of earnings and quality of assets in KSA commercial banks) with non-performing loans, (we used Gross NPA Ratio as a measure of NPLs). The findings indicated that all dependent Variables mentioned above are significantly correlated with non-performing loans (Gross NPA Ratio) during the period from 2012 - 2018.The correlation matrix of dependent and independent variables shows that Debt Ratio, Return on Assets Ratio, Assets Utilizations Ratio and Marginal Profit Ratio is negative and significantly correlated with Gross NPA Ratio as a measure of NPLs, While it is positive and significantly correlated with Return on Equity Ratio and Equity Multiplier Ratio. These indicate that higher NPLs "leads to a decrease in shareholders' value for conventional banks, while it is not true in the case of Islamic banks, these may be due to the Islamic precepts in the Islamic banks that prohibit earning without appropriate reason".(Abdulazeez Y. H 2017 pp 103104-). The correlation matrix of variables is presented in table 10 below.

Table 10: Correlation Matrix:

	Gross NPA Ratio	*Debt Ratio*	*Return on Assets Ratio*	*Return on Equity Ratio*	*Equity Multiplier Ratio*	*Assets Utilizations Ratio*	*Marginal Profit Ratio*
Gross NPA Ratio	1						
Debt Ratio	-0.62604	1					
Return on Assets Ratio	-0.71397	0.992964	1				
Return on Equity Ratio	0.345015	0.51592	0.410851	1			
Equity Multiplier Ratio	0.697545	0.122067	0.003677	0.913207	1		
Assets Utilizations Ratio	-0.97669	0.778841	0.847634	-0.13548	-0.52746	1	
Marginal Profit Ratio	-0.35827	-0.50374	-0.3979	-0.9999	-0.91889	0.149496	1

Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

***Significant at 5% level**



Source: Researcher's own construct using KSA commercial banks data from 2012-2018.

3- Summary of the Findings:

By used Pearson correlation coefficient. It is noted that bank non- performing loans (NPLs) have significant relationship on earnings and assets quality of banks. That is, it can be concluded that non- performing loans (NPLs) play a crucial roles on earnings and assets quality of banks in KSA. The empirical results indicated that there is negative statistical significant relationship between non- performing loans (NPLs) and earnings and assets equality of banks when Debt Ratio, Return on Assets Ratio, Assets Utilizations Ratio and Marginal Profit Ratio are used as a measures of earnings and assets quality of banks but the relationship becomes positive and significantly correlated with Return on Equity Ratio and Equity Multiplier Ratio. This relationship indicate that higher NPLs "leads to a increase in Return on Equity Ratio and Equity Multiplier Ratio for these sample banks as Islamic banks, while it is not true in the case of conventional banks, "these may be due to the Islamic precepts in the Islamic banks that prohibit earning without appropriate reason", these findings support the findings of (Abdulazeez Y. H 2017 pp 103104-).

VI. Conclusion: Finding Results and Recommendations:

This study, examined effects of NPLs on earnings and assets equality of banks in KSA for the period 2012 - 2018 . The study found that an increase in non-performing loans is associated with a decrease in earnings and assets equality of banks when we used Debt Ratio, Return on

Assets Ratio, Assets Utilizations Ratio and Marginal Profit Ratio as a measures of earnings and assets equality, because increased exposure to credit risk which caused by NPLs is normally associated with an increase in operating costs and lead to decreased profitability. But the relationship becomes positive and significantly correlated with Return on Equity Ratio and Equity Multiplier Ratio. This relationship indicate that higher NPLs (lower quality of assets) leads to a increase in Return on Equity Ratio and Equity Multiplier Ratio for these sample banks as “Islamic banks, while it is not true in the case of conventional banks, “these may be due to the Islamic precepts in the Islamic banks that prohibit earning without appropriate reason”, these findings support the findings of (Abdulazeez Y. H 2017 pp 103104-).

The results of this study highlighted several implications and recommendations bank managers need in KSA, to thoroughly scrutinize client data and information during the credit analysis stage so to reduce informational gaps and increase access to complete, accurate and reliable information concerning credit risk and higher quality of bank assets. Equally, banks management needs to employ cost efficiency mechanisms in managing their loan portfolio. Regulators on the other hand, need to closely monitor bank operating efficiency ratios and Return on Equity by paying more attention to cost-to-income ratio trends and bank’s capital position to increase Return on Equity value, and risk management units in a banks , also should devise regulations and monitoring tools that will trigger early warning signals of potential bank failures due to accumulation of non – performing loans.

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