THE EFFECT OF FINANCIAL RATIOS ON BANK CREDIT FOR A SAMPLE OF IRAQI COMMERCIAL BANKS

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ABSTRACT

Financial analysts believe that ratios have a significant impact on bank credit. Therefore, Understanding the effects of ratios in credit is critical both empirically and theoretically. Recent empirical studies indicate that most of the ratios have a positive effect on bank credit and a few of them have a negative effect. This paper explores the relationship between financial and credit ratios in 12 Iraqi banks for the period 2009-2017 using the Seemingly Unrelated Regression Model (SURs) technique. The use of this period is due to the fact that the Iraqi market for securities, which is the source of the data, is newly established, and most banks belonged to this market in later years, and the data of most banks is cut off and not announced after 2017. When using estimation methods for panel data models, which are fixed effects models and random effects models, the problem of correlations between random variables appeared, so it was replaced by the (SURs) method that cancels the correlations between random variables. It was used between time periods because the cross sections are larger than the time series. The research found a positive and statistically significant effect of current ratios, return on assets, stock turnover ratios, loan ratios and the dividend Ratios in credit, and a negative, statistically significant effect of ownership and earnings per share ratios. As for the ratios of account receivables turnover and Profit repeater, they had no significant effect.

Keywords: Financial Ratios, Bank Credit, SURs Method**,** Iraqi Commercial Banks

INTRODUCTION

Financial ratios play an important and distinct role in directing credit decisions, whether for banks or investors. through these ratios, the strength of banks is guided in the event that investors deposit their money in them, and thus the possibility of recovering money when requested, the bank does the same when applying for loans by investors, he studies the strength of the credit applicant and his financial position and is guided by the financial ratios on his ability to repay the money. What matters in this study is the viewpoint of investors in the banks in which they deposit their money.

Calculating the financial ratios is not difficult, but interpreting and guiding them to direct credit is difficult, so the financial ratios must be carefully studied, and the economic situation in Iraq is unstable, which made Iraqi banks suffer from low credit, and Iraqi banks suffer from poor financial performance. The Iraqi stock exchange suffers from low efficiency, as it is slow in delivering and displaying data and information about the companies participating in it. all this was reflected in the weakness of Iraqi banks and their weak credit levels, so the study aims to search for how the financial ratios contribute to directing credit decisions in Iraqi commercial banks and what is the mechanism of the impact of these ratios on credit.

The main question of this study is how the financial ratios affect the bank credit of Iraqi commercial banks, and what are the ratios that have a positive impact and what are the ratios that have a negative impact. Theoretically, there is no clear and definitive answer to this question, so the issue must be solved empirically.

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Many studies have been conducted of the impact of financial ratios on bank credit, including banks in developed countries and others in developing countries. This study differs from previous studies in that it deals with Iraqi commercial banks, which are characterized by low levels of credit, belonging to an economically unstable environment and suffering from faltering financial performance. Many financial ratios were used in this study that was not used by the same number in previous studies.

The research section to the introduction in the first part, the second part of the research presents the literature review of the study, the third part shows the previous empirical findings, the fourth part describes the data and methodology which contains the model description, description of variables, unit root test**,** correlation matrix results, and regression function estimation results, and the last part conclusions and suggestions.

LITERATURE REVIEW

Ratios are one of the tools that help the bank official to form a quick opinion on whether the borrower has a sound balance sheet and strong profitability. Also, the investor will have a comprehensive perception of the bank's financial position and the possibility of paying the money when requested through these ratios. Ratio analysis refers to the comparison of items or items on the balance sheet or income statement. These comparisons provide insight to the borrower and the potential for default if money is provide. while calculating different ratios is a fairly straightforward mathematical exercise, interpreting these ratios is not so simple, one ratio in isolation provides little information and is much more useful when compared between periods (i.e. versus the same ratio over previous years) and intra-industry (i.e. versus the same percentage for other companies of similar size within an industry). Additionally, due to the dynamic and interactive nature of the works, movement in an isolated ratio may indicate something quite the opposite of what appears by looking at the ratio in conjunction with other ratios.

Financial ratios contribute greatly to the interpretations related to the company, as they give important indications about the current and future state of the company. On the other hand, the analysis to be conducted with financial ratios provides great benefits to decision makers by revealing much positive and negative information that are reflected in the company's stock values (Cam et al., 2015).

Financial ratios represent a practical approach, or an alternative developed from established practices and personal opinions of eminent analysts, through which the relationship between different items in the financial statements is revealed through financial ratios, and is therefore important to internal management, potential investors, creditors and foreigners. They are also better tools for measuring the liquidity, solvency, profitability and management efficiency of a company. Therefore, the role of accounting is very important in increasing the efficiency of management in order to reduce the level of spending and thus increase the rate of profit, and for banks in reducing the level of non-performing loans. It also helps in determining the possible causal relationship between the different elements after analysis and auditing of the company's past results, and the derived ratios after analysis and auditing can help management in preparing budgets for policy formulation and preparing future action plans (Awuor, 2011).

The widespread use of these ratios is increasing because they are easy to calculate, and because they are a quantitative measure to judge internal units, and financial ratios provide basic indicators to judge performance without the need to provide some financial details. In general, the extent and depth of analysis of financial statements is determined by the requirements of the user and, on the other hand, the investor in a company is concerned with its future financial performance (Arkan, 2016).

Ratio analysis is used by three main groups: (1) Managers who use ratios to help analyze, control, and thus improve company operations (2) Credit analysts such as bank loan officers, or credit managers who analyze ratios to help ascertain a company's ability to Paying

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off its debts and (3) equity analysts interested in a company's efficiency and growth prospects, ratio analysis can provide useful information regarding a company's operations and financial condition (Lesakova, 2007).

There are five main groups of ratios: liquidity ratios, profitability ratios, activity ratios, debt ratios and market ratios. Each of these ratios is divided into other sub-ratios, to indicate each of them a specific thing that is used in evaluating companies to measure their ability to fulfill their obligations, from the parties that study the ratios are the banks, they evaluate the financial position of the investors requesting funds to measure their ability to fulfill them with benefits at the time they fall due. Also, the investor uses these ratios when he wants to put his money in the banks, so to know the ability of the bank to fulfill the money deposited with it with its interest when requested, the investor looks at the financial ratios of the bank. Thus, financial ratios have an effect on bank credit, and this effect varies according to these ratios.

PREVIOUS EMPIRICAL FINDINGS

Previous studies vary among themselves about the strength and type of influence in relation to financial ratios and credit. There are studies as a result of the influence on them being strong, others weak, and others without influence, and there are positive and negative relationships.

(Kurniawan, 2021) presented a study "Analysis Of The Effect Of Return On Asset, Debt To Equity Ratio, And Total Asset Turnover On Share Return", the study used descriptive and quantitative statistical analysis using panel data and using random effects technique (and Common Effects technology using (Eviews 10) The results showed that the return on assets had a small effect on the stock returns, the partial debt to equity ratio had no significant effect, while the total asset turnover had a positive and significant effect in earnings per share.

In 2019, (Khan et al.,) completed a study “Re-Classification Of Financial Ratios” using descriptive statistics and factor analysis using the (SPSS) program, which reached several results, the most important of which is that the ratios that are studied in the Academia is different from the ratios that are practically calculated, so policy makers and researchers need to consider this point to reconcile academics with industry practice.

A study (Nasution et al., 2018) "The Effect Of Debt To Equity Ratio And Total Asset Turnover On Return On Equity Automotive Companies And Components In Indonesia'" using multiple linear regression, the results of the study showed that both ratios had a significant and positive effect on Return on equity.

A study was completed (Zorn et al., 2018) "Financial Ratios As Indicators Of Economic Sustainability: Synergies And Trade-Offs For Swiss Dairy Farms", the study used five ratios related to the index's profitability, four ratios related to the index's liquidity, and eight other indicators to measure Financial efficiency, stability, suitability and ability to pay based on more than 14,000 accounting operations for dairy farms. The study conducted Spearman’s correlation analysis of financial ratios, which showed a mostly positive correlation with quantitative economic sustainability. The study compared a composite index for all seventeen ratios with two choices for the first European financial ratios. The composite, and the second indicator of economic sustainability for North America, the study concluded that it is possible to apply financial ratios related to profitability, liquidity and other financial indicators that include indicators of financial efficiency, solvency and ability to pay to estimate the economic sustainability of Swiss dairy farms, and the relationship is positive between ratios and sustainability.

(Rashid, 2018) analyzed “Efficiency Of Financial Ratios Analysis For Evaluating Companies’ Liquidity”. The study used the analytical method of financial data. This study concluded that liquidity is of great importance, comparable to profitability ratios, in attracting investors to buy company shares.

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Measured (Arilyn, 2016) Effects Of Inventory Turnover, Total Asset Turnover, Fixed Asset Turnover, Current Ratio And Average Collection Period On Profitability" The study used the descriptive statistics methodology, finding that there is a positive effect of the fixed asset turnover rate and the current ratio on profitability, while there is no effect of inventory turnover, total asset turnover and average collection period on profitability.

A study (Pashkova, 2016) entitled " Credit Risk Management of SMEs through Financial Ratio Analysis Case: Company Y", the analytical method of financial ratios was used; the study concluded that small and medium-sized companies are more dangerous than large companies. Therefore, as the various risks that small and medium-sized companies face throughout their lives has been explored, in particular, credit risk is a sub-type of financial risk.

Cam, et al., (2015) analyzed "The Role of Financial Ratios to Determine the Value of Stock: A Application in Bist." The study used descriptive statistics, panel data models, and using the random effects technique. The study that the current ratio, the quick turnover ratio, the debt ratio, the asset turnover, the inventory turnover, the market value / book value, the use of leverage and the controlled assets are variables affecting the stock values of companies.

(Soares & Pina, 2014) presented a study entitled "Credit Risk Assessment and the Information Content of Financial Ratios: A Multi-Country Perspective" with a special focus on quantitative standards. Cross-sectional analysis of data for companies of fifteen sectors and three size classes was used in seven countries: Austria, Belgium, France, Germany, Italy, Portugal and Spain. The study showed that profitability indicators have the greatest differentiating power, which implies more specific standards for assessing credit risk. The study also found that variation in size and sectors leads to variation in credit risk and that the size of the country has less impact, the financial indicators also show little differences in the amount of credit risk across companies.

A study (Heikal et al., 2014) "Influence Analysis of Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), Debt To Equity Ratio (DER), and Current Ratio (CR), Against Corporate Profit Growth In Automotive In Indonesia Stock Exchange", using multiple linear regression, it was found that the effect of the return on assets, return on equity, and net profit margin is positive on profits, while the effect of the debt-to-equity ratio and the current ratio is negative in profits.

(Awuor, 2011) presented a study "The Use of Financial Ratios for Credit Evaluation by Commercial Banks in Kenya", the thesis used the descriptive research method, which included 28 banks, and a questionnaire form was used to collect data, which included descriptive statistics used for the mean, median and deviation Standard, maximum and minimum values The study proved that all banks have a credit risk management team, banks always use ratios in conducting their evaluation of corporate clients and that the most important ratios in credit assessment are liquidity ratios and profitability ratios.

DATA AND METHODOLOGY

In this research, the effect of some financial ratios on credit will be tested and the correlation between them is investigated in a sample of Iraqi commercial banks. The dependent variable is bank credit, while the explanatory variables are the current ratio as an expression of liquidity ratios, the ratio of returns on assets as a representation of Profitability, stock turnover ratio and accounts receivable turnover ratio as an expression of activity ratios, ownership ratio and loan ratio expressing debt ratios, and finally, earnings per share, Profit repeater and dividend ratio for market ratios.

This study covers Panel Data for twelve Iraqi commercial banks, which are (Ashur International Bank for Investment, National Bank of Iraq, Bank of Babylon, Bank of Baghdad, Commercial Bank of Iraq, Gulf Commercial Bank, Investment Bank of Iraq, Mosul Bank for Development and Investment, Al-Mansour Bank for Investment, Sumer Commercial Bank, Iraqi Middle East Investment Bank and United Bank For Investment). For the period (2009-2017),

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the data was obtained from the Iraq Stock Exchange. These data are the maximum it can be, since the Iraq Stock Exchange was newly established, it was established in the second half of the year (2004), and then the banks joined it successively until the joining process was completed and data and information about banks began to be published in full in (2009). , The data of Iraqi banks is characterized by its loss for some years and its lack of availability quickly enough, so the data was not obtained after the year (2017) because it has not yet been published in the market. As a result, and due to the shortness of the time series, it had to be combined with the cross sections to form Panel Data, which is more efficient than both the cross sections and time series data. Panel Data gives better estimates than time series and cross-sections, as it helps to notice some characteristics that do not appear in cross-sections and time series as well, which allows to obtain more efficient estimates that are able to better explain different phenomena (Wooldridge, 2000). Panel Data also expands the sample size, which helps in obtaining better data stability and fewer problems, thus obtaining more efficient estimates (Gujarati, 2003). Deleting some variables may bias the estimators for the original parameters in the regression estimates for time series or cross sections, and this does not happen in panel data if the method of integrating cross sections with time series is correct (that is, if the sample is homogeneous), as well as in the absence of sample homogeneity The paired data reduces the bias that results from the cross sections if their number is large (Gujarati, 2003).

Seemingly Unrelated Regression Model (SURs) technique was used to ensure eliminating correlations between errors across cross-sections. SURs technique includes multiple response variables with multiple explanatory variables. Whereas, the ordinary multiple regression describes the impact of one response variable on a number of explanatory variables. SURs used to exclude associations of random variables across samples in panel models, as the condition for Its use is that the random variables for each sample are equal to zero ($\sum_{i=1}^{n} u_i = 0$ and $\sum_{j=1}^{n} u_j = 0$), and the existence of correlations among the random variables among samples ($\sum_{i=1}^{n} \sum_{j=1}^{n} u_i u_j \neq 0$) (Ghazal & Hegazy, 2015).

The SURs method is more efficient than the combined (OLS) method, such that fixed effects and random effects. The reason is that it allows each cross-section to have different slope coefficients and contrasts from the rest of the cross sections in the panel data. Whereas other methods used for estimating Panel data are conditioned to have equal slope and variance coefficients across units across cross sections (Baum, 2006).

The following model was used to discover the relationship between credit and financial ratios for a sample of Iraqi commercial banks:

$$MC_{it} = \beta_0 + \sum_{i=1}^{n} \sum_{j=1}^{k} \beta_j X_{it} + \mu_{it} \ldots\ldots\ldots (1)$$

Where: j = 1,2,3, ... k, number of explanatory variables, i: cross-section, n: number of cross-sections t: length of time, μ: error term.

$\beta_0, \beta_1, \beta_2, \ldots\ldots, \beta_9$: Model Parameters

MC: Bank Credit

TR: The current ratios that were used are only from the liquidity ratios, since the cash ratios are part of the current ratios, so they are both divided by the current liabilities and the difference in the numerator, as the current ratios take all current assets, while the cash ratios take cash and quasi-money only, and the current ratios were used because they More general and comprehensive than cash ratios, if the two ratios were used together in the equation, there would be multicollinearity of the two ratios being closely related to each other.

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RO: Return on assets ratios has been used, but the return on capital employed has not been used because it is more comprehensive.
ST: stock turnover ratio.
SD: The accounts receivable turnover ratio has been used, but the average collection period has not been used, as it is more comprehensive.
OR: Ownership ratios.
DR: loan ratios.
EP: earnings per share.
IR: Profit repeater.
PD: dividend ratio.

Description of Variables

Bank Credit (MC): It is the trust that allows one of the parties to provide money to the other party, provided that the second party compensates the first party with that money, thus it will generate a debt on the second party, which will result in the payment of that money with interest at a later time, credit is a contractual agreement that allows the borrower By getting something of value and agreeing to pay it back to the lender at a later time, usually at interest (Afriyie et al., 2018). The bank is one of the parties involved in the credit.

Current Ratio (TR): It is one of the ratios of liquidity. This ratio is calculated by dividing current assets by current liabilities. This ratio indicates the amount of cash the company owns and all assets that can be converted into cash within a year, compared to its total liabilities that will become due in the short term (Hantono, 2018).

Return on Assets (RO): It is one of the profitability ratios. This ratio gives investors an idea of how effective the company is in converting the money that must be invested into net income. The higher the return on assets number, the better, because the company makes more money with fewer investments (Prasetyo, 2019).

Stock Turnover Ratio (ST): It is one of the activity ratios. This ratio measures the level of activity of the bank's shares in terms of the investors' desire to trade in the bank's shares, buying and selling. The higher this percentage, the more desirable and the activity of the shares by the investors.

Accounts receivable turnover ratio (SD): It is also one of the activity ratios. It indicates the number of times receivable accounts are collected during the year. The high turnover of accounts receivable leads to the efficiency of converting receivables into cash, but it also means that the credit policy is strict, and the low ratio means , decrease in sales, or the rise in receivables, this indicates that the credit policy lenient.

Ownership Ratio (OR): It is one of the debt ratios and is a measure of the extent to which the owners of the bank, who are the holders of ordinary shares, contribute to the financing of the bank's assets.

Loan Ratio (DR): It is a debt ratio that measures the ratio of loans to the company's total assets. This ratio is considered complementary to the ownership ratio, so its direction is opposite to that of the loans ratio, so this ratio rises with the decrease in the ownership percentage and decreases with its increase.

Earnings per Share (EP): It is a market ratio, and it is a general measure of efficiency, as it represents the share of ordinary shares of profits after deducting the share of preference shares from the net profit after interests and taxes.

Profit Repeater (IR): one of the market ratios and represents the ratio between the share price and its earnings.

Dividend ratios (PD): It is one of the market ratios as well. It represents the ratio between the dividends distributed per share to the market value of the share.

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Unit Root Test

Before estimating the regression function, the data must be tested in terms of stability to ensure that there are no statistical problems, and the stability of the data is verified using the unit root and that the regression function is correct and gives accurate results, but if it does not settle at the same level (I_0), the first differences must be taken, and the data stability tested then, and then a second test called cointegration is used (Asteriou & Hall, 2007).

The (Fisher-PP) test for data stability, developed by Maddala & Wu, was used, as it relies on integrating different significant levels to test the stability of time series variables consisting of panel data (P-values) (Maddala & Wu, 1999). It depends on the values calculated from the (ADF) or (PP) test for each cross section (here PP was used) separately and then taking the significant levels (P-values) for these tests and then the statistical calculation of (Fisher) according to the following formula:

$$\lambda = -2\sum_{i=1}^{n} \log \pi_i \dots\dots\dots\dots (2)$$

Where;
λ: Fisher test
π_i: the level of significance of the cross-section i
$-2\sum_{i=1}^{n} \log \pi_i$ has χ^2 with two degrees of freedom, so λ has a 2 distribution with 2n degrees of freedom (Maddala & Wu, 1999). The test is based on the sum of logarithms of (p) values.

Table 1 displays the unit root test results for Fisher-pp for an intercept and intercept and trend.

Table 1
FISHER-PP UNIT ROOT TEST

Variables	LEVEL(I_0)			
	intercept	p-value	intercept and trend	p-value
MC	-4.956	(0.00)	-3.104	(0.00)
TR	-1.861	(0.03)	-4.233	(0.00)
RO	-1.896	(0.02)	-3.263	(0.00)
ST	-13.187	(0.00)	-15.475	(0.00)
SD	-3.950	(0.00)	-3.601	(0.00)
DR	-3.820	(0.00)	-4.171	(0.00)
OR	-2.714	(0.00)	-3.842	(0.00)
EP	-2.696	(0.00)	-2.122	(0.00)
IR	-7.853	(0.00)	-9.042	(0.00)
PD	-6.581	(0.00)	-9.976	(0.00)

It is noticed from the values of the tests and the levels of significance (P-Values) that all the variables are significant (stable) at the level of significance (5%), since the values of (P-Values) are less than (0.05), as it reached the highest value in the table (0.03), which indicates However, these data give accurate results and do not cause problems related to the random variable, so the estimation results will be accurate.

Correlation Matrix Results

The strength of the correlation between financial ratios, credit, and its direction can be measured by taking the matrix of correlation between variables using the program (Eviews 10). Through this matrix, the strength of the relationship between financial and credit ratios can be obtained. Table (2) illustrates the correlation matrix as follows:

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Table 2
CORRELATION MATRIX BETWEEN BANK CREDIT AND FINANCIAL RATIOS

	MC	TR	RO	ST	ST	SD	DR	OR	EP	IR	PD
MC	1	-0.18 (-1.85)	0.03 -0.28	0.26 -2.76	0.26 -2.76	-0.09 (-0.97)	0.65 -8.84	-0.14 (-1.42)	0.11 -1.18	-0.07 (-0.72)	0.22 -2.3
TR	-0.18 (-1.85)	1	-0.16 (-1.40)	-0.1 (-1.06)	-0.1 (-1.06)	0.09 -0.98	0.04 -0.43	0.69 -9.85	-0.36 (-3.99)	-0.04 (-0.40)	-0.15 (-1.51)
RO	0.03 -0.28	-0.16 (-1.40)	1	-0.03 (-0.35)	-0.03 (-0.35)	0.16 -1.71	-0.04 (-0.45)	-0.08 (-0.84)	0.67 -9.73	-0.35 (-3.90)	0.04 -0.41
ST	0.26 -2.76	-0.1 (-1.06)	-0.03 (-0.35)	1	1	-0.11 (-1.12)	0.26 (2.76	-0.12 (-1.20)	0.14 -1.44	-0.05 (-0.55)	-0.01 (-0.12)
SD	-0.09 (-0.97)	0.09 -0.98	0.16 -1.71	-0.11 (-1.12)	-0.11 (-1.12)	1	-0.1 (-1.06)	0.15 -1.6	-0.08 (-0.80)	0.01 -0.15	0.06 -0.64
DR	0.65 -8.84	0.04 -0.43	-0.04 (-0.45)	0.26 -2.76	0.26 -2.76	-0.1 (-1.06)	1	0.23 -2.41	-0.02 (-0.19)	0.12 -1.29	-0.15 (-1.53)
OR	-0.14 (-1.42)	0.69 -9.85	-0.08 (-0.84)	-0.12 (-1.20)	-0.12 (-1.20)	0.15 -1.6	0.23 -2.41	1	-0.41 (-4.68)	0.28 -2.99	-0.3 (-3.26)
EP	0.11 -1.18	-0.36 (-3.99)	0.67 -9.73	0.14 -1.44	0.14 -1.44	-0.08 (-0.80)	-0.02 (-0.19)	-0.41 (-4.68)	1	-0.33 (-3.63)	0.08 -0.77
IR	-0.07 (-0.72)	-0.04 (-0.40)	-0.35 (-3.90)	-0.05 (-0.55)	-0.05 (-0.55)	0.01 -0.15	0.12 -1.29	0.28 -2.99	-0.33 (-3.63)	1	-0.15 (-1.58)
PD	0.22 -2.3	-0.15 (-1.51)	0.04 -0.41	-0.01 (-0.12)	-0.01 (-0.12)	0.06 -0.64	-0.15 (-1.53)	-0.3 (-3.26)	0.08 -0.77	-0.15 (-1.58)	1

What matters in this study is the relationship of credit with the financial ratios only, that is, the first row or the first column only. As for the rest of the rows or columns, they represent the relationships between the financial ratios, and this is not of interest to the study. It only gives an indication of the existence of linear multiplicity or not.

The correlation matrix in Table (2) shows the correlation between the financial and credit ratios, as well as (t) statistical values. The (t) values show significant relationship between the variables. If these values are higher than (2) (the tabular t-value 2), then the relationship is significant, and if it is less than (2), the relationship is not significant.

This means that the relationship between credit, and each of the stock turnover ratio, the loan ratio and the dividend ratio is significant (since the calculated (t) values for it are higher than (2), as for the credit relationship with the rest of the ratios (current ratios, return on assets, receivables turnover ratio, debt ratio, ownership ratios, earnings per share ratio and Profit repeater ratio) are not significant (since the calculated t-values for them are less than (2).

The relationship between bank credit and both the stock turnover ratio and the dividend ratio is weak and positive, since the correlation values of these relationships are less than (0.30) (from 0 to 0.30 the relationship is weak), the relationship between bank credit and the ratios of loans are medium strength and positive [Being located between (0.30-0.70), which represents the range of the medium-strength relationship]. As for the rest of the ratios, they have no correlation with credit, since the correlation coefficients for them are not significant.

It is noticed from the correlation between the ratios among them that they are not significant, significant and weak or significant and medium strength, and there are no strong relations, which indicate the absence of correlations between financial ratios, which indicates that there is no problem of multicollinearity.

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Regression Function Estimation Results

The (period SUR) technique was used, i.e. SUR method between the time intervals of the cross-sections, which is an abbreviation of the phrase (Seemingly Unrelated Regression Models) and proposed by (Zellner) in (1962) to apply the (GLS) method for the purpose of canceling the correlations between errors across cross-sections (Maddala & Lahiri, 2009). By applying this method, the results were obtained in the following table (3):

Table (3) Results of estimating the relationship between bank credit and financial ratios for a sample of Iraqi commercial banks using (SUR) technique

Table 3
RESULTS OF ESTIMATING THE RELATIONSHIP BETWEEN BANK CREDIT AND FINANCIAL RATIOS FOR A SAMPLE OF IRAQI COMMERCIAL BANKS USING (SUR) TECHNIQUE

Response Variable: MC				
Variables	Coff.	Std. Error	t_stat.	Prob.
TR	0.753	0.139	5.417	0
RO	0.399	0.051	7.88	0
ST	0.014	0.003	4.256	0
SD	0.0006	0.003	0.1778	0.85
OR	-0.077	0.006	-13.804	0
DR	0.054	0.004	12.824	0
EP	-13.075	1.488	-8.792	0
IR	0.00299	0.00265	1.1276	0.26
PD	0.227	0.029	7.811	0
C	1.846	0.228	8.09	0
n=108				
R^2=0.87				
R^2_adj.=0.86				
F_stat=74.89				
Prob.(0.00)				
d.f= 98				
D.W=1.888				

It is noticed from Table (3) and through the probability values (Prob.) of the (t) test that all the coefficients of the significant variables, including the constant limit coefficient, except for the coefficients of the two variables: Accounts Receivable Turnover Ratio (SD) and Profit repeater (IR), the probability values for the significant transactions amounted to less than (0.05), which indicates the significance of these transactions at the level (5%), and it is less than (0.01), which indicates their significance at (1%) also, which indicates that there is an effect of the variables related to credit, while the insignificant transactions amounted to The probability ratios are higher than (0.05), which indicates that they are not significant, and their variables have no effect on credit.

It is concluded from the probability value of (F) test that it is equal to (0.00), which shows the significance of the entire model at the level of significance (5%) and (1%).

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It is inferred from the value of (R_2) that the ratio of the effect of the explanatory variables (financial ratios) on the response variable (credit) is (86%) and the remaining (14%) represents the effect of other variables not mentioned in the model.

The model does not suffer from the problem of autocorrelation, since the value of (D.W) is close to (2).

Table (3) shows that the effect of the current ratios on credit is positive and amounts to (0.753), that is, when the current ratio increases by one unit, the credit increases by (0.753) units. The effect of the return on assets is positive and equal to (0.399), meaning that the increase in returns by one unit increases the credit by (0.399) units. As for the stock turnover ratios, its impact is positive and small in credit, it is equal to (0.014), and this is the result of the increased sales of shares that will provide financial resources for the bank, which encourages lending, or the lending capacity of the bank. No effect of the accounts receivable turnover ratio in credit was observed because the coefficient is not significant. The effect of ownership ratios is negative and small, it is equal to (-0.077), that is, by increasing the ownership by one unit, the credit decreases by (0.77) and this is the result of the investor's preference for ownership over lending to the bank. The investor has two options either to buy the bank's shares, or to put the money in the bank and take interest on it, if the profitability of the shares is more attractive than the interest, he will buy the shares (obtaining the property rights) and dispense with depositing money in the bank, which reduces credit, i.e. increasing the ownership ratios means his preference over depositing money in banks and this is the result of being with a greater return . The effect of loan ratios is positive and low, and that this positive effect is due to the fact that loans are part of credit, so the increase in loans leads to an increase in credit, that the effect of the earnings per share ratios is negative and large as it reaches (-13.075), that is, by increasing the earnings per share by one unit, the credit decreases by (13.075), this is due to the fact that high earnings per share will tempt investors to buy shares instead of depositing amounts in banks and taking interest on them, meaning that they prefer to be owners rather than lenders, this result is consistent with the effect of ownership ratios in credit. The Profit repeater ratio has no effect on credit as it is not significant. While the dividends have a positive effect on credit, this is due to the fact that the distribution of profits gives a signal to investors that the bank has money, which encourages lending and borrowing from the bank. The value of the constant limit (C) shows that the equation starts from a point higher than zero being positive, so the equation starts from (1.846).

CONCLUSION AND SUGGESTIONS

Credit is one of the most important operations carried out by the bank, as it is the main source of the bulk of its income, but what Iraqi banks face is the low levels of credit in them. The study tested the hypothesis that financial ratios are a basic determinant of credit volume and affect it, and that this effect varies according to the different financial ratios, as some ratios are expected to have a positive effect (such as profitability ratios, market ratios and loan ratios from debt ratios) and others have a negative effect (such as Activity ratios and ownership ratios from debt ratios) and others have no effect or take all possibilities (liquidity ratios).

It was noted through the study that the Iraqi Stock Exchange suffered from a weak performance, as there is a great slowdown in publishing data about the companies registered in it, including banks. Despite reaching the second half of the year (2021), the consolidated financial statements, which include information the financial ratios, are data back to the year (2017).

It is clear from the results of the correlation matrix that there is a correlation between credit and each of the stock turnover ratios, loan ratios and dividend ratios, so that with the first and third ratios they are weak and positive, and with the second medium and positive. As for the rest of the ratios did not appear moral.

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According to the regression results, the effect of the current ratios on credit is positive, which indicates that an increase in these ratios leads to an increase in credit in banks, and this is a result of the fact that the increase in the current ratios indicates that the bank's current assets are greater than its current liabilities, which increases investors' confidence that This bank is able to repay loans on demand by investors.

The effect of return on assets and dividend ratio also positive, but they are less influential than current ratios. An increase in one or all of these ratios leads to an increase in credit, because increasing profits means increasing the bank's capital and thus the ability to fulfill loans when requested.

The effect of share turnover ratios and loan ratios is positive but low. An increase in share turnover means more sales of shares and thus more money is available for lending, and loans are part of credit.

The impact of the earnings per share ratios is negative and very large. The increase in the earnings per share leads to a very significant decrease in credit. The increase in the earnings per share encourages investors to buy bank shares instead of depositing them. The effect of ownership ratios is also negative, but it is low. The increase in ownership rates results from the replacement of loans by the purchase of shares for banks by investors. The results of the impact of these two variables are logical. Increasing the earnings per share will increase the ownership ratios financed by the bank's shares. The increase in the sale of shares increases the money in the bank, but its effect remains negative. It is true that the increase in the sale of shares will increase the money in the bank and give confidence in the bank that he is able to save money on demand, but the shares are more attractive than the interests received, since the impact of the return on the share is very large.

There was no significant effect of receivables turnover ratios and Profit repeater ratio.

Accordingly, the suggestions adopted from this study can be summarized as follows:

Taking care of publishing financial information regarding financial ratios in the Iraqi Stock Exchange so that investors can observe this information to give them a comprehensive view of the banks so that they can invest their money in these banks and provide them with confidence about investments.

Banks take care of financial ratios by reaching the optimal ratios of liquidity ratios that lead to an increase in credit, since their impact is positive on credit.

Being keen to increase returns on assets for banks by achieving efficiency in the use of these assets as they are able to increase credit, as their impact is positive, and that increasing returns means increasing the bank's capital, i.e. providing more funds for the purpose of investment.

Paying attention to the distribution of profits to investors in banks, as they have a positive effect on credit, and that this distribution of profits is through increasing the profits of the bank resulting from investing money in areas of high and guaranteed profitability.

REFERENCES

Afriyie et al., S.O. (2018). Credit risk management system of commercial banks: An analysis of the process *European Journal of Accounting, Auditing and Finance Research, 6*(6), 1-11.

Arilyn, M.I. (2016). Effects of inventory turnover, total asset turnover, fixed asset turnover, current ratio and average collection period on profitability. *Journal of Business and Accounting, 18*(1), 79-83.

Arkan, T. (2016). The importance of financial ratios in predicting stock price trends: A Case study in emerging markets. *Finance, Financial Markets, Insurance, 1*(79), 13-16.

Asteriou, D., & Hall, S.G. (2007). *Applied Econometrics*. Published By Palgrave Macmillan, China.

Awuor, C.O. (2011). *The use of financial ratios for credit evaluation by commercial banks in Kenya*. Master Thesis, University of Nairobi.

Cam et al., A.V. (2015). *The role of financial ratios to determine the value of stock: A application in Bist*. European conference on social and behavioral sciences, 1-14.

Citation Information: Yassen, S.T., & Alrefaee, S.A.S. (2022).The effect of financial ratios on bank credit for a sample of Iraqi commercial banks. *Academy of Strategic Management Journal, 21*(S6), 1-12.

Ghazal, G., & Hegazy, S. (2015). Mixed estimation in seemingly unrelated regression equation model some finite sample properties results. *International Journal of Scientific & Technology Research, 4*(03), 173-179.

Gujarati, D. (2003). *Basic Econometrics*, Mc Graw Hill.

Hantono. (2018). The effect of current ratio, debt to equity ratio, toward return on assets (case study on consumer goods company). *Accountability*, 7(2), 64-73.

Heikal et al., M. (2014). Influence analysis of Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), Debt to Equity Ratio (DER), and Current Ratio (CR), against corporate profit growth in automotive In Indonesia Stock Exchange. *International Journal of Academic Research in Business and Social Sciences, 4*(12), 101-114.

Khan et al., M.I. (2019). Re-classification of financial ratios, ICBSI 2018International Conference on Business Sustainability and Innovation. *The European Proceedings of Social & Behavioural Sciences, 8*(4), 35-44.

Kurniawan, A. (2021). Analysis Of the effect Of Return on Asset, Debt to Equity Ratio, And Total Asset Turnover On Share Return. *Journal of Industrial Engineering & Management Research, 2*(1), 64-72.

Lesáková, L. (2007). Uses and limitations of profitability ratioanalysis in managerial practice. *International Conference on Management, Enterprise and Benchmarking, 1*(2), 259-264.

Maddala, G.S., & Lahiri, K. (2009). *Introduction to Econometrics, John Wiley and Sonsltd, (Fourth Edition)*. United Kindom.

Maddala, G., & Wu. S. (1999). A comparative study of unit root tests with panel data and new simple tests. *Oxford Bulletin of Economics and Statistics, Special Issue,* 0305-9049, 631-652.

Nasution et al., A.E. (2018). The effect of debt to equity ratio and total asset turnover on return on equity in automotive companies and components in Indonesia. *Advances in Economics, Business and Management Research, 92*(3), 182-188.

Pashkova, O. (2016). *Credit risk management of SMEs through financial ratio analysis case: Company Y. Master Thesis*. School of Business Degree Programme in International Business, JAMK University of Applied Sciences.

Prasetyo, E.T. (2019). *Profitability ratio analysis for determining stock investment in Pt. Unilever Indonesia 2008-2018 Period*. Faculty of Economics, Bhayangkara Jakarta Raya University, 1-10.

Rashid, C.A. (2018). Efficiency Of financial ratios analysis for evaluating companies' liquidity. *International Journal OF Social Sciences and Educational Studies, 4*(4), 110-123.

Soares, J.O., & Pina, J. (2014). Credit risk assessment and the information content of financial ratios: A multi-country perspective. *Wseas Transactions on Business and Economics*, *11*, 175-187.

Wooldridge, J.M. (2000). *Introductory Econometrics: A Modern Approach*. South- Western College Publishing, United States of America.

Zorn et al., A. (2018). Financial ratios as indicators of economic sustainability: Synergies and trade-offs for Swiss dairy farms. *International Farm Management Congress, 1*, 1-15.

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