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Analyzing the Impact of Financial Ratios on Firm Financial Performance “Applied Study on Agriculture Sector”

SUMMARY

The sector of agriculture plays a significant role in boosting economic growth in many countries. Therefore, all firms' annual reports must be analyzed for the purpose of comparing and establishing a benchmark. The objective of this study is to investigate the effect of application of financial ratios on firms' financial performance. In order to achieve the purpose of the study, an econometric model is developed to estimate relationship among the variables by using multiple linear regression method. The data in this study is based on secondary data and collected from the audited financial statement of agriculture companies that listed on Iraqi Stock Exchange (ISX) over the period (2016-2020). The robust findings demonstrated that all independent variables quick ratio, current ratio and debt to assets ratio have positive and significant impact on financial performance. The most significance effect on firm performance is observed by current ratio and debt to assets ratio among the ratios that selected in this study.

Keywords: financial ratios; financial performance; agriculture sector; emerging market

Jel classification: G14; G30; G32

INTRODUCTION

Performance evaluation of a company is usually related to how well a company can use its resources such as firm's assets, shareholder equity and liability, revenue and expenses. Any improvement in the financial and operational performance of firms that are publicly traded will have an effect on stock prices and on increasing the overall value of firms as well (Tracy, 2012; Kadim et al., 2020). Financial ratio analysis is also one of the best tools for evaluating the firms performance and their profitability (Ahmed & Muhammed, 2018). Financial ratios are established by contrasting two or more components from the company's financial reporting over a certain time period (Yousaf & Dey, 2022). Hence, the stability and responsibility of a companies are assessed through the examination of financial metrics.

Moreover, financial ratios have been a conventional but still effective method for managers, investors, company researchers, creditors in order to assess the performance of the firms (Delen et al., 2013). Instead of using the total amounts that shown on the statement of financial position, income statements, statement of owners' equity and cash flow statement, these inspections can be used through employing a variety of financial ratios to achieve relevant findings (Ahmed, 2018). Ratio analysis can assist shareholders and other stakeholders' group to assess the financial stability of a firm. Comparisons

between firms among similar industry, or other industries, or within a single company may be conducted with these financial metrics (Delen et al., 2013).

Further, these ratios are typically categorized into different groups in finance and accounting studies, which includes, profitability, solvency ratio, liquidity ratio, efficiency ratio and market value ratio (Delen et al., 2013). They can be calculated through balance sheet (assets and liabilities), income statement (revenue and expenses), owners' equity (common and preferred stock) and cash flow statement (operating activities, investing activities and financing activities) (Bansal, 2015; Ahmed et al., 2023). Additionally, liquidity ratios assess a firm capacity to settle debt on a short-term basis, while solvency ratios examine to indicate how risky a company can be for creditors to make investments in (Kumbirai and Webb, 2010). Profitability ratios measure a company's capacity to generate a profit according to their sales, capital, and resources (Ahmed, 2018; Delen et al., 2013). The efficiency ratio is frequently used to evaluate how well a corporation utilizes its resources and obligations on its internal level, while, market value ratios are financial measurements that assess stock prices, evaluate them in relation to other companies as well as additional data points (Ahmed, 2018).

This study is aimed, first, to explore the application of different financial ratios on financial performance to observe the right position of firms. Secondly, it is aimed to identify the most accurate financial ratios that can be used as an indicator for improving the company performance of agriculture sector of a developing country. The sector of agriculture is key driver of any growing economy and important factor in every growing market. It is also crucial for both industrial and general economic development. In Iraq, the agriculture sector can also be seen as a significant sector to contribute the economic growth and will become a second economic contributor in 10 years later due to recent growth and development in this sector (CBI, 2020).

From the prior investigations, numerous studies have been conducted on the usefulness of different financial ratios with different methodology on determining the financial health of the firms (Ahmed, 2018; Bose, 2006; Delen et al., 2013; Habibi & Iqbal, 2020; Valaskova et al., 2018; Wang & Chen, 2006; Zaini & Mahmuddin, 2019; Borhan et al., 2014). They found that the application of financial ratios has a significant and positive impact on improving the firm's financial performance. However, only few of them found the most effective and useful ratio on enhancing the firm performance and profitability. In addition, to our knowledge, no studies have examined the effect of ap-

plying different financial ratios on financial performance in agriculture sector in Iraq. Therefore, by filling the above gap, this study will run the analysis for the listed agriculture companies on Iraqi Stock Exchange (ISX) and will explore the role of financial ratios on improving the financial performance in a significant sector.

LITERATURE REVIEW

Financial ratios refer to how well financial goals have been or are being achieved. It is an approach for evaluating the financial effects of a company's decisions and actions (Whittington & Pany, 2001). The previous literature provides evidence that financial metrics as a tool for assessing the financial performance is important in terms of showing how effectively a company used their assets that related to its core business strategy and create more income (Ejoh & Ejom, 2014).

Starting with (Gallizo & Salvador, 2003) who conducted an investigation on the industrial sector in The United State through applying different financial ratios for eight years from 1993-2000. Their study emphasizes the adjustment and behavior procedure of the same period. The study found that a healthy balance between assets and sales often indicates that the assets are handled and used well to generate revenue. The study concludes that the primary goal of the firms is to increase profits, the profitability ratios can be used as a main measurement to assess the company's overall effectiveness.

Similarly, Kumbirai & Webb (2010) conducted a study on the role of financial ratio analysis on performance of commercial banks that listed on Johannesburg Stock Exchange (JSE) during (2005-2009). The findings illustrated that the bank performance is significantly improved in all aspects due to applying financial ratios as an evaluation for the company's health consciously. Padachi (2006) also performed a study of 58 listed SME manufacturing companies during (1998-2003) to demonstrate the connection between the management of working capital and business achievement. The results demonstrated that higher investments in inventory and receivables are related to lower profitability. The critical elements, used in this study, is financial ratios. Finally, the study concludes that profitability of listed firms is significantly impacted by working capital management. Ramaratnam & Jayaraman (2010) also employs financial metrics to assess the liquidity, profitability, and long-term viability of the listed Indian steel company over the period of five years (2005-2010). The study shows that the excessive capacity and decreased demand which contributed to price reduction are responsible for the unstable situation in the Indian steel sector. Due to the market's imbalance between

demand and supply, the United States and several European nations implemented anti-dumping penalties. Finally, the study concludes that the application of financial ratios is helpful to show the actual health of the firms.

Saleem & Rehman (2011) investigated the association between liquidity and profitability of listed oil and gas firms on Pakistan Stock Exchange (PSX). The findings illustrate that return on assets is significantly impacted by liquidity ratios, however, the relationship between liquidity and return on equity and return on investment is reported to be insignificant. Similarly, Ahmed (2018) performed a research on analyzing the financial statement and their effect on firms profitability. The study applied a various financial ratio to analyze the firm annual reports during seven years (2005-2011). The study demonstrated multiple results, the association between assets utilization ratio and profitability ratio is insignificant, while the association between liquidity and profitability ratio is positive and weak. Lastly, the findings displayed that the financial leverage ratios are positively linked to firms' profitability. Innocent et al. (2013) managed a study on the connection between the evaluation of financial ratios and firms' profitability of listed pharmaceutical companies on Nigerian Stock Exchange (NSX) between the years (2001-2011). The study utilizes different variables, such as, profitability ratio, efficiency ratio and liquidity ratio. The findings reveal that the analysis of financial ratios has potential effect to assist companies in increasing their capacity to generate revenue and reduce expenses. The research concluded that profitability is positively impacted by all independent variables.

METHODOLOGY

Sample and Data

This study utilizes person correlation in order to measure the relationship between the variables. Additionally, the research uses multiple regression method to investigate the connection between dependent and independent factors and also to determine the degree of control that the financial ratios have over the financial performance. The variables in this study were selected based on reviewing prior studies. The data in this study is based on secondary data and collected from the audited annual reports of listed agriculture companies on Iraqi Stock Exchange (ISX) over the period (2016-2020). We focused on the aforementioned period because the Covid-19 epidemic causes delisting and death of some listed firms. Thus, the firms' financial information for 2021 was unavailable for some selected firms. Table 1 displays the sample firms with their date of establishment, initial invested capital and invested capital in 2020.

Table 1: Sample of companies that used in this study

No.	Name of the company	Code	Year of establishment	First invested capital (IQD)	Invested capital in 2020 (IQD)
1	Al-Ahlyia for Agricultural Production	AAHP	1994	110,000,000	375,000,000
2	Iraqi Agricultural Products Marketing Meat	AIPM	1987	40,000,000	50,000,000,000
3	Iraqi Agricultural Products	AIRP	1984	10,000,000	360,000,000
4	Iraqi for Seed Production	AISP	1989	50,000,000	13,650,000,000
5	Modern Animal & Agricultural Production	AMAP	1991	10,000,000	4,101,300,000
6	Middle East Producing & Marketing-Fish	AMEF	1994	236,000,000	300,000,000
7	AL-Rebass for Poultry & Feed	AREB	2015	30,000,000,000	30,000,000,000

Source: Elaborated by the authors (2023)

Variable definition

The dependent variable is profitability and measured by return on equity (ROE) (Yousaf & Dey, 2022). The independent variable is liquidity and solvency (Delen et al., 2013; Kadim et

al., 2020). Liquidity is indicated by cash ratio (CR) and current ratio (CR), while solvency is proxied by debt to assets ratio (DTA). Table 2 shows a summary of the variables that used in this study.

Table 2: Variable definition

Variables		Measurement	Abbreviation	Definition
Dependent Variable	Financial performance	Return on Equity	ROE	Net Income / Total shareholders' equity
Independent Variable	Liquidity	Quick Ratio	QR	(Current Assets – Inventory) / Current Liabilities
		Current Ratio	CR	Current Assets / Current Liabilities
	Solvency	Debt to Assets	DTA	Total debt / Total assets

Source: Elaborated by the authors (2023)

From the above explanation, the regression model is generated as follow:

$$ROE_{it} = a_0 + \beta_1 QR_{it} + \beta_2 CR_{it} + \beta_3 DTA_{it} + e_{it}$$

Where, ROE_{it} indicates return on equity from I at t time, QR_{it} is quick ratio from I at t time, CR_{it} is current ratio from I at t time, DTA_{it} is debt to assets ratio from I at t time, a_0 is a constant, $\beta_1 - \beta_3$ is coefficients for answering the independent variables and e_{it} is a standard error from I at t time.

RESULTS AND DISCUSSION**Descriptive statistics**

Table 3 shows the descriptive analysis of dependent and independent variable during the study period (2016-2020). Re-

turn on equity (ROE) as a dependent variable has a mean value of 0.219 with a standard deviation of 0.194. The minimum and maximum value of ROE are 0.008 and 0.876 respectively. Among the independent variables, current ratio (CR) has a large mean value of 5.857 with a deviation of 0.926. CR has a lowest and highest value of 3.940 and 7.870 respectively. Quick ratio (QR) and debt to assets (DTA) have arithmetic mean value of 2.251 and 0.138 with a standard deviation of 0.908 and 0.129 respectively. The minimum and maximum value of QR is 0.250 and 4.180, while the minimum and highest value of DTA is -0.103 and 0.475 respectively. These results indicated that the application of financial ratios has a significant effect on financial performance of agriculture companies in Iraq.

Table 3: Descriptive results

Variables	N	Min.	Max.	Mean	Std. Dev.
ROE	35	0.0081	0.8764	0.2192	0.1944
QR	35	0.2500	4.1800	2.2511	0.9087
CR	35	3.9400	7.8700	5.8577	0.9264
DTA	35	-0.1033	0.4753	0.1382	0.1298

Source: Elaborated by the authors based on the SPSS result (2023)

Correlation matrix

Table 4 illustrates the Pearson correlation between ROE, QR, CR and DTA. The relationship between ROE and QR is significant and positive with a coefficient of 0.206 at 1% level of significance. CR as an indicator of liquidity is related to ROE positively with a coefficient of 0.255 and the result is significant at 10% level. The association between DTA and ROE is

also positive with a coefficient of 0.831 and significant at 1% level. The connection between independent variables is also presented in table 4. QR has a negative association with CR with a value of -0.359 at 5% significance level. Similarly, DTA has affected by QR and CR negatively with a coefficient of -0.088 and -0.003 respectively at 10% and 5% level of significance.

Table 4: Correlation analysis

Variables	ROE	QR	CR	DTA
ROE	1			
QR	0.206***	1		
CR	0.255*	-0.359**	1	
DTA	0.831***	-0.088*	-0.003**	1

Note: *, ** and *** indicate the level of significance at 1%, 5% and 10% respectively (two-tailed)

Source: Elaborated by the authors based on the SPSS result (2023)

Further, table 4 also investigates the issues of multicollinearity. Multicollinearity or collinearity can be a problem when the relationship between two or more independent variable are high be-

cause it has a significant effect on the regression results and analysis. According to Drury (2008); Frank et al. (2017); Gujarati & Porter (2009); Schmidt & Muller (1976) collinearity can be seen

as a problem when the relationship between two independent variables are higher than 70%. Table 4 shows that the connection between all independent variables is lower than 70%. Therefore, multicollinearity or collinearity is not a problem in our investigation.

Model summary

Table 5 shows the results of model summary. It shows the percentage of variation in financial performance as a dependent

variable that is determined by the ratios of liquidity and solvency (independent variables). R square is 0.770, which means that 77% of variance of ROE is explained accurately by QR, CR and DTA. In other word, QR, CR and DTA have significant influence on ROE of the agriculture companies in Iraq by around 77%, while the remaining 23% is determined by other factors that is not mentioned in the study model and random error term.

Table 5: Model summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.877 ^a	0.770	0.748	0.0976

a. Predictors: (Constant), Quick ratio, Current Ratio and Debt to Assets

b. Dependent Variable: Return on Equity

Source: Elaborated by the authors based on the SPSS result (2023)

ANALYSIS OF VARIANCE

Table 6 displays the appropriate combination of independent variables "liquidity and solvency" that contribute the association with dependent variable "financial performance". The findings of table 6 illustrates that the value of F is 34.575 and

significant at 0.000 (P value is less than 5%). This means that there is a significant effect of financial ratio analysis on firms' financial performance. In other word, current ratio, quick ratio and solvency ratio have considerable impact on return on equity of agriculture companies in Iraq.

Table 6: ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	0.990	3	0.330	34.575	0.000 ^b
	Residual	0.296	32	0.010		
	Total	1.285	35			

a. Dependent Variable: Return on Equity

b. Predictors: (Constant), Quick ratio, Current Ratio and Debt to Assets

Source: Elaborated by the authors based on the SPSS result (2023)

DISCUSSION

Table 7 shows the empirical results of regression model that can explain the relationship between the dependent and independent variables empirically. As it can be seen that QR has a significant and positive effect on ROE with a coefficient of

0.047 and the result is significant at 10% percent. This means that if other factors remain constant, 1% increase in QR ratio causes to a rise of firm's financial performance by 0.04 percent that is measured ROE as a dependent variable.

Table 7: Regression results^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-0.149	0.141		-1.059	0.298
	QR	0.047	0.035	0.222	1.346	0.188
	CR	0.015	0.034	0.070	0.423	0.067
	DTA	1.274	0.131	0.851	9.743	0.000

Dependent Variable: Return on Equity

Source: Elaborated by the authors based on the SPSS result (2023)

In addition, ROE has also affected by CR with a coefficient value of 0.015 and the finding is significant at 5% level. Assume that other variables remain unchanged, this basically means that a 1% raise in CR brings about an increase of financial performance by 0.015 percent that is indicated by dependent variable (ROE). The robust results also demonstrates that DTA as a measurement of solvency has a positive and significant influence on ROE with a coefficient of 1.274 and the result is significant at 1% level. If other factors are not changed, this is meaning that a 1% increase in DTA causes to an increase of financial

performance by more than 1.25 percent that is estimated by ROE as a dependent variable.

These findings are consistence with the arguments of (Ahmed, 2018; Borhan et al., 2014; Delen et al., 2013; Habibi & Iqbal, 2020; Kumbirai & Webb, 2010; Padachi, 2006; Ramaratnam & Jayaraman, 2010; Saleem & Rehman, 2011; Valaskova et al., 2018) who stated that the application of different financial ratios has a positive influence on improving the firm's financial performance.

Moreover, as it can be observed that all variables have a posi-

tive significant impact on firms' financial performance. Hence, each aspect of the financial statement (balance sheet, income statement, cash flow statement and statement of owners' equity) needs to be enhanced in order to maintain a strong financial performance. The firm must carefully handle both its current assets and liabilities for the purpose of maintaining a healthy liquidity ratio. The greater quick ratio (QR) and current ratio (CR) demonstrates the firm's ability to pay back their debts and obligations when they are due. Further, the company may seek to additional short- and long-term funding to boost the long-term growth. As a result, the firm's capital is maximized, which has a positive effect on increasing the total revenue. The debt to assets ratio (DTA) is a significant ratio and indicates that how the firm's capital is financed by debt.

CONCLUSION AND RECOMMENDATION

The purpose of this study is to analyze the effect of different financial ratios on firm performance of listed agriculture companies on Iraqi Stock Exchange (ISX) during (2016-202). The study utilizes a descriptive research design and in order to obtain the study aim, an econometric model is developed to measure the above relationship. Profitability is a dependent variable and measured by return on equity (ROE). On the other hand, liquidity and solvency is determined to be independent variables and estimated by quick ratio, current ratio and debt to assets ratio. Through analyzing and implementing the data on SPSS software, the empirical findings display that ROE as a measurement of financial performance is positively impacted by QR, CR and DTA in agriculture companies that listed on Iraqi stock exchange. The results are significant at 1%, 5% and 10% level of significance. The robust findings illustrated that liquidity and solvency ratio are the main factors that have a significant impact on financial performance. ROE is also the element that has a significant impact on the firm's net profit, therefore an increase in return on equity will improve the financial health of the company as a whole. Overall, the empirical findings show that the application of financial ratios has a crucial influence on improving the firm's financial performance and profitability. Thus, financial managers, investors, creditors, shareholders and other stakeholders should use these ratios frequently in order to evaluate the financial health of the firm. In case of observing any unacceptable rate for any ratios, they should find a solution for improving otherwise the company will end with bankruptcy. Finally, it is suggested that agriculture companies must improve their credibility and apart of using use their current resources, they should also purchase additional assets to boost their profitability and enhance their performance. The primary ratio is used for evaluating the firm's financial stability is liquidity and solvency ratio and in order to enhance the firm's financial performance, the company must reduce their expenses and increase total income and the availability of cash.

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