

The Impact of Financial Management Efficiency on the Financial Solvency of Banks on Iraq

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ABSTRACT

The study aims to investigate the impact of financial management efficiency (financial planning, internal control, administrative control) on the financial solvency of Iraqi banks. The quantitative approach was used by developing a digital questionnaire that was distributed to a purposive sample of the study population, which includes senior management employees (General Director, Deputy Director, Financial Manager Administrative Manager) in the Iraqi banking sector, which number (13) banks. 99 valid questionnaires were retrieved for statistical analysis, and to answer the study's questions and hypotheses, the data were analyzed using SPSS.

It was concluded that the efficiency of financial management was able to explain (97%) as a direct impact on financial solvency, as financial planning and internal control have a significant impact on financial solvency. Whereas administrative control had no impact on the financial solvency of Iraqi banks. Whereas the results of the analysis were as follows: The arithmetic means of the independent variable (financial management efficiency) had high degrees of agreement, ranging between (3.85-3.69), where the (internal control) dimension obtained the highest, and the (administrative control) dimension obtained the lowest, The general index of financial management efficiency was (3.79), and the dependent variable (financial solvency) achieved an arithmetic mean of (3.86) with a high degree.

Keywords: *Financial Planning; Internal Control; Administrative Control; Financial Solvency*

INTRODUCTION

The global economy has witnessed many financial crises that had a clear impact on the economies of most countries in the world, which prompted many researchers to search for the causes of these crises. One of the results of most of that research was that the performance of banks is the main focus of these crises (Awadh & Mohammed, 2022).

Increased interest in banking problems and activating supervision over them due to their great economic importance and huge costs. Therefore, central banks and the Basel International Committee sought to create supervisory systems with the aim of hedging against these crises and the losses resulting from them, to preserve the survival of banks and their depositors' funds, as a result of the special nature that distinguishes banks from other institutions, It is the small size of their capital compared to the money deposited with them (Ayyash & Al-Ayeb, 2018), because they are financial institutions that depend on the funds of others in their work, this made it difficult to determine the factors and variables affecting the financial solvency of this sector (Awad & Muhammad, 2022). Despite the interference of these variables in front of the decision maker, the most famous factors that may have an impact on financial solvency are the efficiency of financial management (Reda et al., 2017).

Hence, this study seeks to examine the impact of financial management efficiency (financial planning, internal control, administrative control) on financial solvency in Iraqi banks. This will be accomplished through the following objectives:

- Investigating the impact of financial management efficiency on financial solvency in Iraqi banks.
- Identify the degree of application of the solvency index in Iraqi banks.
- Identify the impact of financial planning on the financial solvency of Iraqi banks.
- Identify the impact of the internal control system on the financial solvency of Iraqi banks.

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- Identifying the impact of administrative control on the financial solvency of Iraqi banks.
- Recognizing the reality of the financial solvency of Iraqi banks.

Study hypotheses

In view of the study problem and its questions, the study hypotheses were formulated as follows

Main hypothesis:

H1: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of financial management efficiency on financial solvency in Iraqi banks.

The following sub-hypotheses emerge from the main hypothesis:

The first sub-hypothesis: H01: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of the efficiency of financial management, represented by financial planning, on the financial solvency of Iraqi banks.

The second sub-hypothesis: H02: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) for the efficiency of financial management, represented by internal control on financial solvency in Iraqi banks.

The third sub-hypothesis: H03: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) for the efficiency of financial management, represented by administrative control over financial solvency in Iraqi banks.

THEORETICAL BACKGROUND

The banking industry plays a crucial role in the global economy, serving as the backbone of financial stability and facilitating economic growth. However, to ensure the sustainability and resilience of the industry.

Banks face financial and operational risks, which requires them to take appropriate preventive measures and precautionary measures to manage those risks that affect the financial position, which weakens their ability to fulfill their obligations. Financial management is considered an important and vital activity and one of the basic pillars on which banks are based, as it is the mechanism that controls how to raise funds, invest them, and manage assets and liabilities to ensure financial stability and achieve profitability.

Financial management also directly contributes to formulating financing strategies that determine methods of attracting capital and its cost, as well as distributing profits. It is also responsible for monitoring financial risks and implementing measures to control them. Financial management ensures that banks are able to meet their short- and long-term obligations and maintain sufficient liquidity for their daily operations (Shah, 2015).

Financial management

Financial Management refers to "the application of general management principles to the various financial resources which are projecting, this encompasses planning, organizing, directing and controlling of the financial activities (Grozdanovska et al., 2017).

Financial management is defined as the administrative activity concerned with creating and preserving the economic value of the organization. Which leads to a focus on the financial decision-making process in the organization and its impact on the economic value of the organization (Reda et al., 2017). It is also the activity related to obtaining funds in an optimal manner and allocating these funds in a way that helps maximize shareholders' wealth.

The importance of financial management lies in ensuring financial sustainability, by ensuring that the institution is able to meet its financial obligations sustainably and without problems. In addition to maximizing profits by managing costs and increasing revenues (Grozdanovska et al., 2017).

Financial Solvency

Solvency refers to the institution ability to meet its financial obligations and maintain a positive net worth by having sufficient assets to cover its obligations (Robinson et al, 2015). The importance of financial solvency in the banking industry cannot be overstated. A strong bank builds trust among depositors, investors, and regulators, promoting

financial stability (Jackson et al., 2002). When a bank can repay its debts, it can satisfy consumer withdrawals, loan obligations, and possible losses without insolvency or outside help. However, an insolvent bank may face insolvency, causing economic instability (Khidmat & Rehman 2014).

For survival, banks must achieve regulatory capital adequacy ratios (CARs). A bank's financial health is determined by its capital adequacy ratio to its risk-weighted assets. To safeguard depositors, financial stability, and bank risk-taking, regulators impose minimum standards (Abdullah, 2021). Along with capital adequacy, liquidity measures bank solvency. The bank's ability to meet short-term obligations and fund depositors and borrowers is called liquidity. To handle unexpected withdrawals, fund new loans, and maintain confidence, banks require liquidity (O'Brien & Hubbard, 2012). Bank failures can result from liquidity crisis and bankruptcy.

Banks must manage liquidity to survive. Maintaining cash and marketable securities balances and monitoring liability maturity dates is necessary. Banks may employ central bank liquidity tools and emergency financing plans to satisfy unexpected liquidity demands. Bank solvency is determined by capital and liquidity ratios. The bank's capital adequacy ratio and liquidity determine its financial health and loss tolerance. Monitoring and managing these variables helps banks protect depositors and borrowers. (Odekina et al., 2019).

Empirical Review

Financial management and solvency have been studied extensively, including (Nanzala & Ingabo, 2021), which explored how internal control affects Rivers State hotel finances. Studies show internal control improves financial success. Financial efficiency increases with internal control system effectiveness and accuracy.

Abdel Samie and Mazouz, 2020, examined the administrative efficiency, financial solvency, and liquidity of some Egyptian insurance companies and their impact on their profitability from 2013-2018. The independent factors analyzed together directly and strongly correlated with all companies' profitability.

While the study of Barus et al. 2017 to evaluate the impact of management efficiency on the financial performance of savings and credit associations in Kenya. The results revealed that management efficiency does not have a significant impact on the financial performance of savings and credit associations.

In a study prepared by Ikapel et al., 2019, it aimed to investigate the impact of financial management efficiency on the financial performance of commercial banks in Kenya. The results showed that there is a strong and positive relationship between financial management efficiency and the financial performance of commercial banks in Kenya.

The main purpose of the study by Bismark et al., 2018 was to investigate the impact of financial management practices on the growth of small and medium enterprises in Ghana within the Berrim Central Municipality. The study concluded that most of the sample members sometimes practice financial management. The results also showed that most respondents completely agreed on the importance of financial management practices. While the 2022 study by Mohammed & Awadh, aimed to measure the impact of the capital adequacy index on the financial stability of banks.

The research concluded that there is a positive significant relationship between capital adequacy as an independent variable and the financial stability index (Z_SCORE) as a dependent variable.

Finally, the Shah (2015) study aimed to identify the impact of financial management performance on the organization's profitability. The study revealed the conclusion that the characteristics of financial management practices can lead to higher profitability and greater stakeholder wealth. Hence, business organizations can improve profitability by increasing the effectiveness of best practices and characteristics in financial management.

RESEARCH METHODOLOGY

To achieve the objectives of the study and answer its questions, the descriptive method was used.

Study population and sample

The study population consisted of an estimated number of (215) senior management employees consisting of (13) in the Iraqi banking sector, where the researcher published a digital questionnaire via Google Drive using a simple random sample, and after 50 days, 99 questionnaires were received that are valid of statistical analysis.

The final version of the questionnaire consisted of (46) items divided into (33) items to measure Efficiency of financial management, and (13) items to measure financial solvency. The study included a five-point Likert scale in the questionnaire to provide greater freedom to participants in their answers. The scale consists of values ranging from 1 to 5, representing the options Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. This allowed participants to effectively measure the variables investigated in the study. Based on the foregoing, the values of the arithmetic averages reached by the study will be dealt with as follows: (3.67-and above: high), (2.34-3.66: medium), (2.33-and below: low).

The study tool was presented to a committee of experienced, competent, and specialized academic referees to obtain their judgments and comments on:

Evaluate the suitability of the paragraphs for the scale and the suitability of the study tool in terms of the quantity of the paragraphs, the diversity of their content, the correctness of their language, the clarity of their meanings, or any other relevant notes that they deem necessary, whether by amendment, change, or deletion. All proposed amendments were taken into consideration, and some amendments were made, such as clarifying terminology and correcting linguistic errors.

Table (1) shows the results of validity and reliability. It shows that the Cronbach's alpha value for the questionnaire variables ranged from 76% to 90%, while the self-honesty coefficient ranged from 87% to 95%.

The Cronbach's alpha value for the entire questionnaire reached (96%) with a self-reliability coefficient (98%). Hence, the study instrument is categorized as dependable, the data is appropriate for quantifying variables, and the values are subject to a significant level of reliability. All of them have reliability levels beyond the minimum acceptable threshold of 60%.

Table 1. Validity and reliability:

variables	Number of items	Cronbach's Alpha	coefficient of self-validity
Financial Planning	10	0.84	0.92
Internal Control	15	0.90	0.95
Administrative Control	8	0.76	0.87
Solvency	13	0.88	0.94
All questionnaire	46	0.96	0.98

In statistical analysis, ensuring the validity and reliability of the results is paramount for researchers. These aspects play a crucial role in determining whether the conclusions drawn from the analysis can be confidently applied to the broader study population or if they have limited generalizability.

Validity and reliability are particularly associated with the instruments utilized in scientific research, assessing their effectiveness in capturing the meanings and information derived from the researcher's investigation.

To assess the tool's consistency, researchers commonly employ the Cronbach's Alpha coefficient for measuring reliability, and the coefficient of self-honesty to gauge validity, with the latter being the square root of the reliability coefficient. This process ensures that the research tools are not only stable but also accurately measure the intended concepts and information acquired through the scientific inquiry

Table (2) shows descriptive statistics related to the dimensions of (financial management efficiency) and financial solvency. Ratings represent participants' strong agreement with the questions asked.

Table 2. the Compare between the mean of the variables of the Efficiency of financial management dimension

variable	mean	SD	Evaluation
Financial Planning	3.79	0.50	high
Internal Control	3.85	0.48	high
Administrative Control	3.69	0.50	high
general mean	3.79	0.50	high

The mean scores for Internal Control (3.85) and Financial Planning (3.79) are slightly higher than that of Administrative Control (3.69), indicating a relatively stronger perception of effectiveness in Internal Control and Financial Planning compared to Administrative Control within the dimension of Efficiency of Financial Management.

However, all three variables are evaluated as "high," suggesting a generally positive perception of their effectiveness in contributing to the efficiency of financial management within the organization.

The standard deviations for all variables are relatively low (around 0.50), indicating a relatively consistent level of agreement among participants regarding the effectiveness of these variables. Below are the descriptive statistics for the dimensions of the financial management efficiency variable.

Table 3. mean, standard deviations and evaluation of the responses of the study sample members to the Financial Planning variable

N	item	Mean	SD	Evaluation
1	When preparing plans, expected losses and unexpected losses are taken into account	3.54	0.98	medium
2	Emergency financial plans are developed in the event that the bank is exposed to financial risks that could affect the continuity of its work	3.95	0.60	high
3	The Bank adopts budgets and planning as a tool to improve the efficiency of financial management	3.91	0.70	high
4	The Financial Planning Department contributes to finding solutions to financial problems that arise	3.95	0.75	high
5	The Financial Planning Department provides a comprehensive financial plan for all activities in the bank	3.75	0.82	high
6	There are training and development programs for employees working in the Financial Planning Department	3.40	0.97	medium
7	The Financial Planning Department contributes to finding solutions to financial problems that arise in the bank.	3.59	0.82	medium
8	The Financial Planning Department provides a comprehensive financial plan for all activities in the bank	3.97	0.78	high
9	Comparison is made between actual performance and planned goals	4.06	0.55	high
10	The bank adopts a system to review the dates for paying obligations and obtaining financing.	3.82	0.73	high
	General mean	3.79	0.50	high

Items with mean scores close to 4 or higher (e.g., Items 2, 3, 4, 5, 8, 9, and 10) indicate a high level of agreement among participants regarding those aspects of Financial Planning.

For example, participants strongly agree that emergency financial plans are developed, budgets are adopted to improve financial management efficiency, and the Financial Planning Department contributes to finding solutions to financial problems.

Items with mean scores around 3.5 (e.g., Items 1, 7) indicate a moderate level of agreement. These aspects might be viewed positively overall but may have some room for improvement or variability in participant opinions.

Items with mean scores below 3.5 (e.g., Item 6) suggest a lower level of agreement or neutrality towards those aspects of Financial Planning.

In this case, there might be a need to focus on improving or clarifying these aspects to increase participant agreement or satisfaction.

The general mean of 3.79 suggests an overall positive perception of Financial Planning among the study sample, as it is closer to the higher end of the scale.

However, the standard deviation of 0.50 indicates relatively low variability among responses, suggesting a general consensus among participants regarding their views on Financial Planning.

Table 4, which presents the mean, standard deviation, and evaluation of the study sample members' responses to the Internal Control variable:

Table 4. mean, standard deviations and evaluation of the responses of the study sample members to the Internal Control variable:

N	item	Mean	SD	Evaluation
1	Internal control employees are employed according to their qualifications, experience, and academic specializations.	3.98	0.61	high
2	The organizational structure of the Internal Control Department is proportional to the volume of work in the bank.	3.89	0.74	high
3	There are clear written policies for dealing with customer complaints	4.03	0.63	high
4	The bank adopts periodic programs to develop and train employees in the internal control department.	3.66	0.89	medium
5	The application of internal control includes all sections and departments of the bank alike.	3.62	0.78	medium
6	Senior management works to develop a strategic and annual (operational) plan for the bank.	4.00	0.71	high
7	The bank adopts approved standards to judge the effectiveness of the internal control system.	4.06	0.55	high
8	Internal control contributes to improving financial performance.	3.82	0.73	high
9	Internal control provides accurate financial data for all parties related to the bank's work.	3.98	0.61	high
10	Internal control contributes to increasing the operational efficiency of the bank's employees.	3.68	0.83	high
11	Internal control works to achieve transparency in financial performance	4.03	0.63	high
12	Internal control helps implement administrative policies.	3.66	0.89	medium
13	Internal control works to preserve the bank's financial resources	4.16	0.63	high
14	Internal control contributes to identifying and evaluating the risks facing the bank.	3.66	0.87	medium
15	Internal control systems help detect deviations in a timely manner	3.58	0.82	medium
	General mean	3.85	0.48	high

Items with mean scores around 4 or higher (e.g., Items 1, 2, 3, 6, 7, 8, 9, 11, and 13) indicate a high level of agreement among participants regarding those aspects of Internal Control.

For example, participants strongly agree that internal control employees are employed according to qualifications, there are clear policies for customer complaints, and internal control contributes to improving financial performance.

Items with mean scores around 3.5 (e.g., Items 10, 11, 14, and 15) suggest a moderate level of agreement. While these aspects are generally positively viewed, there may be some variability or room for improvement in participant opinions.

Items with mean scores below 3.5 (e.g., Items 4, 5, 12) indicate a lower level of agreement or neutrality towards those aspects of Internal Control. These areas may require attention or improvement to enhance participant agreement or satisfaction.

The general mean of 3.85 suggests an overall positive perception of Internal Control among the study sample, as it is closer to the higher end of the scale. The low standard deviation of 0.48 indicates a relatively low variability among responses, suggesting a general consensus among participants regarding their views on Internal Control. Table 5, which includes the mean, standard deviation, and evaluation of the study sample members' responses to the Administrative Control variable:

Table 5. mean, standard deviations and evaluation of the responses of the study sample members to the Administrative Control variable:

N	item	Mean	SD	Evaluation
1	Administrative control is carried out on an ongoing and periodic basis	3.56	0.86	medium
2	There is sudden censorship that is not linked to a specific time.	3.49	0.93	medium
3	There is a department specialized in auditing and verifying the performance of administrative control procedures	3.49	0.88	medium
4	Employees are employed in administrative control based on appropriate qualifications and specializations.	3.95	0.60	high
5	The bank adopts external oversight to review the performance of individuals responsible for administrative and financial tasks.	3.91	0.70	high
6	Employees in administrative control practice advanced methods of control, such as (electronic control of financial reports)	3.95	0.75	high
7	The bank follows up on any deviations and problems that are discovered.	3.75	0.82	high
8	The Administrative Control Department is considered an entity independent of the bank's senior management.	3.40	0.97	medium
	General mean	3.69	0.50	high

Items with mean scores around 4 or higher (e.g., Items 4, 5, 6, and 7) suggest a high level of agreement among participants regarding those aspects of Administrative Control.

For instance, participants strongly agree that employees in administrative control are appropriately qualified, and the bank follows up on deviations and problems discovered. Items with mean scores around 3.5 (e.g., Items 1, 8) indicate a moderate level of agreement.

While these aspects are generally positively viewed, there may be some variability or room for improvement in participant opinions.

Items with mean scores below 3.5 (e.g., Items 2 and 3) suggest a lower level of agreement or neutrality towards those aspects of Administrative Control.

These areas may require attention or improvement to enhance participant agreement or satisfaction. The general mean of 3.69 suggests an overall positive perception of Administrative Control among the study sample, as it is closer to the higher end of the scale. The low standard deviation of 0.50 indicates a relatively low variability among responses, suggesting a general consensus among participants regarding their views on Administrative Control.

Table 6, which includes the mean, standard deviation, and evaluation of the study sample members' responses to the Solvency variable

Table 6. mean, standard deviations and evaluation of the responses of the study sample members to the Solvency variable:

N	item	Mean	SD	Evaluation
1	Financial solvency indicators are taken into account in decision-making processes	3.91	0.70	high
2	The bank adopts standard indicators to determine financial solvency in the short and long term.	3.95	0.75	high
3	The bank is committed to maintaining standard financial solvency ratios.	3.75	0.82	high
4	The bank's financial solvency is measured periodically	3.40	0.97	medium
5	Actual measures are taken if the solvency index deviates from the required level, whether it decreases or increases.	3.62	0.78	medium
6	The bank is committed to achieving the ideal solvency margin in accordance with the instructions of the Central Bank.	4.00	0.71	high
7	The bank cares about the quality of assets.	4.06	0.55	high
8	The bank maintains optimal liquidity to meet the on-demand cash needs of depositors	3.82	0.73	high
9	The bank adheres to the capital adequacy requirements issued by the Central Bank	3.98	0.61	high
10	The bank has the ability to meet short-term obligations	3.89	0.74	high
11	Clients do not face any difficulties in withdrawing their funds	4.03	0.63	high
12	The bank seeks to reduce any risks or difficulties in financing by providing appropriate guarantees to provide loans	3.66	0.89	medium
13	There are problems related to measuring the solvency of banks, mainly due to the special nature of these banks' sources of funds and their uses.	4.16	0.63	high
	General mean	3.86	0.47	high

Items with mean scores around 4 or higher (e.g., Items 1, 2, 3, 6, 7, 8, 9, 10, 11, and 13) suggest a high level of agreement among participants regarding those aspects of Solvency.

Participants strongly agree that financial solvency indicators are considered in decision-making, the bank adheres to capital adequacy requirements, and clients do not face difficulties in withdrawing funds.

Items with mean scores around 3.5 to 4 (e.g., Item 12) indicate a moderate level of agreement. While these aspects are generally positively viewed, there may be some variability or room for improvement in participant opinions.

Items with mean scores below 3.5 (e.g., Item 4 and 5) suggest a lower level of agreement or neutrality towards those aspects of Solvency. These areas may require attention or improvement to enhance participant agreement or satisfaction.

The general mean of 3.86 suggests an overall positive perception of Solvency among the study sample, as it is closer to the higher end of the scale. The low standard deviation of 0.47 indicates a relatively low variability among responses, suggesting a general consensus among participants regarding their views on Solvency.

FINDINGS AND ANALYSIS

First: The hypotheses of this study were analyzed using the Statistical Package for the Social Sciences (SPSS) software package.

Validity tests, such as the multiple linear correlation test for multicollinearity, and the Cronbach's alpha test, were conducted to evaluate the accuracy and stability of the model, the research tool, the collected data, and the hypotheses.

The variance inflation factor (VIF) and tolerance were calculated, Table 4. VIF values below 10 are generally considered acceptable, and values above 10 are often a cause for concern. In this case, all VIF values are less than 10,

indicating low multicollinearity Tolerance is a measure of how much of the variance of the independent variable is not explained by the other independent variables in the model.

Higher tolerance values (closer to 1) indicate lower multicollinearity concerns, suggesting that the variable has low correlation with the other independent variables. Tolerance values close to 1 are generally desirable, and values above 0.1 are typically acceptable. In this case, all tolerance values are above 0.1, indicating that there is no severe multicollinearity issue.

Overall, these results suggest that there is relatively low multicollinearity among the independent variables, indicating that they can be included in a regression model without a major concern about collinearity issues.

Table 7. Results of the (Multicollinearity) test.

Variable	Tolerance	VIF
Financial Planning	0.187	5.341
Internal Control	0.242	4.126
Administrative Control	0.377	2.654

Table 8 presents the results of a multiple regression analysis assessing the effect of efficiency financial management components (Financial Planning, Internal Control, and Administrative Control) on Solvency.

H1 was evaluated using the "Multiple Linear Regression" test and table (4) present that there is a statistically impact of (efficiency financial management) on (Solvency) and that's revealed through the (F. Sig) value in which it's equivalent to (0.00) is very close to zero (0.05) and by the value of (F) that equals (1064.69), which is greater than the "tabular value" (2.60). The value of the "correlation coefficient" (R) was (98.5%) points out that there is a strong relationship between efficiency financial management with its dimensions and Solvency, and the value of (R2) that's equal to (0.97), which indicates that big data analytics capabilities with its dimensions have explained a percentage of (97%) of the variation in the efficiency of financial management in the banking sector in Iraq.

Table 8. Results of multiple regression analysis of the effect of efficiency financial management efficiency on Solvency:

R	Adjusted R ²	F	SIG
0.985	0.97	1064.69	0.000
financial management	B	T	SIG
(Constant)	0.066	0.940	0.350
Financial Planning	0.507	13.208	0.000
Internal Control	0.481	13.609	0.000
Administrative Control	0.006	0.220	0.827

The **Ho1** was tested using the "Multiple Regression" test. The results of the statistical test are shown in Table (5). The results of the table showed that there is a significant correlation between financial planning and financial solvency, and it is shown by (Sig) with a value of (0.00), as well as the value of (T) (t-statistic), which is equal to (13.208), that is, greater than the table value. The coefficient for Financial Planning is statistically significant (p-value < 0.05), suggesting that it has a significant effect on Solvency. As Financial Planning increases by one unit, Solvency is expected to increase by 0.507 units, holding other variables constant.

The **Ho2** was tested using the "Multiple Regression" test. The results of the statistical test are shown in Table (5). The results of the table showed that there is a significant correlation between Internal Control and financial solvency, and it is shown by (Sig) with a value of (0.00), as well as the value of (T) (t-statistic), which is equal to (13.609), that is, greater than the table value. The coefficient for Internal Control is statistically significant (p-value < 0.05), indicating

a significant positive effect on Solvency. As Internal Control increases by one unit, Solvency is expected to increase by 0.481 units, holding other variables constant.

The **Ho3** was tested using the “Multiple Regression” test. The results of the statistical test are shown in Table (5). The results of the table showed that there is no a significant correlation between Administrative Control and financial solvency, and it is shown by (Sig) with a value of (0.827), as well as the value of (T) (t-statistic), which is equal to (0.220), that is, greater than the table value

The coefficient for Administrative Control is not statistically significant ($p\text{-value} > 0.05$), suggesting that, in this model, Administrative Control does not have a significant effect on Solvency.

The overall model, including Financial Planning and Internal Control, is highly significant in predicting Solvency. Both Financial Planning and Internal Control have positive coefficients, indicating that they positively contribute to Solvency. Administrative Control, however, does not appear to have a significant effect on Solvency in this analysis.

In summary, Financial Planning and Internal Control seem to be important contributors to Solvency, while Administrative Control, based on this analysis, does not appear to significantly impact Solvency.

The multiple regression equation for predicting Solvency based on the financial management components (Financial Planning, Internal Control, and Administrative Control) is:

$$\text{Solvency} = 0.066 + (0.507 \times \text{Financial Planning}) + (0.481 \times \text{Internal Control}) + (0.006 \times \text{Administrative Control}).$$

Second: Financial statement analysis was used as a second tool for the study for a period of 5 years extending from 2015 - 2020, with the aim of identifying the actual degree of financial solvency of banks and the extent of their ability to enjoy financial solvency, relying on the equation of the cash and legal liquidity ratio and the capital adequacy ratio to determine the ability of banks to fulfill their obligations.

Financial solvency indicators

1. **Capital adequacy:** It is one of the most important indicators by which the financial solvency of active financial institutions is measured. It is expressed as the minimum amount of capital that the bank must maintain to confront the risks to which it is likely to be exposed (Ayyash & Al-Ayeb, 2018).

In this study, capital adequacy will be measured through the following ratios:

Owned capital: Adequacy of capital to deposits..... (1).

Owned capital to assets.....(2).

- **Ratio of owned capital to total deposits:** This ratio indicates the bank’s ability to meet depositors’ requests to withdraw their deposits through its owned capital, and this ratio must not be less than (10%). If the total deposits increase compared to the owned capital, this will result in This is due to the decline in the bank’s ability to protect the funds of its depositors (Imran, 2019).

By conducting a financial analysis of the data contained in the annual reports of the banks in the study sample, Table (14) shows the ratio of owned capital to deposits.

Table 9. Index of the ratio of owned capital to deposits

year	Trans-Iraq Bank	Al-Mansour Bank	Ashur Bank	Mosul Bank	Gulf Bank	Sumer Bank	Credit Bank	Al-Ahli Bank	United Bank	Middle East Bank	Investment Bank	Baghdad Bank
2015	2.8943	2.3924	2.2371	3.0292	0.8487	3.1562	1.9128	1.5147	1.4055	0.8351	1.0813	0.2992
2016	2.5000	2.3682	2.5043	2.0837	0.7438	3.9470	1.7113	1.9449	2.3200	1.1410	1.0204	0.3416
2017	0.8239	2.2968	2.9951	2.2230	1.2072	2.9794	2.1881	1.5508	2.8626	0.8046	1.0043	0.3875
2018	0.7240	2.2399	1.5133	2.0382	1.3500	3.3238	1.9308	1.3643	2.3610	0.6226	1.0992	0.3392
2019	4.3582	0.2415	1.8817	2.2631	1.5215	4.2982	1.4260	1.0242	4.3695	0.9847	0.9782	0.3407
2020	5.1736	0.2967	2.3337	2.6655	1.6992	4.8160	1.3503	0.7334	1.9945	0.9932	0.8943	0.2594

Source: Prepared by the researcher based on the published annual financial reports of the banks in the research sample

From table (9) above, The banks selected as a research sample maintain high capital adequacy, far exceeding the standard set at (10%) as the minimum ratio of owned capital to total deposits. This indicates the strength and strength of the capital adequacy index as measured by the ratio of owned capital to total deposits. For the banks in the research sample, which expresses the high ability of banks to meet sudden withdrawals by depositors from the owned capital and control the risks resulting from increasing deposits with banks without reaching a state of financial distress.

The capital adequacy index, measured by the ratio of the capital owned to the total assets of the banks in the research sample, ranged between (5.1736) and (0.2415), which indicates a clear interest of the banks in the research sample, for the period (2015-2020), in maintaining good ratios of the adequacy index. Capital to avoid any risks that may be exposed to in the event of deposits being returned

- **The ratio of the owned capital to the total assets:** This indicator measures the extent to which the bank is able to use the capital it owns to finance its total assets (Rasham & Daghim, 2018). Increasing this ratio means achieving better protection for depositors, but at the same time it leads to a decrease in the rate of return on owned capital, which harms shareholders (Al-Amin, 2016). By conducting a financial analysis of the data contained in the annual reports of the banks in the study sample, Table (14) shows the ratio of owned capital to the total assets.

Table 10. Index of the ratio of owned capital to total assets

year	Trans-Iraq Bank	Al-Mansour Bank	Ashur Bank	Mosul Bank	Gulf Bank	Sumer Bank	Credit Bank	Al-Ahli Bank	United Bank	Middle East Bank	Investment Bank	Baghdad Bank
2015	0.7234	0.2684	0.5980	0.7185	0.3983	0.7133	0.4880	0.4860	0.5534	0.4117	0.5097	0.1732
2016	0.6650	0.2604	0.6742	0.6478	0.3962	0.7594	0.5976	0.4973	0.6115	0.4292	0.5014	0.2356
2017	0.7893	0.2204	0.7072	0.6066	0.5319	0.6856	0.6618	0.4731	0.5726	0.3620	0.4934	0.2540
2018	0.8353	0.1898	0.5742	0.6486	0.5438	0.6554	0.6299	0.4904	0.5891	0.3340	0.4663	0.2395
2019	0.7701	0.2037	0.6288	0.6545	0.5585	0.7691	0.5686	0.4056	0.5021	0.4060	0.4919	0.2415
2020	0.7844	0.2226	0.5772	0.6783	0.6014	0.7892	0.5573	0.3440	0.4342	0.4088	0.4641	0.1961

Source: Prepared by the researcher based on the published annual financial reports of the banks in the research sample

It is clear from Table (10) that the banks selected as the research sample maintain high capital adequacy, higher than the ratio determined by the Central Bank of Iraq, amounting to (12.5%) and the ratio determined by the Basel III Committee, amounting to (8%). This indicates the strength of the capital adequacy index, which is measured by the ratio of owned capital to the total assets of the banks in the research sample, which expresses the high ability to confront and absorb shocks and disturbances to which these banks may be exposed, and the high ability to use owned capital to confront losses.

2- Liquidity: It is defined by the extent of the ability that the bank has to fulfill its obligations in the short term and the speed of responding to depositors' withdrawals in a timely manner (Matey, 2021), as it is considered a measure of testing the ability of a bank that possesses cash liquidity or that maintains part of its assets in the form of liquid or semi-liquid cash to be able to liquefied in the time and speed possible with the least losses and enjoys high financial

solvency (Khan & Raj, 2020). Two indicators were chosen for financial analysis, and we will measure (liquidity) for the banks in the study sample through the following ratios:

Cash balance ratio: =
$$\frac{\text{the sum of cash at the central bank, cash in hand, and other liquid balances}}{\text{Deposits and the like.....(3)}}$$

This ratio measures the amount of cash represented by the liquidity that the commercial bank possesses. The higher this ratio indicates that the bank has sufficient cash liquidity and that it has a high ability to fulfill all external and internal obligations (Abdul Rahman & Al-Farsi, 2020). Through financial analysis of the data contained in the annual reports of the banks in the study sample, Table (16) shows the application of this ratio to the banks and for the years observed. As follows:

Table 11. Cash balance ratio index

year	Trans-Iraq Bank	Al-Mansour Bank	Ashur Bank	Mosul Bank	Gulf Bank	Sumer Bank	Credit Bank	Al-Ahli Bank	United Bank	Middle East Bank	Investment Bank	Baghdad Bank
2015	1.7286	0.3021	1.8709	1.3139	0.5017	1.9430	0.9316	1.1311	0.4555	0.8827	1.2849	0.8012
2016	1.7595	1.1132	2.5595	1.1489	0.6350	2.5283	0.8444	1.2598	0.2379	0.9102	1.4804	0.8917
2017	2.7184	0.8211	3.0161	1.1990	0.7997	2.1346	1.0155	1.2552	0.2619	0.8901	1.4369	0.9307
2018	3.6224	0.9902	2.1473	1.3003	0.9401	2.1207	1.8910	1.4126	0.0390	0.8907	1.2185	0.9314
2019	2.2988	1.0278	2.3938	1.1670	1.0652	2.9353	2.0086	0.9443	0.0261	0.8360	1.1276	0.8038
2020	2.3881	1.0945	2.0884	1.3692	1.1517	3.5575	2.1987	0.7521	0.0633	0.8285	1.1682	0.9064

From Table (11) above, it is clear that the highest cash liquidity ratio for the banks in the research sample was (3.6224) for the year (2018) for a bank across Iraq. This high ratio indicates that the bank has sufficient cash and a high ability to fulfill all its internal and external obligations. This ratio whenever the cash the bank possesses is greater than its liabilities, thus it has a higher ability to repay, meaning that the financial solvency of the bank is high.

As for the lowest cash liquidity ratio, it was (0.0261) for the year 2019 for United Bank, which means that United Bank does not have a sufficient cash balance to meet its liabilities, which means that it goes through a stage of financial deficit sometimes, and the bank will face difficulty in meeting its internal and external obligations.

a- The legal liquidity ratio:

The legal liquidity ratio =
$$\frac{\text{the sum of primary reserves and secondary reserves}}{\text{Deposits and the like.....(4)}}$$

Deposits and the like.....(4)

This measure enables us to know the capacity of the various balances (cash and cash equivalents) that the commercial bank chosen for the study sample possesses, to know the extent of its ability to pay the obligations assigned to it to those entitled to it in a timely manner (Al-Mutairi & Al-Asadi, 2016). The higher the ratio of this indicator indicates that the bank possesses liquidity. High legality and the extent of its commitment to the standards of the Central Bank (Imam & Al-Khazali, 2017), and through the financial analysis of the data contained in the annual reports of the banks in the study sample, Table (12) shows the application of this ratio to the banks and for the years observed, as follows:

Table 12. Statutory liquidity ratio index

year	Trans-Iraq Bank	Al-Mansour Bank	Ashur Bank	Mosul Bank	Gulf Bank	Sumer Bank	Credit Bank	Al-Ahli Bank	United Bank	Middle East Bank	Investment Bank	Baghdad Bank
2015	1.8320	0.3513	.9123	1.4071	0.5440	2.0744	1.0952	1.1688	0.5392	0.9559	1.4672	0.8118
2016	1.8732	1.1590	2.6295	1.2399	0.6847	2.7312	0.7009	1.3904	0.2928	0.9712	1.6243	0.9080
2017	2.9363	0.8604	3.1649	1.3312	0.8999	2.2776	1.4216	1.3675	0.3177	0.9341	1.7268	0.9506
2018	3.8752	1.0278	2.2409	1.3881	1.0268	2.2515	2.5764	1.4477	0.1364	0.9260	1.3127	0.9555
2019	2.3862	1.0529	2.4502	1.2796	1.1279	3.1759	2.3125	0.9613	0.1186	0.8839	1.2176	0.8355
2020	2.4960	1.1311	2.2060	1.5029	1.2263	3.7415	2.5945	0.8536	0.1369	0.8674	1.2092	0.9337

From table (12), the highest percentage of legal liquidity for the banks selected for the study sample was (3.8752) for the year 2018 for a bank. The bank is also committed to the laws and regulations issued by the Central Bank of Iraq regarding maintaining liquidity to deal with depositors of all types.

As for the lowest legal liquidity ratio, it was (0.1186), for the year 2019 for United Bank, which indicates that United Bank, especially in the year 2019, does not have sufficient legal liquidity that is appropriate for the recommendations and laws issued by the Central Bank of Iraq, and thus that the bank cannot fulfill all the obligations assigned to it. It is directed to creditors and depositors at the appropriate time and speed.

DISCUSSION AND CONCLUSION

This study was conducted in the banking sector in Iraq to examine the relationship between financial management efficiency and financial solvency. Financial management efficiency was the independent variable in the study, while financial solvency was the dependent variable. Initially, the validity and reliability of the study tool was confirmed through Cronbach's Alpha and coefficient of self-validity tests. It was also confirmed that there was no multicollinearity among the dependent variables through the Tolerance and Variance Inflation Factor (VIF) test. Multiple regression analysis was used to test the study hypotheses.

The survey findings indicated that efficiency of financial management were highly significant in the financial solvency of Iraqi banks, with a mean range of (3.85 – 3.69). Internal control achieved the highest mean value of (3.85) among the many dimensions of efficiency of financial management, followed by financial planning with an mean value of (3.79), while administrative control had the lowest mean value of (3.69).

Analysis of the sample results revealed that there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of the efficiency of financial management represented by (financial planning) on the financial solvency of banks in Iraq. As the bank's possession of integrated financial planning enables it to improve the management of assets and liabilities in a way that ensures a balance between liquidity and profitability rates, accurately estimate capital needs and avoid the risks of capital deficiency or increase, take advantage of market opportunities proactively and increase the efficiency of resource allocation, strengthening the margin It has financial security, which makes it more capable of absorbing shocks. Thus, we conclude that financial planning positively affects the level of financial solvency in banks by enhancing their financial flexibility and their ability to confront market turmoil.

Also the analysis of the sample results revealed that there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of the efficiency of financial management represented by (internal control system) on the financial solvency of banks in Iraq.

Internal control helps identify the financial and non-financial risks that the bank may face, and develop strategies to manage these risks effectively, which enhances its ability to confront shocks. Internal control ensures that all operations are carried out in accordance with financial laws and regulations, whether internal or external, which Maintains the integrity and transparency of transactions. Internal control plays an important role in ensuring that the financial reports issued by the bank accurately and transparently express its financial position, confirming its solvency. By using effective control methods, the bank ensures that capital adequacy requirements are met on an ongoing basis, without any deficiencies that would destabilize its financial stability. While analysis of the sample results revealed

that there is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of the administrative control dimension on the financial solvency of banks in Iraq.

The solvency index is one of the most important indicators used in banks, because it has an effective role in identifying the bank's ability to fulfill its obligations, and thus reducing the uncertainty of the banks' financial future. Using secondary annual time series data from 2015 to 2020 for the study sample banks, using liquidity ratios and capital adequacy. Analysis of the financial statements indicated high cash and legal liquidity ratios for banks, which increases their ability to pay obligations and thus achieve good financial solvency. The results of the analysis of the banks' financial statements confirm the consistency and compatibility with the results of the questionnaire analysis, which indicated a high financial solvency of the banks in the study sample.

Managerial Implications

1. Continuous development and improvement of the financial planning and internal control departments because of their significant impact on the financial solvency and continuity of banks.
2. Supporting the Financial Planning and Internal Control Department the necessity of investing in it
3. Maintaining a balance between cash liquidity and debt ratios so that banks are able to meet their short- and long-term obligations alike.
4. Iraqi commercial banks must adopt effective financial management mechanisms to improve their performance.
5. Specifically, banks must adhere to capital requirements, and maintain sufficient and optimal liquidity.
6. Taking advantage of current opportunities provided by technology to ensure efficiency.

Other recommendations:

- Conducting more future studies on utilizing the efficiency of financial management and its importance and role in financial solvency in other sectors.

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