The Role of Financial Analysis in Predicting Financial Distress in Iraqi Commercial Banks

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Abstract: This research examines the role of financial analysis in predicting financial distress in Iraqi commercial banks. It aims to explain how financial analysis can serve as an effective quantitative and qualitative tool for forecasting financial distress to explain the role of financial analysis by presenting financial analysis as an effective quantitative and qualitative tool for forecasting potential financial distress in commercial banks, through financial indicators that help commercial banks detect potential weaknesses at an early stage and develop appropriate corrective measures. In light of increasing financial risks and economic instability, particularly within the banking sector, due to the continuous threats facing banks and the challenges related to their ability to meet financial obligations. The importance of the research stems from the fact that financial distress is one of the most serious problems facing the banking sector because of its negative impact on the stability of the banking and economic system of the country as a whole. The research relied on the descriptive-analytical approach through the analysis of the financial statements of a group of commercial banks through the use of a set of financial analysis indicators and some models to predict financial distress. The research concludes that financial analysis represents an important strategic tool for banks , not only for evaluating financial performance, but also for the early prediction of financial distress and enhancing banking stability. It also emphasizes the importance of integrating traditional methods of financial analysis with modern technologies to contribute to improving forecasting accuracy, reducing financial risks, and enhancing banks' ability to sustain and achieve financial soundness.

Keywords: Financial Analysis, Financial Distress, Iraqi Commercial Banks, Early Warning Systems, Banking Risk, Predictive Models.

Introduction

This research aims to shed light on the important role of financial analysis in commercial banks in predicting financial distress, by explaining the concept of financial analysis and its importance, clarifying the concept of financial distress, its causes and stages, as well as highlighting the role of financial indicators and models in the early detection of financial distress. The research also seeks to emphasize that employing the scientific and systematic use of financial analysis tools contributes to enhancing the financial soundness of commercial banks and supporting financial stability at the level of the banking system as a whole .

Research Problem

The research problem is that there may be deficiencies in the use of financial analysis indicators and ratios, or in the mechanism of employing their results by bank management, as well as the over-reliance on historical financial data without integrating them with modern analysis methods capable of capturing early signals of distress in banks. Also, the different economic and legislative environments may lead to differences in the ability of financial analysis to predict financial distress among commercial banks.

Despite the importance of the research, it faces a number of problems, the most important of which are:

Reliance on historical financial statements, which may not accurately reflect future changes or sudden economic shocks.

The limited sample in the event that the study is limited to a certain number of banks or a specific period of time, which may affect the validity of the study results.

Differences in the analytical tools and accounting policies adopted by banks may lead to variations in financial analysis results.

The inability of financial analysis tools alone to explain all the causes of financial distress, as there are non-financial factors such as administrative, legislative, and political.

The inadequacy of some traditional models in accurately predicting financial distress in commercial banks compared to other sectors.

The difficulty of obtaining accurate and up-to-date data for some commercial banks , especially in emerging markets.

Research Objectives

To clarify the importance of modern analytical approaches and their role in helping commercial banks in the early detection of financial distress.

To clarify the role of financial analysis indicators (liquidity, profitability, activity, solvency) in early prediction of financial distress

Contributing to the strengthening of early warning systems within commercial banks to reduce financial and banking risks.

Providing practical recommendations to bank departments and regulatory authorities to improve the use of financial analysis in risk management .

The Concept of Financial Distress

We note that some banks face significant difficulties in their banking operations, as this leads to the loss of their financial solvency, i.e., they are often unable to meet their liabilities even if the financial assets exceed the liabilities, and are therefore considered financially distressed and it is not necessary to reach the stage of bankruptcy, as it is possible to address them and find appropriate solutions for them, and since the maximum degree of financial distress is to reach the degree of bankruptcy at which the bank's liabilities reach greater than its assets, as shareholders' equity In their financial position they become negative due to ongoing losses as bank failures can cause significant losses for many depositors, and the economic distress spreads rapidly leading to Bank failures can cause significant losses for depositors and may lead to wider economic distress and increased fiscal burdens. Opinions on effective management of bank failures are based on the idea that dealing quickly with troubled banks will help restore public confidence, maintain financial stability, and reduce the severity of losses.

financial distress: The situation in which the entity faces increasing financial difficulties that make it unable to meet its financial obligations to others on their due dates, and this leads to a significant decline in its liquidity and profits, which may threaten its continuity and lead it to bankruptcy or liquidation if it does not take appropriate corrective measures to improve the entity's

financial condition.

financial distress: It is the situation in which an entity faces difficulties or inability to meet its financial obligations to creditors at maturity, as a result of the deterioration of the entity's financial conditions , low liquidity level , and difficulty in achieving sufficient cash flows to cover all debts and operating expenses. This includes declining profitability, weak operating cash flows, and The high cost of financing and the decline in the ability of the entity to attract external funding, which may threaten its continued operations and may lead in the worst case to bankruptcy or liquidation if it is not handled properly.

The Emergence of the Concept of Financial Distress

The emergence of the concept of financial distress is related to the development of contemporary accounting and financial thought, especially with the increase in the complexity of economic activities and the expansion of dependence on credit and finance. Scientific interest in financial distress began as a phenomenon that precedes bankruptcy, and not just a legal situation, as a result of the observation of the recurrence of cases of inability of enterprises to meet their financial obligations despite continuing to operate.

Al-Serafi points out that the financial distress emerged as a result of the imbalance in the financial structure of the entity, especially the imbalance between the sources of financing and its uses, and the high dependence on debt without providing sufficient cash flows to service it, which leads to a decline in the ability to repay and weak liquidity of the enterprise, which is an early stage of the financial deterioration of the enterprises that may precede failure or bankruptcy if not addressed in time

It also explains that the concept of financial distress has evolved with the development of financial analysis methods, as it is no longer seen as a sudden event, but rather a gradual cumulative process that begins with the emergence of negative financial indicators for the entity, such as the decline in the profitability of the entity, the deterioration of the liquidity ratios of the entity, and the increase in the entity's indebtedness, and these indicators continue to increase until the entity reaches the stage of inability to meet its financial obligations. This has contributed to understanding the reason for the emergence of models and criteria for measuring and predicting financial distress with the aim of remedying it before reaching bankruptcy.

Accordingly, the researcher noted that the emergence of the concept of financial distress came in response to the need for early warning of financial problems, and to enable financial management, creditors and investors to diagnose the unhealthy conditions of enterprises in the early stages of their operations, and to take the necessary corrective measures to maintain business continuity.

Causes of financial distress

Financial distress is one of the complex economic and financial phenomena that does not result from a single cause, but rather from the accumulation of a set of internal and external factors that ultimately lead to the inability of the entity to continue its activity and achieve financial balance. We note that financial failure is often preceded by the financial distress stage, which represents an early warning of the deterioration of the financial situation of the enterprise if corrective and appropriate measures are not taken , this can lead to the bankruptcy of an enterprise.

Internal causes of banking financial default:

Internal causes of bank distress refer to those factors that arise within the bank itself as a result of administrative, financial, supervisory or operational negligence, and these causes are considered one of the most serious causes of default, as they reflect the weakness of banking policies and poor risk management. Banking studies have confirmed that most cases of bank defaults are due to internal factors rather than external factors.

Good banking management is the cornerstone of bank stability, as bank management is responsible for setting credit and investment policies and risk management. Poor management and poor governance lead to unsound decision-making and non-compliance with supervisory controls, which increases the likelihood of bank default. Efficient banking management and good governance

systems are the main pillars of banks' stability and sound financial performance. When banking management suffers from inefficiency or when improper governance practices prevail, this leads to internal imbalances that increase the likelihood of bank distress. The Basel Committee confirmed that weak governance was one of the fundamental causes for many banks' failure during financial crises, most notably the global financial crisis of 2008.

Weak role of the board of directors and senior management:

The weak role of the Board of Directors leads to its lack of independence within the bank and the concentration of power in executive management, which increases the chances of making high-risk decisions without effective oversight.

Weak internal control and accountability:

Weak internal control systems result in failure to detect deviations and risks in a timely manner, allowing for the accumulation of losses and financial imbalances. Note that the lack of accountability leads to the spread of improper practices, such as ill-considered credit expansion or conflicts of interest. Studies have observed that banks that lack effective internal control systems are more vulnerable to financial distress.

Lack of transparency and financial disclosure:

Financial transparency and disclosure are requirements of sound banking governance, as it helps stakeholders assess the true performance of the bank. Note that the banks' poor disclosure leads to the concealment of the risks and losses to which the bank is exposed, which delays the taking of corrective measures, and increases the possibilities of financial distress in banks.

Poor risk management in the governance framework:

Banking risk management is an integral part of the governance system, note that the weak linkage between risk management and the board of directors is due to a lack of awareness of the real risks to which the bank is exposed, especially liquidity, credit and market risks. The need for the board of directors to directly supervise risk management policies to reduce bank default.

Types of financial distress in Banks

Financial distress in banks is one of the most serious phenomena that threaten the stability of the financial and economic system, due to the pivotal role played by banks in accumulating savings and directing them towards investment. Banking distress does not appear in a single form, but takes multiple forms that differ in terms of causes, effects and degree of risk, and the distress may be partial or complete, temporary or chronic. Statement of the most important types of financial distress in banks according to modern financial and banking literature.

Liquidity Distress:

This type of distress is one of the most common types of financial distress in banks, and occurs when a bank is unable to meet its short-term obligations when they mature, despite having sufficient long-term assets in terms of total value. This type of distress arises as a result of poor liquidity management or mismatch between the maturities of assets and liabilities. The danger of liquidity distress lies in the fact that it may lead to a loss of depositors' confidence and the occurrence of what is known as mass withdrawals of deposits, which requires the intervention of the Central Bank as a lender of last resort.

Reasons for banks' distress related to liquidity:

The bank's mismanagement of the maturity gap between assets and liabilities.

Increasing reliance on short-term deposits to finance long-term loans .

Sudden and large withdrawals of deposits.

decline in cash reserves or liquid assets.

Effects on banks

Loss of depositors' confidence in the bank.

The intervention of the Central Bank as a lender of last resort.

Possibility of contagion spreading to other banks.

Profitability Distress:

This type of distress occurs when a bank is unable to generate sufficient profits to cover operating costs and banking risks, even if it has sufficient liquidity and capital temporarily.

Causes of profitability-related financial distress.

Low return on assets (ROA)

Low return on equity (ROE)

Erosion of net interest margins.

Consequences of it:

Increase in non-performing loans.

Poor credit pricing.

Higher administrative and operational costs .

Intense banking competition .

Credit Distress:

This type is related to the quality of the loan portfolio and is seen when the percentage of non-performing loans is high. Credit distress is associated with a high percentage of non-performing loans within the bank loan portfolio and is considered one of the most serious types of distress due to its direct impact on profitability and capital.

Reasons that lead to credit default:

Unplanned expansion in lending.

Weak credit policies.

Credit concentration in high-risk sectors .

The general economic decline .

Results :

Increase in credit provisions.

Decrease in profits.

Erosion of capital.

Benefits of the development of technology in the early detection of financial distress in banks:

Technological developments, especially in the fields of information systems, big data, and artificial intelligence, have led to a qualitative leap in the ability of banks and regulators to detect indicators of financial distress at an early stage, before they turn into severe financial crises.

The most important of these benefits can be summarized as follows :

Early forecast for financial risks:

One of the most prominent benefits of technology is that it transforms financial analysis from a historical character to a proactive one, such as:

AI and machine learning models enable them to predict the probability of financial distress before it occurs .

It relies on the analysis of complex and non-linear patterns in financial statements that are difficult to detect with traditional methods

This allows the bank to take precautionary measures early, such as boosting liquidity or restructuring credit

Improving the accuracy of financial distress detection:

Technological development raises the level of accuracy in diagnosing financial distress by:

analyzing many financial and non-financial variables simultaneously.

Reducing the reliance on personal judgment and subjective judgment of analysts.

Reduce errors resulting from bias or inaccurate estimation .

And as a result, banking management's decisions become more objective and based on accurate data

Speed in detecting signs of financial distress:

Technological systems are characterized by their ability to :

Real-time processing of financial statements.

Issue immediate alerts when abnormal deviations occur in indicators of liquidity, profitability, or asset quality .

This reduces the time gap between the appearance of the problem and its discovery, a gap that has been one of the biggest drawbacks of traditional financial analysis.

Strengthening early warning systems in banks

Technology has contributed to the development of Early Warning Systems , which

Constantly monitor major financial indicators

Integrate the Bank's internal data with market and macroeconomic data .

Banks or branches are classified according to the degree of potential risk .

These systems help banks and regulators to intervene early before financial distress worsens.

Expanding the scope of data used in analysis

One of the benefits of technology is that it no longer relies only on traditional financial statements, but added :

Capital Market Data.

Macroeconomic indicators.

Financial news and economic sentiment analysis .

This expansion of data sources leads to a more comprehensive understanding of the bank's real financial position

Banking and Supervisory Decision-Making Support

Technology contributes to :

Supporting the decisions of senior management in banks .

Assisting central banks and supervisory authorities in assessing the soundness of the banking system .

Reducing the likelihood of a comprehensive banking crisis.

In other words, its benefit is not limited to one bank, but extends to the stability of the financial

system as a whole

Reduce potential financial losses

Early detection of financial distress thanks to technology leads to:

Reducing the size of losses resulting from non-performing loans.

Protection of depositors' funds.

Avoiding the costs of financial rescue or bankruptcy .

Consequently, banks achieve higher financial efficiency and greater sustainability .

The benefit of technology in the early detection of financial distress in banks:

Moving from delayed crisis management to proactive risk management.

Improving the accuracy and speed of financial analysis.

Supporting the financial stability of banks and the national economy .

Technology has become an indispensable tool in enhancing banks' financial soundness and reducing the risk of distress and bankruptcy.

The most important models for predicting financial distress in banks:

Financial distress Prediction means the use of artificial intelligence statistical models to analyze financial and banking data in order to predict the possibility of bank distress or failure before it actually occurs . These models help the supervisory authorities and the banking management to identify risks early and take preventive measures .

Altman Z-Score Model

One of the most popular traditional models in predicting financial failure is based on a combination of financial ratios such as profitability, liquidity, debt, and fixed assets .

Basic Equation :

$Z=1.2X1+1.4X2+3.3X3+0.6x4+1.0X5$

Where :

X1 = Working Capital ÷ Total Assets

X2 = Retained Earnings ÷ Total Assets

X3 = Earnings before interest and taxes ÷ total assets

X4 = Book Value of Shares ÷ Total Debt

X5 = Sales ÷ Total Assets

Model Application: Prediction of Financial Failure in Banks and Companies

Z-Score Features: Easy to apply and gives a clear numerical result for classification:

Safe Zone $Z > 2.99$

Grey Zone : $1.81< Z < 2.99$

High Risk of Default : $Z < 1.81$

Uses of the Altman Model in Banks:

Predicting the financial distress of borrowers .

Early Warning Systems.

Credit risk analysis.

Evaluating the performance of banks and investment companies .

Original model was developed for industrial companies, so it is often adapted for banks by adjusting certain variables, such as using liquidity ratios and capital adequacy instead of certain sales and profits .

Advantages and disadvantages of the Altman model:

Advantages:

Easy to apply to financial statements.

Gives early warning of financial distress.

Known and scientifically reliable .

Disadvantages :

It assumes linear relationships between variables.

It needs to be amended when applying to banks .

Its accuracy is lower when dealing with complex or large data

Discriminant Analysis

Description: Multivariate analysis of the classification of banks into two groups: default-prone /non-default-prone

Method: Uses a discriminant function based on the set of financial ratios

Features :

Multiple financial and non-financial variables can be added .

It provides a highly accurate probability score.

Usage: Applied studies on Arab and Gulf banks .

Disadvantages :

It assumes linearity.

Sensitive to outlier values.

Its accuracy is lower than modern AI models.

Logistic Regression

Description: A statistical model that links financial variables with potential distress risks .

Basic Equation :

P (Y= 1) =1 /1+e-(B0+B1X1+….+BnXn)

Where :

Y = 1 represents financial distress

X represents the financial variables

Features :

Provides the probability of financial distress between 0 and 1

Statistically flexible.

Easy to interpret.

It does not assume normal distribution.

Suitable for bank data analysis.

Disadvantages :

It assumes a linear relationship with the logarithm of probability.

Its accuracy is lower than advanced machine learning models.

Sensitive to multicollinearity.

Score Models (Example: Bankometer S-Score)

Description: Gives points to each bank based on specific indicators (liquidity, profitability, debt).

Usage: Classification of banks according to distress risk .

Features:

Easy to apply.

Easy to understand.

It is used in central banks.

Disadvantages :

It depends on personal judgment in determining weights.

Its accuracy is lower than advanced models

It does not accurately reflect nonlinear relationships.

Artificial Intelligence (AI/Machine Learning) Models

Description: Advanced algorithms for analyzing financial data.

Decision Trees

Random Forest

Support Vector Machines

Neural Networks

Features :

Higher accuracy than traditional models.

Capable of handling large and complex datasets.

Usage: Predicting defaults in modern banks and identifying at-risk banks before they occur.

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