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Credit and Financial Analysis of Investment Bank Loan Applications: An Empirical Assessment of Financial Evaluation Techniques and Decision-Making Practices at the Bank of Agriculture and Rural Development (BADR) – Tissemsilt Branch

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Abstract

The effectiveness of investment financing decisions in banking institutions largely depends on the quality and adequacy of credit and financial analysis applied to loan applications. Accurate financial evaluation enables banks to assess the true financial position of borrowing enterprises, estimate the profitability and feasibility of proposed investment projects, and mitigate credit risk. Inadequate or superficial analysis, by contrast, may result in inefficient allocation of financial resources and increased exposure to default risk. This study examines the credit financial analysis methods used in the evaluation of investment loan applications at the Bank of Agriculture and Rural Development (BADR), with specific reference to the Tissemsilt branch. The research focuses on the analytical tools and financial indicators employed by the bank to assess enterprise liquidity, financial structure, solvency, and investment viability prior to granting long-term financing. Using a descriptive and analytical case study approach, the paper explores the role of key financial indicators—particularly working capital, its various components, and working capital requirements—in diagnosing the financial health of enterprises applying for investment bank loans. The analysis highlights how these indicators are used to evaluate financial balance, operational continuity, and the capacity of enterprises to meet both short-term obligations and long-term debt commitments. The findings indicate that financial indicators related to working capital and liquidity play a central role in BADR's credit assessment process, providing valuable insights into enterprise financial stability and independence. However, the study also reveals the need for continuous improvement in integrating financial analysis with project evaluation techniques to enhance the accuracy of investment financing decisions. Strengthening analytical rigor and adopting a more comprehensive financial evaluation framework can contribute to more efficient credit allocation and improved banking performance.

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Introduction:

The bank's ability to predict the efficiency and profitability of investment projects undertaken by enterprises and financed through investment bank loans depends on the adequacy of the financial analysis and evaluation used by the bank for the enterprise and its investment project. Appropriate financial analysis and evaluation make it possible to diagnose the true financial position of the enterprise and to determine the profitability and feasibility of the investment project financed through the investment bank loan, thereby enabling the bank to make sound decisions regarding financing or non-financing. Accordingly, this research addresses the analysis and evaluation of investment bank loan applications at the level of BADR Bank.

Hence, the main research question is as follows:

To what extent is the credit financial analysis used at the level of the Bank of Agriculture and Rural Development appropriate for granting investment bank loans to enterprises?

Chapter One: Financial analysis and evaluation of investment bank loan applications at the bank level

When studying and evaluating investment bank loan applications, the bank relies on a set of specific techniques designed for this purpose, represented by a group of financial tools and criteria, some of which are devoted to analyzing the financial position of the enterprise and others to evaluating the investment project. Accordingly, this section addresses the various techniques for analyzing and evaluating investment bank loan applications used at BADR Bank.

Section One: Financial analysis of the financial position of enterprises applying for investment bank loans

The financial analysis of the financial position of enterprises applying for loans is carried out using the following financial tools:

1. Financial indicators:

This is done by relying on the following financial indicators:

1) Working capital:

Working capital represents a liquidity margin that allows the enterprise to continue its activity normally without financial difficulties or pressure on cash. Achieving positive working capital within the enterprise confirms the existence of a safety margin that helps it face difficulties and ensure the continuity of the balance of its financial structure. There are four types of working capital:

- **Net working capital:**

It is the portion of permanent financial resources allocated to financing current assets. It is also defined as the financial surplus resulting from financing permanent financial needs using permanent financial resources. It is calculated using two methods:

- *Top-of-the-balance-sheet method:* Net working capital = Permanent funds − Fixed assets
- *Bottom-of-the-balance-sheet method:* Net working capital = Current assets − Short-term liabilities

- **Equity working capital:**

It indicates the extent to which shareholders' equity covers fixed assets without resorting to the remaining portion of permanent funds represented by long-term loans, or the extent to which the enterprise relies on its own funds without using external financial resources. Equity working capital = Equity − Fixed assets

By substituting equity with (liabilities − total debts) and fixed assets with (assets − current assets), we obtain from the bottom of the balance sheet:

Equity working capital = Current assets − Total debts

Equity working capital is considered a tool for judging the degree of the enterprise's financial independence.

- **Foreign working capital:**

It shows the value of external financial resources in the enterprise, represented by total debts. Here, debts are not viewed negatively, but as necessary resources for activating operating activity. It has become necessary for enterprises to secure available financial resources when needed, with banks and lending financial institutions closely associated with enterprise activity and serving as a refuge to remedy cash shortages.

Foreign working capital = Total debts

- **Gross working capital:**

Gross working capital refers to the total elements of assets whose turnover period is one year or less, including operating values, unrealized values, and cash values.

Gross working capital = Total current assets = Assets − Fixed assets. Also: Gross working capital = Equity working capital + Foreign working capital

There are three different cases of net working capital:

Positive net working capital (FR > 0), zero net working capital (FR = 0), and negative net working capital (FR < 0).

The size of net working capital changes from one period to another, sometimes increasing and sometimes decreasing. Management must study these changes and identify their causes in order to draw future plans and policies. The causes of decrease and increase in net working capital can be summarized as follows:

- **Causes of a decrease in net working capital:**

Reduction in permanent funds due to capital reduction, repayment of long-term debts, or distribution of part of reserves; investment in new fixed assets not financed by new permanent funds; realized losses, as they lead to a decrease in equity and thus permanent funds.

- **Causes of an increase in net working capital:**

Increase in permanent funds due to capital increase; obtaining long-term debts; formation of reserves; disposal of some fixed assets; realized and undistributed profits.

2) Working capital requirement:

It is defined as the working capital that the enterprise actually needs to meet liquidity requirements at the maturity dates of short-term debts. It includes the normal management of the operating cycle, as the operating cycle generates recurring periodic needs that must be covered by periodic financing sources as well. Periodic needs consist of current assets that have not yet been converted into cash (excluding cash values), while cycle resources consist of short-term debts that are not yet due (excluding bank advances). Working capital requirements = (Current assets − Cash values) − (Short-term liabilities − Bank
advances).

3) Net treasury:

The enterprise's treasury can be defined as the total funds available to it during the operating cycle, including net cash values, i.e., the amounts actually available as liquid funds. Net treasury is calculated using either of the following relationships:

TRN = Working capital − Working capital requirements

or

TRN = Treasury assets − Treasury liabilities

2. Financial ratios:

Financial ratio analysis is one of the most commonly used tools in analyzing financial statements. Financial ratios are not an end in themselves, but rather a means to reach results that answer many questions related to financial position, cash position, performance, and the evaluation of investment and financing decisions. A ratio is mathematically defined as a fixed relationship between two numbers; in finance, it expresses a fractional relationship between two balance-sheet items, two income-statement items, one from each, or even other financial statements.

1) Liquidity ratios:

Used to evaluate the enterprise's credit position by measuring the ability of its current assets to meet short-term liabilities. The banker calculates several ratios, including:

- General liquidity ratio = (Current assets ÷ Short-term liabilities) × 100 Should not be less than 100%.
- Quick liquidity ratio = ((Current assets − Inventory) ÷ Short-term liabilities) × 100
- Cash liquidity (current) ratio = (Cash values ÷ Short-term liabilities) × 100

2) Management ratios:

Used to evaluate the success of enterprise management and its efficiency in managing inventory and relations with customers and suppliers, including:

- Inventory turnover = Cost of goods sold ÷ Average inventory
- Inventory turnover period (days) = 360 ÷ Inventory turnover
- Accounts receivable turnover = Sales ÷ (Customers + Notes receivable)
- Collection period = 360 ÷ Accounts receivable turnover
- Accounts payable turnover = Purchases ÷ (Suppliers + Notes payable)
- Payment period = 360 ÷ Accounts payable turnover

3) Financing ratios:

Measure the degree of the enterprise's reliance on external funds, including:

- External financing ratio = (Total debts ÷ Total assets) × 100 Should not exceed 50%.
- Permanent financing ratio = (Permanent funds ÷ Fixed assets) × 100 Should not be less than 100%.
- Equity (self-financing) ratio = (Equity ÷ Fixed assets) × 100 Should not be less than 75%.

4) Profitability ratios:

Measure the extent to which performance levels are achieved, including:

- Return on equity = (Net profit ÷ Equity) × 100
- Return on investment = (Gross profit ÷ Total assets) × 100
- Operating profitability ratio = (Gross profit ÷ Sales) × 100

5) Solvency ratios:

Indicate the enterprise's ability to repay its debts, including:

- Indebtedness ratio = Total assets ÷ Total debts × 100 Should not be less than 200%.

6) Activity ratios:

Indicate the efficiency of enterprise activity, including:

- Net result to sales ratio = Net result ÷ Sales × 100
- Value added to sales ratio = Value added ÷ Sales × 100

7) Value added distribution ratios:

Including:

- Personnel costs to value added ratio = Personnel costs ÷ Value added × 100
- Financial costs to value added ratio = Financial costs ÷ Value added × 100
- Taxes and duties to value added ratio = Taxes and duties ÷ Value added × 100

8) Financial independence ratios:

Including:

- Financial independence ratio = Equity ÷ Permanent funds × 100 Should exceed 50%.
- Medium- and long-term debt to self-financing capacity ratio = Medium- and long-term debts ÷ Self-financing capacity × 100

Subsection Two: Financial evaluation of the investment project of enterprises applying for investment bank loans

The financial evaluation of the investment project is carried out using the following financial criteria:

1) Payback period:

It is the period through which initial investment costs can be recovered. It can be calculated without considering the time value of money and with considering the time value of money. The shorter this period, the better for the enterprise and the investment project.

- *Without considering the time value of money:*
  - If annual net cash flows are equal:

$DR = I_0 / CF$

Where I_0 is initial investment cost, DR is payback period, and CF is annual net cash flow.

- If annual net cash flows are unequal, the payback period is determined directly by examining the distribution of net cash flows.

- *With considering the time value of money:*

$I_0 = \sum CFi=1...d\ (1 + t)^{-i}$

Where I_0 is initial investment cost, CF cash flows, t discount rate, and d payback period.

2) Net present value (NPV):

3)

$NPV = \sum CFi=1...n\ (1 + t)^{-i} - I_0$

4)

If cash flows are equal:

5)

$NPV = CF\ [(1 - (1 + t)^{-n}) / t] - I_0$

Where I_0 is initial investment cost, CF net cash flows, t discount rate, and n project life. If NPV is positive, the project is profitable; if negative, it is unprofitable; if zero, the project neither gains nor loses, which is unacceptable since the aim of investment is profit.

4) Profitability index:

It measures relative advantage, i.e., profitability achieved per dinar of invested capital.

- First formula: $PI = (\sum CFi=1...n\ (1 + t)^{-i}) / I_0$
- Second formula: $PI = 1 + (NPV / I_0)$

The project is accepted if $PI > 1$ and rejected if $PI \leq 1$.

5) **Internal rate of return (IRR):**

It is the rate at which invested capital equals the sum of the present values of cash flows: $\sum CFi=1...n\ (1 + IRR)^{-i} = I_0$

Calculated as:

$IRR = t_1 + [NPV_1 / (NPV_1 - NPV_2)] \times (t_2 - t_1)$

The project is accepted if IRR exceeds the cost of capital.

Chapter Two: The adequacy of the financial analysis and evaluation used at BADR Bank for enterprises

Effectiveness is a tool of management control, reflecting the degree of achievement of set objectives. The effectiveness of investment bank loan evaluation techniques stems from their ability to properly analyze and evaluate loans by studying financial and non-financial aspects related to the applicant enterprise and the investment project, as well as the adequacy of the analysis used by the bank. Accordingly, this section examines the adequacy of the financial analysis and evaluation used at BADR Bank.

Section One: Adequacy of financial analysis and evaluation of enterprises' investment loan applications

The effectiveness of evaluating investment bank loans depends on the banker's ability to conduct objective, scientific, and methodological evaluation using appropriate financial tools and criteria, and on the adequacy of the analysis in diagnosing the true financial position of the enterprise and confirming project profitability. Effectiveness is reflected in the success of the financed project and the repayment of the loan with interest on time.

If the project succeeds and the loan is repaid with interest, this is a positive result indicating effective evaluation and adequate analysis. Conversely, project failure and inability to repay indicate negative results and possible inadequacy of analysis. Failure may be due to external circumstances or flaws in the bank's evaluation process, such as unsuitable tools, poor interpretation of results, lack of a comprehensive view, or political decisions imposing lending without proper economic evaluation.

In this study, due to confidentiality and limited access to information, reliance was placed on inquiries, discussions with staff and the bank manager, observation, and review of available documents.

Section Two: Observations on the financial analysis and evaluation used by the bank to grant investment bank loans

The following observations were noted:

1. Regarding financial analysis of financial statements of applicant enterprises:

- Reliance solely on traditional methods such as ratio analysis and traditional indicators like working capital.
- Lack of functional financial analysis that breaks activity into investment, financing, and operating functions.
- Use of the sources and uses of funds table only for extracting certain elements without analyzing causes of changes, despite its ability to show items such as net self-financing.
- Neglect of cash flow statements, which help monitor liquidity, choose financing sources, and assess investment policy effectiveness.
- Reliance on absolute standards only, without industry standards, due to regional characteristics.
- Absence of multi-year cash flow analysis.
- No use of break-even analysis due to lack of data and limited use of cost accounting.
- No use of statistical and mathematical methods that aid forecasting.
- No leverage analysis, despite its importance in assessing operating and financial risks.
- No qualitative analysis of financial statements to interpret underlying indicators.
- Inability to analyze enterprises operating in financial markets through their traded securities.
- The bank does not use financial analysis indicators to predict the financial failure of enterprises in the medium and long term, which could help in determining the enterprise's ability to continue operating.
- The bank does not rely on ratio circles, charts, and graphical statements in presenting the results of financial analysis, limiting itself to tables only.
- The bank does not use modern computer software in financial analysis, relying solely on spreadsheet programs (Excel) and calculators.

2. With regard to the financial evaluation of the investment project to be financed:

- The bank does not, based on financial evaluation criteria for investment projects, compare the available investment alternatives in favor of the enterprise, whether by providing advice or by imposing the alternative that benefits both the enterprise and the bank. Rather, it only conducts a financial evaluation of the investment project submitted by the project-owning enterprise.
- The bank always and only relies on specific criteria in evaluating investment projects, such as the payback period, net present value, profitability index, and internal rate of return.
- The bank does not rely, in its evaluation, on other criteria that are no less important, such as the accounting rate of return, the cutoff period criterion, the net average rate of return criterion, and developed criteria.

- The evaluation relies on a pre-determined discount rate. In an unstable and volatile economy that depends on oil taxation, which experiences collapses in oil prices, and is characterized by rising inflation rates from year to year, the discount rate used may be non-objective and inaccurate, leading to imprecise results.

3. With regard to other aspects:

- There is no specialized technical unit at the level of the bank branch to monitor and follow up on the implementation of investment projects in the field, whether before, during, or after granting the investment bank loan.
- There is no specialized unit in financial analysis and evaluation at the level of the bank branch to carry out the financial analysis and evaluation of investment bank loan applications.
- The bank's role is limited to approving investment projects after preparing or evaluating the feasibility study, without extending its role to include monitoring the implementation steps of the project throughout its various life stages. Consequently, it does not verify that the project adheres to the planned scheme and the feasibility study, nor does it verify that the investment bank loan has been disbursed for its intended purpose, i.e., the investment project. It also does not identify the problems, imbalances, and deviations that may arise during project implementation and execution.
- Investment project owners inflate figures by relying on specialized accounting offices to exaggerate project revenues and underestimate annual costs, thereby misleading the bank and gaining its confidence to grant the loan.
- The dominance of political and social considerations over the process of granting investment bank loans due to state intervention in credit allocation, particularly with regard to youth support and employment programs and agencies, leads to the absence of proper economic evaluation of the investment project.
- The bank focuses more on the guarantees obtained from the investment project owner than on a serious study of the feasibility and success of the investment project.
- The bank lacks experience in evaluation and analysis of industrial and productive projects at the local level, due to its focus on agricultural projects given the predominantly agricultural nature of the region, on the one hand, and the scarcity—if not absence—of industrial and productive projects in the region, resulting in a lack of information in this field consistent with the market and the characteristics of the region as a whole, on the other hand.
- The bank focuses more on the numerical evidence and factual data contained in accounting and legal documents than on their quality, reliability, and accuracy.

Conclusion:

Accordingly, the process of financial analysis and evaluation of investment bank loans constitutes a fundamental step on which the Bank of Agriculture and Rural Development relies before engaging in financing investment projects of enterprises, especially in an uncertain environment. This is done through a set of financial tools and criteria designed for this purpose, aimed at ensuring the profitability, feasibility, and effectiveness of the investment bank loans to be granted. However, the adequacy of the financial analysis and evaluation used by the bank for the enterprise and its investment project plays an important role, on the one hand, in diagnosing the true financial position of the enterprise and, on the other hand, in confirming the profitability of the enterprise's investment project to be financed, thereby helping the bank to make the final decision regarding the granting of the investment bank loan. Nevertheless, after conducting the field study at the level of the Bank of Agriculture and Rural Development, it was observed that the bank neglects most of the well-known financial tools and criteria and does not use them in evaluating investment bank loans, which weakens the effectiveness of evaluating investment bank loan applications.

Ethical Considerations. This study relies exclusively on institutional documents, financial analysis frameworks, and secondary data obtained from official banking practices and published sources. It does not involve human participants, surveys, interviews, or personal data. Therefore, ethical approval was not required. The research adheres to principles of academic integrity, objectivity, and responsible use of information.

Author Contributions

- **Dr. Kasmi Mohamed Miloud**: Conceptualization of the study, research design, financial analysis, interpretation of results, and drafting of the manuscript.
- **Dr. Beddiar Ahmed**: Literature review, methodological refinement, critical revision of the manuscript, and academic editing.

Both authors reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article. The research was conducted independently and without any financial or institutional influence that could affect its objectivity.

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