Financial Ratios as an Assessment tool for Measuring Supply Chain Performance and productivity: An Empirical Evidence from Industrial Bank of Iraq

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***Abstract*— The present study is focused on the subject of financial analysis is one of the important topics in the field of financial management and accounting. The research hypothesis is achieved by not using the industrial bank for financial ratios. The low financial ratios listed in using the financial ratios and the focus of analysis of ratios for the five years. Which require reconsideration of the use of these ratios in the future by the bank. The results table of the use of financial ratios for the five years shown various importance. The data provided by the financial lists cannot be used for the purposes of planning and evaluating the efficiency of performance without using one of the means of financial analysis. The primary and secondary sources of data has been used for the present study and to make the analysis of the study more robust. The research aims at presenting a study represented by using the financial ratios for the purpose of evaluating performance efficiency. Financial analysis is considered one of the important tools in the business establishments and a basis of planning and control, which includes a detailed study of the data contained in the financial statements adopted by the project and the financial analysis by ratios is an important and fundamental means in the study of the financial position of the project in n light of the figures and data in its financial statements. The present also provide some policy level implications and also some future research directions are proposed to conclude the research study.**

***Keywords*—** *Financial ratios, Performance, supply chain management, Financial analysis and financial management.*

International Journal of Supply Chain Management
IJSCM, ISSN: 2050-7399 (Online), 2051-3771 (Print)

1. Introduction

The subject of financial analysis is one of the important topics in the field of financial management and accounting, through which the management of the facility can diagnose the strengths and weaknesses in their internal environment and evaluate their financial and investment decisions and can be used as one of the important bases in determining their strategic options [1-6]. The importance of financial analysis has increased in recent decades due to several factors, including the high competition intensity between different economic projects, the increasing role played by the financial markets [7-12]. The tremendous development in information technology and its various uses, which requires increasing the importance of providing analytical tools and financial indicators appropriate to keep pace with the size and speed of the completion of various economic processes and the most used tools in financial analysis are the financial ratios [2].

Financial analysis is considered one of the important tools in the business establishments and a basis of planning and control, which includes a detailed study of the data contained in the financial statements adopted by the project [1]. Financial analysis by ratios is an important and fundamental means in the study of the financial position of the project in n light of the figures and data in its financial statements [13-20]. The financial ratios were divided into a number of totals, each of which reflects specific aspects of the project. Some reflect the liquidity position of the enterprise, particularly the possibility of making long-term liabilities and the other reflects the efficiency of managing current and fixed conditions, which measures the degree of indebtedness of the project and the possibility of borrowing [3]. The use of financial ratios in the field of financial management has been growing since the application of financial ratios had been on various aspects of financial management such as credit rating, financial and management controls, risk management and risk assessment and interest rate policy [13-16].

The research includes two major section, which are divided into multiple sub sections the first was devoted to the theoretical side while the second sections devoted to the practical aspect of the research concluded with the necessary conclusions and recommendations. The next section of the paper is designated to the research methodology, including research problems, development of hypothesis, purpose of the research, significance of the research, methods of data collection used for the present study.

2. Research Methodology

2.1 The Research Problem

The data provided by the financial lists cannot be used for the purposes of planning and evaluating the efficiency of performance without using one of the means of financial analysis, which is represented by using the financial ratios and comparing the financial lists of the current year with previous years, in which it enhances the detection of weaknesses and strength and achieving efficiency of performance [3]. There is a consensus among the researchers that financial ratios are one of the key performance indicators for any organization, if the purpose is to explore the nature of financial performance [8, 11, 17-21].

2.2 Hypothesis Development of the Research

The use and analysis of financial ratios enhances the chances of reaching to an efficiency measurement of the Company's financial policy by comparing the financial ratios for the current year with those of previous years [8, 11, 19-23].

2.3 Purpose and Significance of the Research

The research aims at presenting a study represented by using the financial ratios for the purpose of evaluating performance efficiency.

Most companies do not apply money management techniques. Therefore, it requires using financial analysis methods, including financial ratios for the purpose of planning and monitoring the efficiency of performance and to achieve the optimal use of available resources [21-30].

The researcher adopted two methods of data collection

- Official sources: All records of the company include the research sample.

- Oral interviews: in order to obtain some data not available in official sources.

The subsequent section of the paper is designated for the types of Comparative Financial Analysis such as cross sectional and time series analysis.

3. Types of Comparative Financial Analysis

There are two types of analysis used when comparing ratios.

- Cross-sectional
- Time series analysis

3.1 Cross-Sectional Analysis

This analysis includes comparing the financial ratios of a number of different establishments at a specific time of year. The model establishments that seek to increase their share in the market are tasked with comparing their performance with the performance of other establishments in the same sector, and since the financial statements of the competing establishments are available and can be obtained and analyzed, there for, the establishments usually compare their ratios with the financial ratios of the main competitors or the competing establishments that the facility wishes to compete with or surpass [31, 32]. This type of analysis is called bench marking and has become very common, by comparing the financial ratios of the facility with another facility or a number of identified facilities, bench marking can identify the strengths and weaknesses of the facility. Another common type of comparison is the comparison with the industrial standard, which compares a set of ratios with the industrial standard, where this can reveal any deviation from the normal rate so it is very important to verify deviations from the standard of goods, whether negative or positive [33].

3.2 Time Series Analysis

This type of analysis evaluates the performance of the same facility over time by comparing the current performance with the past performance, allowing the facility to determine whether it is developing as planned or not, Trend indicators can be developed by comparing performance for a number of years and these indicators benefit enterprises in planning their future operations.

3.3 Cautions About Ratio Analysis

There are some determinants that must be considered and taken into consideration when analyzing using financial ratios they are:

A single financial ratio cannot be used to judge the performance of an enterprise because it does not provide effective information about the facility's position – thus a set of ratios must be used to judge the facility. However, if the financial analysis relates only to a particular part or an aspect of the financial position, one or two may be sufficient to give a picture of the situation [34-36].

- When comparing financial statements, they should be used by a particular date. If not, the comparison may lead to erroneous decisions and results.
- When performing ratios analysis, it is best to use audited financial statements because the information contained in unaudited financial statements may not reflect the true financial position of the facility.
- When comparing the financial ratios of a particular facility with the financial ratios of another, it should be for the same period to limit the impact of economic inflation on the results.

3.4 Categories of Financial Ratios

Financial ratios are classified into five groups

1. Liquidity ratios group
2. Profitability ratios group
3. Activity ratios group
4. Debt ratios group
5. Market ratios group

Where liquidity, activity and debt ratios measure risk, while measuring the ratios of profitability and market returns and since the period of liquidity and activity and profitability became more important because it provides us with information about the facility useful in short-term operations Each group of major groups includes several types of financial ratios which reflect certain indicators that can be used in the analysis of the financial situation of the establishment and decision-making [7-11].

3.5 Liquidity Ratios Group

Financial Liquidity of the facility can be measured by its ability to meet short-term liabilities as they mature and the major liquidity metrics are:

1-Current Ratio

2-Quick Ratio

3-Net Working Capital

3.5.1 *Current Ratio*

Financial Liquidity of the facility can be measured by its ability to meet short-term liabilities as they mature [4, 5, 12]. Therefore, it indicates the margin of safety through the ability of current assets to cover the current liabilities and the increase in the ratio is a good indicator of the liquidity of the company and is calculated as follows:

$$\text{Current Ratio}=\frac{\text{Total Current Assets}}{\text{Total current liabilities}}$$

We can notice that the ratio scale is which means the number of times the current liabilities are covered with the margin of safety. If the trading ratio is equal to 2, it is described as acceptable but the acceptance of this value depends on the type of industry in which the company operates [24, 25], current ratios [26, 27].

3.5.2 Quick Liquidity Ratio

This ratio is measured by dividing the current assets minus the inventory on the current liabilities and by the following rule:

$$\text{Quick liquidity ratio} = \frac{\text{total current assets} - \text{inventory}}{\text{total liabilities}}$$

- The reason for the exclusion of stocks when calculating the liquidity ratio is due to two factors:

- There are several types of inventory that cannot be sold easily because they are complementary to other varieties.

- Inventory is usually sold on term (or is converted into commodities ready for sale and then sold with debt) this means that it turns into debited pacts before it turns into cash and this percentage can be applied in Industrial and Commercial Companies. As for companies that do not deal with stocks (do not have stock), the ratio of liquidity is fast and equal to the proportion of trading as in the case of the banking sector [7-11].

3.5.3 Net Working Capital

Net capital can be measured using the following formula:

$$\text{Net working capital} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

This measurement is useful for the internal observation purposes of the company and when obtaining a long-term debt, the loan agreement usually includes a minimum amount of working capital net that the facility must maintain. This condition protects the creditors by obliging the company to maintain good liquidity.

3.6 Second: Profitability Ratios Group

There are more profitable metrics, which generally measure the profitability of the company taking into account the level of sales, volume of assets, owners' investments and equity and there is no doubt that when the company does not achieve profits, creditors. The shareholders become concerned about the future of the company and about the recovery of their money so the creditor owners and the management of the company are interested in increasing profits as it protects the company from the risk of bankruptcy and one of the tools commonly used to assess the profitability of the company is Common-Size Income Statement Or relationship of elements ratios of the income list in sales and there is more than the proportion of profitability emanating from this group and the most used are below [7-11].

3.6.1 Gross Profit Ratio

This indicator measures the ratio of total profit to sales and the higher the percentage the better for the company

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net sales}}$$

This percentage measures the remaining amount of each JD of sales (as a percentage) after paying all costs including interest and taxes [7-11]. This percentage is a common and important measure to measure the success of the company in its operations, taking into account the consideration of the return on sales. The ratio varies from one industry to another and is calculated as follows

$$\text{Net Profit Ratio} = \frac{\text{Net profit}}{\text{Net sales}}$$

3.7 Research Sample

The Industrial Bank is considered one of the specialized banks in Iraq. It was established in 1935 as an industrial agricultural bank and then became independent in 1940. It is currently practicing in accordance with the provisions of the Public Companies Law No. 22 of 1977, as amended, laws, regulations and instructions which are still valid. In a manner that does not interfere with and aims at growing and developing the national industry in the private, mixed and cooperative sectors within the framework of the economic development plan through the granting of loans of all types and bank facilities in addition to the business of commercial banking and mediation in the sale and purchase of financial securities based on the decision of the Revolution Command Council.

3.8 Results of Calculating the Financial Ratios of the Bank

We have been relying on the final accounts for the five fiscal years ended December 31, 2009. To prepare a table of the main figures contained in the final accounts mentioned above for the purpose of adopting them to calculate the financial ratios as explained in Table No1 while (6-2) were allocated for the purposes of calculating the different financial ratios. Whereas table No. 7 was allocated to present the results. Calculating financial ratios for the ended five past years on December 31, 2009.

Table 1. A comparison of the main figures contained in the final accounts for the five years ended December 31, 2009 for the Industrial Bank / General Company Baghdad

Account Name -Thousand Dinars	2005	2006	2007	2008	2009
Total Current Assets	99,769,443	105,316,401	156,337,105	197,489,013	178,344,400
Total Current Liabilities	68,267,462	72,206,689	122,724,831	163,535,647	145,064,200
Gross Profit	1,343,587	2,977,668	5,740,049	3,093,621	642,715
Net Profit	379,655	1,117,870	1,261,536	1,475,803	265,489
Total Revenue	4,987,068	7,099,730	10,361,901	8,233,231	5,310,001
Total Current Assets	99,769,443	105,316,401	156,337,105	197,489,013	178,344,400
Total Current Liabilities	68,267,462	72,206,689	122,724,831	163,535,647	145,064,200
Gross Profit	1,343,587	2,977,668	5,740,049	3,093,621	642,715
Net Profit	379,655	1,117,870	1,261,536	1,475,803	265,489
Total Revenue	4,987,068	7,099,730	10,361,901	8,233,231	5,310,001

The table is prepared by the researcher by using final accounts of the bank for the five years ended December 31, 2009

The total revenue of the bank consists of (revenues from banking operations and investment income) corresponding to the net sales revenues of the industrial companies. For the purpose of calculating the financial ratios, a table was prepared for the results of calculating each ratio in which the percentage of trading was calculated as shown in Table No.2.

Table 2. The Trading Ratio for the five Years ended December 31, 2009

Budget Heads -Thousand Dinars	2005	2006	2007	2008	2009
Total Current Assets	99,769,443	105,316,401	156,337,105	197,489,013	178,344,400
Total Current Liabilities	68,267,462	72,206,689	122,724,831	163,535,647	145,064,200
Trading Ratio / Time	1.4610	1.4590	1.2740	1.2080	1.2290

*Trading ratio= $\frac{\textit{Total current assets}}{\textit{Total current liabilities}}$

The table is prepared by the researcher by using final accounts of the bank for the five years ended December 31, 2009

The calculation of net capital is reflected in Table No. 3.

Table 3. Net working capital for the five ended years December 31, 2009 of Industrial Bank / General Company – Baghdad

Budget Heads -Thousand Dinars	2005	2006	2007	2008	2009
Total Current Assets	99,769,443	105,316,401	156,337,105	197,489,013	178,344,400
Total Current Liabilities	68,267,462	72,206,689	122,724,831	163,535,647	145,064,200
Net Working Capital	31,501,981	33,109,712	33,612,274	33,953,366	33,280,200

*Net working capital= $Total\ current\ assets - Total\ current\ liabilitie$

The table is prepared by the researcher by using final accounts of the bank for the five years ended December 31, 2009

Table 4. Ratio of total profit for the five years ended December 31, 2009 of Industrial Bank / General Company / Baghdad

Budget Heads -Thousand Dinars	2005	2006	2007	2008	2009
Total Current Assets	99,769,443	105,316,401	156,337,105	197,489,013	178,344,400
Total Current Liabilities	68,267,462	72,206,689	122,724,831	163,535,647	145,064,200
Ratio of Gross Profit%	26.94	41.94	55.40	37.58	12.10

* Ratio of total profit = $\frac{Gross\ profit}{Total\ revenue}$

The table is prepared by the researcher by using final accounts of the bank for the five years ended December 31, 2009

The ratio of the total profit was also calculated as shown in Table No. 5 the percentage of total profit and its relation to the expenses of the current activity and total revenues for the five years ended December 31, 2009

Table 5. budget heads

Budget Heads -Thousand Dinars	2005	2006	2007	2008	2009
Total Current Assets	99,769,443	105,316,401	156,337,105	197,489,013	178,344,400
Current Activity expenses	3,643,481	4,122,062	4,621,852	5,139,610	4,667,286

The table is prepared by the researcher by using final accounts of the bank for the five years ended December 31, 2009

The net profit ratio was also calculated and is shared in Table No. 6

Table 6. Net profit for the five years ended December 31, 2009 Industrial Bank / Baghdad General Company

Budget Heads -Thousand Dinars	2005	2006	2007	2008	2009
Net Profit	379,655	1,117,870	1,261,536	1,475,803	265,489
Total Revenue	4,987,068	7,099,730	10,361,901	8,233,231	5,310,001
Net Profit Ratio	7.61	15.75	12.18	17.93	5.00

* Net Profit Ratio $= \frac{\text{Net Profit}}{\text{Total Revenue}}$

The table is prepared by the researcher by using final accounts of the bank for the five years ended December 31, 2009

The results obtained from the ratios were also consolidated in Table No. 7. Table of results are the reflection for the five years ended December 31, 2009

Table 7. Table of results of calculating the financial ratios for the five years ended December 31, 2009 for Industrial Bank / Public Company _ Baghdad

Financial ratio	Unit of measurement	2005	2006	Change	2007	Change	2008	Change	2009	Change	Notes
trade rate	Once	1.461	1.459	0.0014-	1.274	-0.128	1.208	-0.173	1.229	-0.153	Decrease in ratio
Quick Ratio	Once	1.461	1.459	0.0014-	1.274	-0.128	1.208	-0.173	1.229	()0.153	Decrease in ratio
Percentage of total profit	%	26.94	41.94	15	55.395	28.455	37.575	10.635	12.104	14.863	High in proportion
Net profit ratio	%	7.613	15.745	8.135	12.175	5.132	17.925	10.312	5	-2.613	A decrease in the percentage in 2009
Net working capital	Thousand dinar	19,813,150	33,109,712	1,607,731	33,612,274	2,110,293	33,953,366	2,451,385	33,280,200		High net working capital

The table is prepared by the researcher by using final accounts of the bank for the five years ended December 31, 2009

This analysis was made with the below mentioned points as consideration.

- December 31, 2009 with the adoption of 2005 as the base year.
- The rest of the financial ratios were not adopted due to their non-conformity with the nature of the work of the Industrial Bank
- The trading ratio = the rapid percentage due to the lack of inventory
- Analyzing the results of using financial ratios
- Analysis of the results of using financial ratios

For the purposes of analyzing the results of the use of financial ratios, a set of tables No. 1 to 7 were presented in the research side of the applied side. The results of the analysis in light of this were in the light of previous studies [7-11].

3.9 Analysis of the Trading Rtio

The general trend of the bank's trading ratio is a continuous decline, with a ratio of 1.461%, 1.459%, 1.274%, 1.208%, and 1.229% for the five years ended December 31, 2009. The decrease is due to the increase in current liabilities compared to the basic rate which reached 145064.200, 163535.647, 122724.831, 72206.689.68267.462 for the last five years December 31, 2009.

The increase in current liabilities compared to the base year was as follows:

57.77%, 79.77%, 139.55%, 112.48% and for the years 2009, 2008 and 2007 respectively as shown in Table No. 1. Despite the increase in the current assets compared to the base year, which reached 17834440, 194, 489, 013, 156337105, 105316401, 99769443 for the last five years ended December

31, 2009. The increase in current assets for the base year was as follows: 5.55%, 58.70%, 97.95%, and 78.76% for the years 2009, 2008 and 2007 respectively, as shown in Table No. 1. However, the increase in current assets and the accompanying increase in current liabilities has led to a decrease in the trading rate. The treatment requires an increase in assets against a reduction in current liabilities and this will increase the ratio of future trading in order to enhance the ability of the financial exchange [7-11, 36].

3.10 Analyzing Ratio of Total Profit

Through the results of the table No. 4 Table of calculation of the total profit for the last five years ended December 31, 2009 we clarify the following:

The general trend of the ratio of total profit in the bank is increasing and compared to the base year, where the percentage was 26.74%, 41.94%, 55.395% 37.575% for the four years ended December 31, 2009, the ratio for 2009 was 12.104%, which is lower compared to the base year and in the general trend, it is due to the following:

The clear increase in expenses of the current activity of the bank (banking expenses, depreciation and administrative expenses) reached 4667,286,5139,610,462,182,412,202,364,348 thousand dinars for the five years ended December 31, 2009. As shown in Table No. 5. The increase compared to the base year is as follows: 13.14%, 26.85%, 41.06% and 28.10% for the years 2008, 2007, 2006. It is also increasing with the general trend line for the years of the research sample except 2008, which was characterized by a decline. The results of Table No. 5 show the table of the calculation of the total profit and the relation of the expenses of the current activity and the total revenues.

The clear increase in the total annual revenues ended on December 31, 2009 compared to the base year, except for the decrease in the total revenues achieved for the year 2008 and for the year 2009 compared to the general trend line of revenues for the years of the research sample where the total revenue as shown in Table No. 5 is the table of the calculation of the total profit and its relation to the expenses of the current activity and the total revenues. The revenues amounted to 53,100,008,823,321,1036,191,7099,730,498,706 thousand dinars for the five years ended December 31, 2009 .The increase in total revenues for the base year is as follows:

6.4%, 65.1%, 107.78% and 42.36% for the years 2009, 2008 and 2007, where we notice that the percentage is increasing significantly with the general trend line of total revenues except for 2009, where the increase rate is not in line with the general trend line [27-35].

Based on points as mentioned above, the impact of these clear and direct points on the years 2009 and 2008 is shown. This resulted in a clear decrease in the total profit as a result of the increase in the current activity expenses by a clear decrease in total revenues compared with the general trend line of revenues during the years of sample search.

3.11 Analysis of Net Profit Ratio

Based on the data of Table No. 6 the table of net profit ratio for the five years ended December 31, 2009 is as follows:

The net profit for the five years ended December 31, 2009 is as follows:

Year	Net Profit – Dinars in Thousands
2009	265,489
2008	1,476,803
2007	1,261,536
2006	1,117,870
2005	379,655

Note that net profit compared to the base year was on a continuous rise except for the year 2009, which was characterized by a clear decrease in the net profit as the increase compared to the base year according to the following percentages for the years 2008, 2007, 2006 respectively 194.44%, 232.28%, 288.72% 2009 was characterized by a decrease of 30% from the base year.

Net profit reached 7.613%, 15.746%, 12.175% and 17.925% for the five years ended December 31, 2009. The analysis showed the slight increase in net profit during the four years of the research sample compared to the base year it is also in line

With the general trend line of the ratio except for the year 2009, which showed a clear decline compared to the base year and the general trend line where the net profit was 5%. The decrease in the net profit during 2009 is due to the decrease in total revenues. During the two years above compared to the general trend line. Total revenues for the five years ended December 31, 2009 were as follows:

5310001 ,8233231 ,10361901 ,7099730 and 4987068, which is in constant increase except for the year 2009, which was characterized by a clear decrease in the total amount of revenues. This resulted in a decrease in the net profit and net profit for 2009 in particular. The net profit amounted to 265,489 with a decrease by 30% from the base year while the net profit ratio was 5%, which is a decrease from the base year 2.613%. [27-31].

4. Limitations of the Research

There are various limitations of the present research based on the nature of research and also the subject under investigation has various dimensions to it. Since there are various aspects and models of exploring the performance of any organizations in terms of financial implications. There is debate among the researchers that the financial ratios are the true representation of the financial performance of any organization or not. Furthermore, if yes financial ratios are the true representations which one of these carry more weight and which ones are of lesser importance, so one of the limitation of the present research is that due to scope and nature of the research, the results may be considered as non-representative of the actual financial performance. The future research studies may be conducted to explore more financial ratios and its impact of the financial performance of any organization, furthermore, the results of various financial ratios can also be compared in order to check the robustness and rigor of the particular rations. Considering that the financial accounting has the foundational rule of nor changing the elements of money measurement, it has an assumption that changes in price is either minimal or it is absolutely nonexistence, therefore any ration analysis would have an inbuilt discrepancy in the nature of the models used for analysis and drawing conclusions, particularly the financial ratios aimed at examining the profitability aspect of any organization face this limitation. It is therefore, recommended by the present study to keep these aspects in mind while comprehending the results of the present study.

5. Recommendations and Conclusion

The research hypothesis is achieved by not using the industrial bank for financial ratios. The low financial ratios listed in table No. 7 the table of using the financial ratios and the table of analysis of ratios for the five years ended December 31, 2009 which require reconsideration of the use of these ratios in the future by the bank. Table No.7 results table of the use of financial ratios for the five years ended December 31, 2009 and analysis of the results of financial ratios show:

- Clear decline in the ratio of trading and the rapid rate, due to the increase in current liabilities during the five years ended.
- The clear decline in the percentage of total profit for the year 2009 reaching 12.104%.
- The clear decline in the net profit for 2009, which reached 5%.
- Through analyzing the financial ratios and relying on the final accounts for the five years ended 31 December 2009, the decrease in financial ratios was attributed to:
- There is a large increase in current activity expenses, especially administrative expenses for the five years.
- A decrease in total revenues (investment income, income from banking operations) for 2009.
- Despite the increase in the capital of the Industrial Bank, this increase did not lead to an increase in profits which commensurate with the size of the increase in capital. This subject requires the management of the bank to develop plans and policies that will increase revenues and maximize profits.

Through the findings of the present study recommend the following aspects which needs to be taken into account by the policy makers and other stakeholders.

- Use the financial ratios in the research to achieve an assessment of the efficiency of performance in the Industrial Bank

- Studying all ways to increase investment revenues and revenues of banking operations in order to achieve better profitability for the bank as well as studying the reduction of expenses related to these revenues.

- Study and develop a new policy for the granting of loans for the industrial sector and increase investment opportunities and develop procedures for banking operations in the coming period to achieve the benefits to the bank and encourage the national industry after the stability of the security situation.

Evaluation of a study by the Industrial Bank for the purpose of establishing a mechanism for the protection of national products to support of the Iraqi economy and in cooperation with the Ministry of Industry and to the benefit of both the industrial and the bank sectors.

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