

Measuring Performance Efficiency Indicators: The General Company for Agricultural Supplies as a Model for the Period 2016–2018

Ali S. Ahmed¹, Tariq N. Ibrahim²

¹Department of Accounting, Cihan University-Erbil Kurdistan Region, Iraq

²Ministry of Interior, Kurdistan Region, Iraq

Abstract—Measuring performance efficiency indicators is considered one of the most important topics that public or private companies should undertake, as it provides extensive information on its reality and highlights the most important strengths and weaknesses that guide the company's management, which is considered a fundamental basis for the decision-making process. This study was conducted on the General Company for Agricultural Supplies of the Iraqi Ministry of Agriculture to estimate the criteria of the efficiency of its performance in the years 2016 and 2018 and to make comparisons between the 2 years. The results showed that most of the performance criteria for the year (2018) fell below the base year (2016), which requires a pause to improve the performance efficiency to develop its future activity in a manner commensurate with its position in preparing the various agricultural requirements that the agricultural sector deals with. The research included some conclusions related to the decrease in the efficiency of the company's performance in managing working capital in 2018 comparing to the year (2016) as the liquidity ratio fell below the acceptable rates, which indicates that the company's ability to meet its obligations in the future has decreased. The working capital turnover rate also decreased, indicating that it was not used correctly in addition to other reasons. The research also included some important recommendations that enable the company to overcome the failures that it faced during the study period.

Keywords— Performance efficiency, Liquidity ratio, Working capital, Liquidity, Profitability.

I. INTRODUCTION

The General Company for Agricultural Supplies “(GCAS)” is one of the companies of the Iraqi Ministry of Agriculture, operating according to the Public Companies Law No. (22) of 1997, as a self-financed economic unit owned by the state. It has a moral personality and financial and administrative independence.

A. Research Problem

The problem of the research is that the GCAS has not been subjected to study the performance efficiency indicators to assess its administrative and financial decisions to be able to make decisions efficiently.

B. Importance of Research

In the light of the proliferation of large public and private corporations with large capital, and the direction of today's world toward the liberalization of trade through the

implementation of the World Trade Organization agreements, the survival will be of companies that use modern management, including studying the efficiency indicators and performance in making decisions that are not only important in the field of financial management but also in the context of corporate management as a whole.

C. Objectives of Research

The research aims at:

1. Identify the different trends in the study of performance efficiency indicators and their role in decision-making,
2. Knowing the financial position of the company, and
3. Providing ready-made financial information that helps the management of the GCAS when making appropriate decisions that contribute to reducing costs and maximizing benefits.

D. Hypotheses of Research

1. The inability of GCAS to achieve better rates than the current rates in its indicators of performance will lead the company to failure in the near future.
2. The lack of qualified human resources in the GCAS will lead to failure in the implementation of performance indicators.
3. The lack of interest of the GCAS management to study the performance indicators will lead to the lack of knowledge of its financial and administrative position.

E. Research Methodology

The methodology of statistical research was used, which is based on the collection of field information of the phenomenon studied through the observation, interview, analysis, and then draw conclusions and suggest appropriate solutions. In addition to the analytical descriptive approach, which depends on the indicators of efficiency of performance in the analysis of data and figures. The field survey method was used to collect data to reach and record information obtained from the company.

II. FINANCIAL AND ECONOMIC ASSESSMENT, THEORETICAL APPROACH

The successful formulation of a national development plan depends on the appropriate selection of projects and the consequent programs (Ahmed and Massoudi, 2018). The preparation and evaluation of projects are an integrated and ongoing process and are one of the basic components of economic planning. Therefore, the proper state of the project is that the output value must be more than the input value, which is a fundamental justification for each economic project. When the value of the outputs is less than the input value, this represents a waste of available resources and indicates a defect in the production process.

The main objective of company analysis is to see how well it contributes in achieving highest economic growth, as well as achieving the highest return on capital. There are two types of analysis: The financial analysis of project which is primarily concerned with obtaining profits from the implementation of investment project and uses the market value inputs and outputs in estimating costs and returns. The second type is the economic analysis, which takes into account the overall considerations of society. The return of project from the point of view of society using shadow prices that reflect the real value of inputs and outputs (Little and Mirrlees, 2017, p. 8).

A. Economic Evaluation

The economic evaluation of productive project is the economic analysis of the various aspects of expenditure and revenue for project and for a specific period of time, to know the economic feasibility and technical expertise in the field of market research and economic analysis, the backbone of these feasibility studies.

B. Importance of Evaluating Agricultural Projects

The feasibility study represents technical, economic, and commercial basis on which the decision to accept or reject an investment project is based. The objective of the feasibility study is to define the scientific methods used in collecting and analyzing data to arrive at results that determine the validity of project and its feasibility and success. To each proposal for a specific idea aimed at creating a value added directly and which requires the allocation of material and human resources, and on this basis it means a plan for the use of the available economic and natural resources. Little and Mirrlees, 2017, p. 18 illustrate that the project is only a plan that can be analyzed and evaluated as an independent unit. The project can be defined as an investment activity that directs the economic resources available to be a productive basis which achieves a certain amount of revenue over a specific period of time. Agricultural project is one of the necessary components for the implementation of the agricultural plan and according to the link between the agricultural project and the plan, and between the plan and the governmental economic and social policy, it is necessary to select projects that are technically and economically acceptable within the framework of the stated governmental plan. For the new projects that have not yet been implemented, this evaluation process can achieve two purposes: First: Identify alternative projects that could replace the proposed project due to their contribution to economic, social, and financial returns.

Second: To choose the best means to exploit the available natural and financial resources in a way that achieves the highest economic returns. For existing facilities, the objective of the analysis is to identify the strengths or weaknesses of the project and to increase its productivity and minimize losses (Khuder, 2012, p. 287-288).

C. Financial and Economic Analysis

Financial analysis is the kind of evaluation that is carried out from the perspective of entrepreneurs and is concerned with estimating the financial profitability of projects throughout their useful lives. The financial analysis of agricultural projects varies according to the different analytical outlook. Financial analysis represents a micro-level analysis focusing on the investment project as an independent unit regardless of the variables, factors, and relationships outside it.

However, the economic evaluation of the project is concerned with estimating its effects at the national level, that is, assessing all the effects of the implementation of the project on society, whether economic or social. The economic evaluation is concerned with measuring the economic profitability of these projects, that is, the evaluation of the economics of the project from the point of view of society as a whole and not from the individual point of view which is concerned with estimating the financial or commercial profitability of the project. The rates of analysis were all based on Weygandt et al., 2010, pp. 824-875, (Helfert, 2011, pp. 95-147).

D. Financial Analysis and the Use of Financial Ratios

The field of finance is broad and dynamic. Finance influences everything that firms do, from hiring personnel to building factories to launching new advertising campaigns. Because there are important financial dimensions to almost any aspect of the business, there are many financially oriented opportunities for those who understand the basic principles of finance.

1. Financial analysis expresses the measures taken in studying the relationship “between a group of elements of financial statements in a certain period and studying the direction of this relationship in the following period” (Khanfar and Al-Matarna, 2009, p. 71).
2. Financial analysis is defined as the study of the financial statements after their classification, with the aim of showing the correlations between their components and the changes occurring in these elements, the size and impact of these changes, and the derivation of a set of indicators that help study the status of the production unit in terms of operation and financing, evaluate its performance as well as provide the necessary information to the parties benefiting from to make sound investment decisions (Ahmed and Massoudi, 2008, p 12). It is “the means aimed at defining a set of relationships or measures in the form of financial ratios or trends that summarize the project’s operational, investment, and financing activities as shown by the financial statements and other information sources with their explanation and interpretation.”
3. Financial analysis is also defined as “a mathematical analysis of the financial statements using mathematical formulas and numerical analytical standards that work to find relationships between the elements of the financial statements and determine their trends and the percentage of change in them to reach information that is used as a basis for decision-making and clarifies the position of the economic unit.”

E. The Objectives of Financial Analysis (p. 19)

According to Fallouh et al. (2008-2009), financial analysis aims, in general, through the use of financial ratios to reach the following goals:

1. Evaluating the financial position of the economic unit with the aim of reaching indicators to measure performance and determining the volume of changes that occurred to the various activities during a specific period of time.
2. Preparing necessary information for making economic, financial, and investment decisions.
3. Determining the ability of the economic unit to fulfill its financial obligations in the long- and short-term.
4. Evaluating profitability of the economic institution and assessing the economic feasibility of investment.
5. Study the possibility of economic unity to continue.
6. Evaluating the performance efficiency of the economic unit in utilizing its available resources in order to strengthen the positive elements and address their weaknesses.
7. Effective planning and control.

F. Classification of Financial Ratios

Financial ratios are classified into several groups according to the goal of their calculation. The process of selecting appropriate financial ratio is the first step in analysis, because there are a large number of financial standards that are used in evaluating performance efficiency, including those related to the production capacity, productivity and, the value added, or those related to the liquidity, profitability and activity analysis, capital structure, profit distribution, and market value ratios. The reliance on these criteria gives indications according to the financial data obtained on the activity.

The financial ratios were used to express the company’s use of financial resources efficiently, depending on the horizontal and vertical analysis (Al-Sahli, 2015, p. 279) as both of these analyses are concerned with studying the changes that occur to the items. The elements of financial statements help to understand and interpret the trends through the horizontal comparison of the financial statements, as well as the vertical analysis which is concerned with measuring the percentage change in each element of the statement throughout the accounting period and converting it into a basic value.

III. INDICATORS FOR MEASURING EFFICIENCY AND PERFORMANCE

Performance is a major multi-dimensional construct aimed to achieve results and has a strong link to strategic goals of an organization (Massoudi, 2016). Indicators for measuring efficiency of performance of the GCAE were calculated and analyzed according to the information extracted from the company’s initial final accounts for the years 2016 and 2018, as shown in Table I.

From Table I, the following measures which are presented in the theoretical framework are most appropriate to the activity of the company:

A. Liquidity Ratios

Which measure the short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash (Kaeso). These ratios include:

Current ratio

Which is computed by dividing current assets by current liabilities. It is approximately equal to 1: 1.07 for the year (2016) while it became (1: 1.21) in the year (2018). It is clear that in both years the rate was less than the average rate acceptable (1: 2), which indicates a decline in the company’s ability to fulfill its obligations finance.

Acid-test ratio

Which is a measure of a company’s immediate short-term liquidity. It is computed by dividing the sum of cash, short-term investments, and net receivables by current liabilities.

The ratio is approximately equals (1:0.26) for the year (2016) and (1: 0.44) for the year (2018), and in both years it was less than the acceptable rate (1: 1), which indicates a decrease of the company’s ability to pay its maturing obligations quickly and promptly.

Inventory turnover rate

Which measures the number of times, on average, the inventory is sold during the period. We compute it by dividing cost of goods sold by the average inventory.

In the GCAS, the ratio has decreased from (2.53) times for the year 2016 to 1.32 times for the year (2018), which indicates the inefficiency of the disposal of commodity stocks to achieve the required revenue.

The working capital turnover rate represents the number of times the working capital turnover during the accounting period. It is an effective indicator of the efficiency of the administration in exploiting and employing working capital. The rate of working capital turnover can be calculated by dividing sales on working capital.

In the GCAS, the working capital turnover rate decreased from (1.98) times for the year 2016 to 0.85 times for the year (2018), which indicates that the working capital is not being used with the required efficiency to achieve the required revenues.

B. Profitability Ratios

Which measures the income or operating success of a company for a given period of time. Income, or the lack of it, affects the company's ability to obtain debt and equity financing. It also affects the company's liquidity position and the company's ability to grow. These ratios include:

Profit margin

Which measures the percentage of each dollar of sales that results in net income. We compute it by dividing net income by net sales.

TABLE I

THE FOLLOWING MEASURES WHICH ARE PRESENTED IN THE THEORETICAL FRAMEWORK ARE MOST APPROPRIATE TO THE ACTIVITY OF THE COMPANY.

Details	2016 (m IQD)	2018 (m IQD)
Fixed assets	2054.000	4915.000
Inventory	91,324.000	98,395.000
Debtors (Other than for doubtful debts)	1,127,768.000	457,212.000
Cash	39,338.000	365,376.000
Capital invested	101,311.000	102,130.000
Capital and reserves	112,789.000	140,775.000
Current assets	1,622,882.000	995,503.000
Net receivables	48,939.000	9741.000
Sales	218,226.000	146,507.000
Net profit	113,046.000	24,510.000
Accounting indicators:		
Working Capital Turnover	1.980 t	0.850 t
Liquidity Ratio (Current Assets : Current Liabilities)	1:1.070	1:1.210
Acid-Test Ratio (Quick Liquidity Ratio)	1:0.260	1:0.440
Cash Turnover	0.554 t	0.400 t
Debt ratio	22.000%	7.000%
Inventory turnover	2.530 t	1.430 t
Growth of capital and reserves for the base year 2016	-	24.800%
Rate of return on investment	111.000%	24.000%
Turnover rate of net capital invested	2.154 t	1.430 t
Ratio of sales to operating expenses	135.000%	50.000%

*A year (2016) is chosen as the base year as it has achieved the highest net profit for the company during the evaluation period (2016-2018). **The rate of inventory for the year 2016 has extracted by adding the value of the inventory for the years 2015 and 2016 divided by 2 (where the value of the inventory for the year 2015 amounted to IQD 81,006.000). Source: GAEC, Accounting Department.

The ratio decreased from 41.39% for the year 2016 to 9.92% for the year 2018, and this rate is considered close to the bank interest rate for the fixed deposits annually (7 to 8%).

Cash turnover rate

Which is a comparison between sales and the average cash amount. It is a measure of the efficiency of cash use carried out by the company. If the amount of cash is relatively small, it means high cash turnover so that the company is bankrupt (Kasmir, 2012: 141 in Made Sri Utami and Made Rusmala Dewi, 2016).

Cash turnover rate dropped from 0.554 time for the year 2006 to 0.400 time for the year 2011, which means that the company has not used the available cash amounts effectively during the two evaluation years.

The rate of return on assets

Which is an overall measure of profitability. This ratio is computed by dividing net income by average assets.

In the GCAS, the rate of return on assets decreased from 111% for the year 2016 to 24% for the year 2018. This percentage is not considered to be the required level.

C. Solvency Ratios

Which measure the ability of a company to survive over a long period of time. The debt to total assets ratio is an important ratio to be measured. This ratio measures the percentage of the total assets that creditors provide. We compute it by dividing total debt (both current and long-term liabilities) by the total assets.

In the GCAS, the debt ratio to total assets ratio decreased from (22%) for the year (2016) to (7%) for the year (2018) indicating the efficiency of the company in the debt collection process.

From the data of Table I, we can also extract the following rates as an important findings related to the company's evaluation of performance:

- **The company's reserves (fixed capital)** which is decreased in the year (2018) from the base year (2016), where this percentage reached (24%) due to an increase in the company's profits during the year 2016.
- **The turnover rate of the net invested capital** which is decreased from 2.15 times for the year 2016 to 1.43 times for the year 2018. It indicates that the net exploitation of the assets available to the company and self-financed was not of the required efficiency
- **The company's sales ratio to the current activity cost (current expenses)** which is decreased from (135%) for the year (2016) to (50%) for the year (2018). This indicates that the goods are not well disposed and a decrease in the cost of the activity is covered.

D. Some Other Indicators

Some other significant indicators were extracted from the GCAS financial statements for the years 2016 and 2018 to complete the financial position presentation of the company. Table II shows the data that were used in comparison and the results of analysis.

1. The rate development of the current activity surplus (first stage) for the year (2018) has decreased to (-78%) from the base year (2016).

TABLE II
CALCULATING THE RATIOS OF FINANCIAL INDICATORS FOR THE YEAR (2018)
COMPARED TO THE BASE YEAR (2016).

Details	2016 (m IQD)	2018 (m IQD)
Current revenues	273,097.000	318,309.000
Current expenditures	(161,155.000)	(293,386.000)
Current activity surplus (first stage)	111,942.000	24,923.000
+ Other revenues	1517.000	823.000
-Other expenditures	(414.000)	(1,236.000)
Gross profit percentage	41.390%	9.920%
The ratio of the evolution of the surplus (first stage) to the base year (2016)	-	(78%)
Evolution of net surplus (final stage) to the base year (2016)	-	(78%)
Ratio of the increase in the current expenses to the base year	-	82%
Ratio of the increase in the current revenues to the base year	-	16.5%
The ratio of the surplus of the current activity (first stage) to the cost of current activity (current expenses)	69%	8.5%

Source: GCAS, Department of Accountings.

- The rate of development of the net final surplus (net profit) for the year (2018) decreased to (-78%) from the base year (2016) as well.
- The percentage increase in the current expenses for the year (2018) than the year (2016) was greater than the rate increase in the current revenues for the year (2018) than the year (2016), where the percentage increase in the current expenses reached (82%), while the percentage increase in the current revenue (16.5%). The reason for this is due to the fact that the rate increase in expenses included the fixed expenses, such as the salaries, which are outside the company's will, in addition to the reduction in net profit for the year (2018) compared to (2016).
- The ratio of surplus of the current activity (first stage) to the cost of the current activity for the years (2016 and 2018) reached (69% and 8.5%), respectively, which were less than the standard rates for the year (2018) and greater for the year (2016). The reason for this is due to the decrease in net profit for the year (2018) compared to the year (2016).

IV. CONCLUSIONS

The performance of the GCAS of the year (2018) compared to the base year (2016) was evaluated based on the information and data provided by the company, field visits to work sites and personal interviews with officials, we show below the most important results:

- From the indicators reached, it is clear that the company's performance for the year (2018) is declining from the base year (2016) except for the debt ratio. This requires a pause to improve the efficiency of its performance to develop its activity in the future in a way that is commensurate with the company's position in providing various agricultural inputs that the agricultural sector deals with. The reasons behind the decline are mostly attributed to the following:
- There is no clear plan for the company on which to base

its activities, as this depends only on the needs of the beneficiaries.

- The company was not able to fully meet the needs of the beneficiaries during the evaluation years, as there was a delay in the implementation of many import contracts due to dealing with non-discreet sources and relying on intermediary companies that were unable to fulfill their obligations.
- Low efficiency of the company in managing its working capital as the liquidity ratio fell below acceptable rates, which indicates a decrease in the company's ability to meet its obligations. A decrease in the rate of turnover of working capital (sales/working capital) indicates that capital is not exploited with the required efficiency.
- There are many other obstacles facing the company in carrying out its duties and have caused its performance to decrease, such as the failure to use the cash flow generated from the amounts of support received from the Ministry of Finance, which led to a decrease in the cash turnover and its weak contribution to revenue growth in an effective and appropriate manner.
- The information system adopted in the company does not fully serve its activity and objectives, as it was unable to provide many basic information about the company's activities, and the system used is tainted by some deficiencies, such as the advanced packages that aim to analyze the various activities of the company. Furthermore, the company does not have any local, regional, or international performance standards for the purpose of measuring the level of performance and evaluating the activities it performs.

A. Recommendations

- Activating the role of the company's board of directors in preparing plans for the needs of beneficiaries according to the text of Article (19) of the Public Companies Law No. (22) for the year 1997 regarding setting policies, administrative, financial, organizational and technical plans necessary to achieve its goals.
- The company must rely on well-known suppliers (local or imported) that fulfill their obligations to provide agricultural supplies to the beneficiaries on time and in the required quantities.
- Study the financial position of the company and working toward raising efficiency of the working capital through the disposal of stock materials, collecting debt, and raising cash flow rate to meet the potential liabilities.
- Analyzing the company's expenses to identify the increase in costs and trying to take advantage of fixed costs (especially salaries and wages) to create additional revenues for the company.
- Reducing the forward sale processes and collecting old debts, then converting them into cash to be used to serve the company's activities and paying off short-term liabilities.
- Setting appropriate standards and indicators for the various activities of the company to conduct a continuous evaluation of performance for the purpose of correcting deviations up to date.

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