



# **Cost Structure and Its Role in Maximizing the Profitability of Some Industrial Companies-Iraq**

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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**Case Study**

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## **ABSTRACT**

This research dealt with the topic of the cost structure and its role in maximizing profitability in industrial companies. The General Company for Construction Industries was chosen as a sample for the research. The research focused on two main variables, namely the cost structure as an independent variable and profitability as a dependent variable and the research used descriptive analysis in analyzing the cost structure and providing information that was used in determining the volume of production required to maximize profit.

The research aims to measure the role of the cost structure that is compatible to the nature of the company's activity and its circumstances in maximizing profit, by showing the extent of its impact on the decisions that will be taken by management by analyzing the components of the current costs and studying the behavior of costs and thus extracting the proportion of fixed and variable costs in the structure. The current costs and its role in making decisions to increase production to reduce the unit cost of production and determine the volume of production that maximizes profit to the maximum extent possible and to explain the factors affecting the method of measuring costs used within the economic unit and the way to evaluate inventory, and thus will be completed Cost control and planning for better production and profitability target.

**Keywords:** *Optimal cost structure; maximizing profitability.*

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## 1. INTRODUCTION

Industrial economic units want to expand production and this requires additional operating expenses in order for the result to be the realization of additional revenues and accordingly the economic unit must take into account the volume of production and sales needed to cover its costs at least and then compare that with the expected demand in the market. If the expected demand is greater or it equals the minimum required production or sales, then only the expansion process is profitable and vice versa, taking into account the inability to expand to infinity [1-4]. The cost structure means the percentage of variable costs and fixed costs in the total costs and their role in maximizing the profit of the economic unit. When the cost structure in the economic unit consists of fixed cost, and a relatively simple rise in revenues occurs, this leads to a jump in profits, that is, when the volume of sales increases, but in return it leads to a high risk of loss that the economic unit may face when the opposite occurs [5-9]. But if the economic unit uses a variable cost structure, it provides it with more protection as a result of reducing the loss to a minimum.

The variable cost structure is characterized by a decrease in the risk element when the volume of sales decreases, and all this means that the selection of the appropriate cost structure for the economic unit depends on the nature of the activity and the ability of the economic unit to predict the volume of sales.

As a result of the difficulty of defining a single cost structure for all economic units even if they practice the same economic activity, it is therefore important to study the behavior of the cost elements of the economic unit in detail to determine the proportion of fixed and variable costs in the cost structure and its role in making decisions to increase production to reduce the cost of a single unit produced and to determine the volume of production Which leads to maximizing the profit as much as possible and also determining the influencing factors such as the method of measuring costs and the method of evaluating the inventory in the economic unit [10-13].

## 2. RESEARCH PROBLEM

The research problem can be determined in the difficulty of having a cost structure that is appropriate for all companies, which requires

analyzing the components of the economic unit cost structure and determining the ratio of fixed and variable costs, which helps in understanding the cost behavior and determining the appropriate cost structure for entity and this leads to improving the quality of decision-making related to increasing production [14,15].

## 3. RESEARCH HYPOTHESIS

The research is based on Testing the Following Hypothesis.

The study and analysis of the structure of the costs of the economic unit will provide information that helps decision makers in the economic units to maximize profitability.

## 4. RESEARCH IMPORTANCE

The importance of the research is that it deals with a topic related to the changes that occur in the world where the difference in the nature of projects, and therefore the difference in their objectives, the size of their activities and the strong competition faced by economic units, as well as the analysis of the cost structure and its role in determining strengths and weaknesses in the use of available resources. that these factors contribute to making decisions that would maximize the profitability of the project and achieve its objectives.

## 5. RESEARCH GOALS

The research goals to determine the cost structure that is compatible with the nature of the project activity, in order to maximize profitability and impact on the decisions that will be taken by the management such as:

- Estimated production volume that leads to maximizing profitability.
- Determining the method of measuring costs within the economic unit and the method of inventory valuation.

And then control over costs, better plan production, achieve profits, reveal obstacles and difficulties that limit its use in the research sample, and try to develop suggestions that contribute to emphasizing the importance of the optimal cost structure in maximizing the profit of the project.

## 6. RESEARCH SOCIETY AND SAMPLE

The cost structure and its impact on profitability were studied, based on actual data from records

and interviews with managers of the General Company for Construction Industries, which is one of the public sector companies in Iraq.

## **7. SOURCES OF INFORMATION COLLECTION**

The research data was collected from the following main sources:

1. Books, scientific periodicals, references, available websites and studies related to the research topic.
2. Actual data from records and interviews with managers of the General Company for Construction Industries as shown in the practical side later.

## **8. THEORETICAL FRAMEWORK FOR COSTS STRUCTURE**

Concept Costs Structure and its Relationship to Cost Behavior.

Cost structure is defined as “the ratio of both fixed costs and variable costs to the total costs in a given economic unit.” The cost structure varies from one economic unit to another according to the industrial sector. It is necessary to study the behavior of costs to understand the relationship between the elements of costs and the volume of production. As it is necessary to know how costs are affected by different levels of production, in order to take the following decisions:

1. Planning the production level for the coming period.
2. Reducing the selling price to increase sales.
3. Employees' salaries are considered fixed or variable costs.
4. If the activity is increased by a certain percentage, how will the costs and revenues be affected?

### **8.1 Classification Cost Elements by their Relation to the Volume of the Activity**

This classification is considered an important tabulation of the cost elements, as it is related to the study of the behavior of the cost elements according to their relationship to the size of the activity, where the costs are divided according to their behavior into the following elements:

### **8.2 Variable Costs**

Variable costs are costs that vary in total directly and proportionately with change in the activity level, the variable costs include many elements such as material and wages whether direct or indirect, cost of goods sold, sales commissions and other.

### **8.3 Fixed Costs**

Fixed costs are costs that remain the same in total within the relevant range or fixed costs are the costs that are variable for the unit producing, depending on the activity level, the fixed costs include many elements such as rent, insurance, salaries, depreciation and other, the fixed costs are of two types:

### **8.4 Committed Fixed Costs**

These are the costs that are obligatory for the company in the short periods, and the company's management cannot change it in the short periods, and sometimes the company change it in the event of making fundamental changes in the terms of the contract, for example investing in facilities and equipment, insurance expenses and salaries of top management in the company, but why called this type of fixed costs as committed fixed costs because the costs of restoring them later are likely to be far greater than any short – run benefits that might be realized legal conditions between the company and the contracting parties with.

### **8.5 Discretionary Fixed Costs**

They are the costs that are usually referred to as the costs that the company can control or manage, and this often appears in the annual decisions that the administration makes to spend fixed costs, for example, advertising, research and development, public relations contracts, various program development contracts, etc. This type of the costs can be stopped in the short term with little damage in the long run to the company.

### **8.6 Mixed Costs**

Mixed costs are costs that include both a variable and fixed element, so the mixed costs change in total but not at the same percentage with changes in the activity level such as utilities, maintenance costs that consist of part variable and other fixed. There are several methods used to separate mixed costs into fixed and variable

costs, and analyzing mixed costs to their components is important in improving the quality of decision making.

### 8.7 Mixed Costs Analysis

These approaches differ in the method of analysis and its application, and in the accuracy of their results. it are as follows:

1. The engineering method.
2. The accounts analysis method.
3. A graphical or scatter graph method.
4. The high-low method.
5. The least-squares Regression method.

### 8.8 Engineering Method

Under this method, cost behavior analysis depends on the use of the engineering analysis and the technological relationship between inputs and outputs. This method is appropriate when there is a physical relationship between the cost and the cost driver. The method is appropriate only when the relationship between inputs and outputs is clear. An example of this is the use of this method to estimate the costs of materials, wages and machine operating hours, because these elements can be clearly measured, in addition to this method is not limited to industrial use as it can also be used for Administrative and marketing activities, such as printing and purchases, it are also inappropriate for estimating costs that are difficult to link to a product unit, such as manufacturing overhead costs.

### 8.9 The Accounts Analysis Method

This method requires that the accounting department agree to separate accounts for a specific period into fixed costs, variable costs and mixed costs, then mixed costs are separated into fixed and variable costs by according to the function that the cost performs, Thus, this analysis will be different from one accountant to another and depends on personal judgment and the nature of the economic unit, and it used in this analysis the latest data for costs, so it may not be identical to the cost behavior of previous periods or future periods, so this method requires careful examination of the accounts.

### 8.10 The A Graphical or Scatter Graph Method

Under this method, the total costs for a specific activity level are determined on the graph where

the total costs will be determined in the vertical axis and activity levels are defined in the horizontal axis, and a straight line is drawn between the data and the specified points so that the distance at the top of the straight line is equal to the distance in the distance at the distance in The point from which the straight line begins on the vertical axis represents the mixed costs, and by using the regression equation ( $y = a + b x$ ) the variable cost per unit ( $b$ ) is found by extracting the difference between any two points on the straight line by dividing the cost change by changing the volume The Activity, and this method is characterized by being easy and provides a graphical form that shows the behavior of costs, but on the other hand, the process of determining the straight line that mediates all points may differ from one person to another and thus the results extracted will differ according to this method so it is usually advisable to apply the method of least squares First, to calculate the straight line mathematically, then apply it graphically.

### 8.11 The High-low Method

According to this method, the periods in which the activity level is at its highest and lowest value are chosen, and a comparison is made between the change in costs resulting from the change in the activity level during the two periods, and determine the variable cost per unit , then after that a specific activity level is chosen to extract the total variable cost and then subtract it from The total costs for one of the two periods (higher or lower) to extract the fixed costs by applying the regression equation ( $y = a + b x$ ) where  $a$  represents the fixed costs, and  $x$  represents a certain activity level, and this method ignores all other levels of activity and depends only on the higher and lower periods They may not reflect the natural circumstances of the activity so results are inaccurate.

### 8.12 The Least-squares Regression Method

It is a mathematical method for calculating the regression line and is based on the principle that the sum of squares of the vertical deviations of a straight line is less than the sum of squares of the vertical deviations of any other straight line, and the straight line can be found by the two equations:

$$\Sigma y = Na + b\Sigma x \quad (1)$$

$$\Sigma y = Na + b\Sigma x \quad (2)$$

Where (N) represents the number of sample values, then the equations are subtracted and the variable cost value is extracted per unit (b), and then compensation is given in one of the two equations to extract the value of fixed costs a, assuming the total cost value is available for a given activity level.

### 8.13 Cost-volume Relationship

The volume of production is considered the most important factor affecting costs in addition to the prices of factors of production, the efficiency of production workers and the technical methods of production, and if the volume of production is viewed in the short term as the extent to which the company's management cannot bring about significant changes in the volume of production and the change is limited to increasing the production units. By increasing the variable production elements within a certain range, in the long term, large changes in production capacity can be caused by adding machines or additional workers and new buildings or all of these elements, and within the limits of available economic resources. The volume of production is as follows:

1. The relationship of fixed costs to the volume of production: the total fixed costs are not affected by the volume of production in the short term, but the average fixed costs per unit are affected by the volume of production and decreased by the increase in the units produced.

2. The relationship of variable costs with the volume of production: the variable costs are affected by the volume of production as it increases with increasing and decreasing with decrease, but not at the same rate as the changing costs behavior there are three stages, as follows:

A - The phase of the average variable cost decreases with the increase in the number of units produced.

B - The stage of constant average variable costs, with an increase in the number of units produced.

C - The stage of increasing the average variable costs by increasing the number of units produced.

Therefore, the cost stages in the short term will be as follows:

• **The first stage is the cost decrease phase.**

In it, the average costs and marginal costs start to decrease with increasing production volume, due to the decrease in the share of units of fixed costs and to the extent that the average costs equal the marginal costs.

• **The second stage is the cost increase phase.**

In it, the average costs and marginal costs start to increase with increasing production volume by increasing the variable costs that increase with the increase of production.

### 8.14 The Relationship of the Operating Leverage with Fixed Costs

It is the relationship of the contribution margin in the economic unit to the recognized net income, where the fixed costs represent the difference between the contribution margin and gross income, and this is why the higher the ratio of fixed costs to the total costs, the operating leverage increased, and it can be extracted by dividing the contribution margin by income, and the operating leverage is used for purposes of measuring the effect of a change in sales on income, through multiplying the value of the operating leverage by the change in sales.

$$\text{Operating leverage} = \text{Contribution Margin} / \text{Income}$$

$$\text{Percentage change in income} = \text{operating leverage} \times \text{percentage change in sales}$$

### 8.15 Shifting to Fixed Cost

The new trend in various sectors is towards an increase in the percentage of fixed costs compared to variable costs, in other words, the transformation of handicrafts towards automation, due to the fact that competition has generated greater pressure on the economic unit to provide greater value for the money that is paid by customers to purchase the service or commodity it provides. This economic unit and this can only be done through an automated production process, for example, accounting consulting companies depend on the experience and knowledge of the employee, but now the transition has been to use accounting software to provide these consultations to customers in addition to a future plan.

To manage his money and cash flows, and usually this software is built and designed on the experience and information accumulated by a number of experts, so according to that, salaries as an example of fixed costs can be fixed or variable, taking into account that the behavior of both salaries and wages varies from one country to another and depends on the legal restrictions and labor contracts in the particular country, in France, Japan and Germany, for example, the administration has limited flexibility regarding adjusting the volume of labor to match the volume of activity, but in other countries such as the United States of America and the United Kingdom, the administration, as usual, has more flexibility to make such adjustments by increasing or decrease.

Since many companies have laid off a large number of employees in recent years in an attempt to reduce costs and not an attempt to respond to the decrease in activity (sales), meaning that fixed costs may be subject to restructuring or changes, whether by increase or decrease, but this should not be the result of changes that may be slight or temporary volume of activity, but rather the management strategy, and since the variable cost increases directly with the increase in the number of units produced in the industrial economic units, and the shift from fixed costs to variable costs enabled the unit to avoid the risks that accompany the structure of fixed costs represented by not achieving enough revenue to cover them and bear the unit the minimum of them, but this does not mean that economic units should avoid the fixed cost structure or stay away from fixed costs whenever possible, as switching to a variable cost structure means at the same time a decrease in the potential profit that will be achieved when the activity level rises from the normal level, because the rate of change Revenue is always equal to the percentage change in variable costs.

Thus, the shift to fixed costs that all production sectors have experienced over the last century, and the transition from the method of production at a variable cost and the transformation of most of these costs into fixed costs that are incurred at the beginning of the project, these costs may be large at the beginning, but with the continuation of production and the increase of units produced, this cost can be distributed to a very large number of units produced, which leads to a lower cost of production, and thus to deliver products to the largest possible segment at the lowest costs.

But the great advantage of production at a fixed cost (which is the low cost and the high competitive advantage of the entrepreneur) is offset by great difficulties, and these difficulties are:

First: Production at a fixed cost involves a greater adventure, especially in new and innovative projects, because there is uncertainty about the amount of demand for the product and its sufficiency to cover the fixed cost incurred at the beginning of the project.

Second: The economic unit with a fixed cost structure is not only more risky, but it is also more volatile in its profitability from year to year because any decrease in demand leads to a decrease in sales without a corresponding decrease in costs.

There are a number of things to take into consideration before making these decisions:

New projects, especially those that rely on new products, should move away from a fixed cost structure, and maintain the greatest flexibility by relying on variable costs. It is possible to move to fixed costs when the project is stable, with the aim of reducing costs, noting that this will reduce the flexibility of the project as well. Economic units with a fixed cost structure have the possibility of fluctuation in their rate of profitability greater with the change in demand from year to year. As for units with a variable cost structure, they may involve less volatility but may have less comparative advantage over their competitors. We conclude that when all these factors are analyzed as part of determining the current cost structure, two benefits for the producer result.

The first: is that the current cost structure is necessary to determine the volume of production that achieves the highest possible profits for each product produced because the cost of one unit exceeds the costs of producing this unit only, otherwise the economic unit will be quickly out of competition.

Second: Measuring the costs that make up the cost structure of the economic unit enables the identification of strengths and weaknesses in the production process, better use of available resources, and the cost structure that can increase the profit.

Theoretical framework for profit and its calculation methods

## 8.16 Concept Accounting Profit

Net income as defined by Needles "It is the accumulation in the retained earnings account and it is measured by the difference between revenues and expenses when the revenue is greater than the expenses".

Or it can be expressed by the equation: Net income = Revenue – Expenses

But in the event that the revenue is less than the expenses, the result is a "loss". Net income is used as a measure of performance or a basis for other measures, such as the rate of return on investment, or earnings per share. The elements directly related to the measurement of profit are revenues and expenses.

International accounting standards define revenue as "the increase in economic benefit during the accounting period in the form of inflows or enhancement of assets or a decrease in liabilities that results in a decrease in equity, except for those that result from the owners of the entity". The international accounting standards define expenses as "the decrease in the economic benefit during the accounting period in the form of outflows, depletion of assets, or an increase in the liabilities of the economic unit that results in a decrease in the owners' equity, except for those related to the owners of the economic unit." But not every increase in the equity account arises from revenues, and also not every decrease in it is a result of expenses. Shareholders' investments increase the equity account, but it is not revenue, and the dividend decreases the equity account, but it is not an expense. In addition, separating the components of revenue and expenses and collecting them in different ways allows other measures of the performance of the entity when it is necessary and appropriate to better understand the financial situation. As the concept and measurement of income according to the accounting concept depends on the historical cost in measuring the assets and liabilities of the facility and the focus in measuring the net income of the period is on what is achieved from income, expenses, gains or losses, and according to this basis the income of the accounting period is measured by the following equation:

$$\text{Period Income} = \text{Revenue} - \text{Expenses} + \text{Gains} - \text{Losses}$$

## 8.17 Approaches of Income

First: Capital Maintenance Approach.

Under this approach, the income for the accounting period is calculated through the change in equity after adjustments capital distributions as dividends. What is wrong with this approach is that the income measurement components are not available. There are two basic concepts of capital preservation, namely the concept of financial capital preservation, which occurs when the financial (monetary) value of the net assets of the project at the end of the period exceeds the financial value of net assets at the beginning of the period, after excluding operations with owners, and this is the traditional view of the concept of maintaining Capital, and the physical concept of capital preservation implies that the return on capital (income) occurs or appears when production capacity increases of the project at the end of the period on its physical production capacity at its beginning period, after excluding operations with the owners, and that the main difference between the two concepts lies in how to treat the holding gains and losses that occur when the value of one of the items of the Balances Sheet changes during the accounting period, where these gains and losses are considered as a recovery of the capital It is not included in the income and is treated as a direct adjustment in equity under the material concept, but under the financial concept of capital preservation is considered as a return on capital and is included in the income.

Second: Transaction Approach.

According to this approach, the net income is the result of revenues, expenses, gains and losses resulting from the various operations carried out by the economic unit during the accounting period, which focuses on the income activities related to the activities of the unit during the accounting period whereby the income is classified according to the customer or according to the production line or according to Function or according to whether it is operational or non-operating resulting from ongoing or discontinued operations and to ordinary and extraordinary items. The transaction approach for measuring income is the most traditional approach used by accountants to measure income. Several advantages of the transaction approach in the measurement of accounting income:

1. Income components can be classified in many ways. They may be classified on the basis of the product, categories of customers, or jobs, thus making it possible to obtain more useful information for management.

2. The income generated from each of the different sources – such as income from operations, income from external conditions – can be reported as long as these incomes can be measured.

3. Income classification allows for better predictions due to different behavior models for different types of activities, and different lists can be prepared so that they are linked to each other, and this is supposed to lead to a greater understanding of the data when preparing the financial statements .

4. The entrance to the transactions in the measurement of periodic income for the accounting period is distinguished from the entrance of Capital Maintenance in that it provides more detailed information about the sources of this income, which is in line with the principle of disclosure.

### 8.18 Prepare the Income Statement

Single Statement of Comprehensive Income:

Under this method, the statement of comprehensive income shows all the items of income and expenses recognized during the period, which include the following:

1. The effect of adjusting accounting errors and changes in accounting policies are shown as adjustments for previous years instead of showing them as part of the profit or loss in the current period.

2. The other three types of income that are recognized as part of comprehensive income outside profit or loss when it arises as a result:

A. Certain gains or losses that arise from foreign currency transactions

B. Some adjustments to the fair value of financial instruments.

C. Profits and losses of financial instruments.

The two-step income Statements Approach

Under this method, the income statement shows all the items related to the income and expenses recognized during the period, except for those recognized in the total comprehensive income outside profit and loss. The choice between these two inputs is considered one of the accounting policies that require the economic unit to choose. Its application on an ongoing basis is an application of the principle of consistency in accounting policies. It is an

alternative to the single income statement, which is distinguished from it in the following:

1. Provide a more revealing income measure for the accounting period's business result.

2. Providing more useful information to the income statement users.

### 8.19 Preparation Methods Requirements

1. The effect of correcting errors for previous years or changing accounting policies is shown as adjustments for previous years and not as part of profit and loss for the current period.

2. The economic unit should add any major or minor aggregates that are necessary to provide more appropriate information on the performance of the economic unit, for example the total profit or the total profit of the (continuous) operations.

3. The economic unit should not show or describe any items of income such expenses as unusual items in the comprehensive income statement, the income statement, or in the notes.

4. The economic unit must show or provide an analysis of the expenses using a classification according to the nature of the expenses or according to their function within the economic unit and a choice the classification that provides appropriate information for the users of these lists, that such classifications of expenses are poor, with the exception of financing expenses, expenses of discontinued operations and income tax comprehensive as they are presented separately in the statement of comprehensive income.

## 9. THE PRACTICAL FRAMEWORK FOR RESEARCH

### 9.1 Cost Structure Analysis

Analysis of the cost structure of the State Company for Construction Industries:

For the purpose of determining the variable and fixed costs, it is necessary to analyze the behavior of costs and understand their relationship to the volume of production, so based on the data obtained from the costs department in the General Administration of the General Company for Construction Industries and personal interviews with the department's employees and using the accounts analysis method, costs were linked to the volume of production as at Table 1:



**Table 1. Classification of cost behavior according to the volume of production**

<b>Account Number</b>	<b>Account Name</b>	<b>Classification of cost behavior according to the volume of production</b>
31	salaries and wages	fixed
32	commodity supplies	
321	Raw materials and raw materials	variable
322	fuel and oils	variable
323	Spare part	variable
324	packing material	variable
325	Miscellaneous	fixed
326	Personnel equipment	fixed
327	Water and electricity	fixed
33	Service Supplies	
331	Maintenance	Fixed
332	Research and Consulting	Fixed
333	Hospitality printing advertisement	Fixed
334	Transportation of workers, travel and dispatch	Fixed
335	Rental of assets	Fixed
336	Service Expenses	Fixed
34	Contracting	Fixed
36	Benefits and Rents	Fixed
37	Deprecation	Fixed
38	Transfer Expenses	Fixed
39	Other Expenses	Fixed

The General Company for Construction Industries collects costs from each of its factories in a totality, and the cost accounting department provided the information to the company every month, which in turn prepares the cost lists for the brick sector, primary industry sector and plastic industries sector, and for the general administration that includes each of the headquarters And warehouses and transportation, and Table 2 Shows the company's costs for the year 2010, and this year were chosen to do the cost classification process because of its novelty:

**Table 2. Total costs for the year 2010 - the figures are in the thousands**

<b>No Guide</b>	<b>Account Name</b>	<b>Production Centers (5)</b>	<b>Production Services (6)</b>	<b>Marketing Centers (7)</b>	<b>Administrative centers (8)</b>	<b>Total cost ratio</b>	<b>Ratio</b>
31	Salaries and wages	53208054	1656856	35789	3318347	0.719509	72%
32	Commodity supplies	4010794	19376	574	215409		
321	Raw materials	342511	0	0	0	0.004233	0%
322	fuel and oils	2897643	10861	0	137948	0.03765	4%
323	spare part	333720	310	574	33000	0.004543	0%
324	Packaging materials	14067	0	0	0	0.000174	0%
325	Miscellaneous	207814	8205	0	29596	0.003035	0%
326	Personnel equipment	6610	0	0	2017	0.000107	0%
327	water and electricity	208429	0	0	12848	0.002735	0%
33	service supplies	813889	550	3361	380000	0.014803	1%
34	Contracting	0	0	0	0	0	0%
36	Benefits and rents	0	0	0	0	0	0%
37	Deprecation	244329	1350	0	54839	0.003714	0%
38	Transfer Expenses	0	0	0	0	0	0%
39	Other expenses	0	0	0	16951436	0.209497	21%
	total	58277066	1678132	39724	20920031		100%

*Reference: Based on the statement of distribution of uses to cost centers from the company's balance accounts department*

Relying on the unified accounting system followed by the company as it is one of the formations of the Ministry of Industry and Minerals and represents a public sector company subject to governmental instructions in this regard, the costs were separated into fixed and variable and linked to the volume of production in the company, so the manufacturing cost was separated, which includes the costs of production centers and production services (5 + 6)). In

addition to the costs of the marketing and administrative centers that were mentioned in Table 2, using the data analysis method. This method was chosen because it is compatible with the current situation of the cost system, the multiplicity of laboratories and the difference in their products in terms of type and unit of measurement. Table 3 shows the classification of accounts into Fixed and variable costs:

**Table 3. Shows the analysis of accounts into fixed and variable costs - the figures are in the thousands**

No	Account	Variable costs center (5)	fixed costs center (5)	Variable costs center (6)	fixed costs center (6)	fixed costs Center (7 + 8)
31	Salaries and wages		53208054		1656856	3354136
32	Commodity supplies					
321	Raw materials	342511		0		0
322	fuel and oils	2897643		10861		137948
323	spare part	333720		310		33574
324	Packaging materials	14067		0		0
325	Miscellaneous		207814		8205	29596
326	Personnel equipment		6610		0	2017
327	water and electricity		208429		0	12848
33	service supplies		813889		550	383361
34	Contracting		0		0	0
36	Benefits and rents		0		0	0
37	Deprecation		244329		1350	54839
38	Transfer Expenses		0		0	0
39	Other expenses		0		0	16951436
	Total Expenses	3587941	54689125	11171	1666961	20959755

*Reference: Prepared by the researcher based on Tables 1 and 2*

Relying on the previous table, the ratio of variable and fixed costs to total costs was extracted, as follows:

**Table 4. Percentage of fixed and variable costs to total costs the figures are in the thousands**

Details	The amount	Ratio
Variable Cost	3599112	0.04
Fixed Cost	77315841	0.96
Total Cost	80914953	100%

*Reference: Prepared by the researcher based on Table 2*

It turns out that the ratio of fixed costs to the total costs incurred by the company is approximately 96%, and the ratio of variable costs is approximately 4%. This means that the company's cost structure is a fixed cost structure, but the policy followed by the company in considering all costs incurred by its factories, it is included in the cost of the product is The cost is assembled and then divided by the number of units produced to extract the cost of unit, which in this case will be many times greater than the selling price. This is why we note that the company is unable to cover the costs of production and the other reason is the very high costs of salaries and wages (without a real need) and that the proportion of Dismissed politicians who are hostile to work, up to twice the current employees, and because the law considers all workers to be employees for whom fixed salaries are paid, and the company treats the salaries borne by the factory as, variable and fixed, as follows:

**Table 5. Fixed and variable cost per unit and price**

<b>Factory Name</b>	<b>Qadisiyah Factory</b>	<b>Baghdad Factory</b>	<b>Essauira Factory</b>	<b>Mahaweel factory</b>	<b>Karbala Factory</b>	<b>Nabil Factory</b>	<b>Abu Ghraib Factory</b>	<b>Badoosh Factory</b>
Quantity of production in units	11180	7031	32	1899	609204	14087	900.65	1271
cost per unit	990	547	129605	1847	5.53	120	1569	489
Fixed costs per unit	898.6	317	129587	1756	5.137	114.7	1480.6	413
Variable costs per unit	91.4	230	18	91	0.393	5.3	88.4	76
selling price	140	140	140	140	2.535	100	178.995	219.811

*Reference: Prepared by the researcher based on Table 3 and statement of the marketing activity from the Statistics Department*

Note that in all factories the cost of one unit was greater than the selling price, but this does not necessarily mean that this is the cause of the losses. Fixed costs had a significant impact on the huge losses incurred by the company in recent years as a result of not exploiting the maximum productive capacities of machines or exploiting human resources that constitute the largest percentage of fixed costs, which would distribute costs over a larger number of units and thus reduce the cost of units. So, the main reason is not the low selling price, but rather the lack of production. We also note in the new Baghdad brick factory that the variable cost per unit was greater than the selling price, and this means the impossibility of this factory reaching the break-even point even if it achieved the maximum levels of production, and this is differs on the current perception of officials In the company the research sample and the employees of the cost department, as these losses are attributed to the low selling price only.

Using the cost structure to determine the volume of production that maximizes profit

The decision to expand production, which goals mainly at maximizing profits, needs information about the nature of costs in the economic unit and the type of its cost structure, so after we have analyzed the costs in the General Company for Construction Industries, we will use that information to determine the highest level of production (the maximum production level in the short term within current resources) that maximize profit, Taking into consideration the following matters:

1. The company does not prepare the break-even analysis and therefore it does not have information about the minimum production level, and this means the need to determine the minimum level of production to cover the

company's costs as well as that the information is comprehensive and sufficient to make better production decisions.

2. In all the brick factories (Al-Qadisiyah, Al-Suwairah, Baghdad Al-Jadid, Al-Mahaweel), the cost structure has been modified, considering the cost of fuel and oil as fixed rather than variable costs, the first reason that the variable costs per unit are greater than the selling price, which means the impossibility of the break-even point, and the second reason determine After inquiring about the use of fuel in those factories, it was found that it is used for transport vehicles to bring raw materials to the factory.

3. The decision to expand production also aims to achieve production efficiency, that is, the optimal use of resources such as human energies and equipment, which contribute to distributing fixed costs over a larger number of units. Therefore, the available energies in the company's factories will be taken into consideration.

4. The volume of production was determined for each factory separately due to the difference in the available capacities and the product (for the eight factories that are currently operating)

5. The production levels of each factory are determined in the light of its production capacity, that does not require purchasing new equipment, and in the case that the demand exceeds the available production capacities, this means that the factory needs to invest in equipment and machinery and it is not possible to make profit with the current resources.

6. The cost structure analysis suffers from the same defects found in the break-even analysis, which is that it assumes that what is produced is sold and that there is no production in inventories.

The following Table 6 shows the available energies, the break-even point, and the volume of production required to reach the highest possible profit within the current resources:

Factory Name	Available production capacity in units	Break-even point in units	Required volume of production in units
Baghdad factory	31000	29224	29791
Al Mahaweel factory	32000	71238	71578
Essaouira factory	32000	33992	34532
Al Qadisiyah Factory	32000	228635.5	228975.5
Badoosh Factory	4000	2430	2950
Karbala sand factory	800	610032.5	610599.5
Al Nabai Factory	1340	17191.4	18581
Abi Ghraib factory	30000	15266	15266

*Reference: Prepared by the researcher*

The table shows that most of the factories have decreased their production capacity to levels below the break-even point required to cover the costs of the factory (in each of the factories: Al-Mahaweel, Al-Suwaira, Al-Qadisiyah, Raml Karbala, Al-Nabai factory), taking into consideration that the factories are currently working with one production meal. In the past, it was working with three productive meals (before the events of 2003), and in each of the factories of New Baghdad, Badush and Abi Ghraib, we note that the required production volume was less than the available capacity, and this means the possibility of benefiting from the expansion of production in order to achieve profits for factory , but due to the presence of eight other factories stopped production and continued to charge the company with salary costs, which makes the factories currently in continuous production insufficient to cover those huge costs.

## 10. CONCLUSIONS

This topic deals with the conclusions that emerged from the study of the cost structure and its impact on profit in the economic unit of the research sample (the General Company for Construction Industries) as follows:

1. The lack of interest of the costs department in the company to prepare information on the nature of the behavior of costs led to the provision of insufficient information for making production decisions.
2. The analysis of the costs behavior of the company and the study of its cost structure and the proportion of each of them helped in providing the necessary information to take the decision to expand production with the aim of maximizing profit.

3. The current perception among the company's officials of the reasons for the losses is the low selling price in all the factories, but after the analysis it was found that the low production capacities first and the inefficiency of production secondly are the reason for the current losses of the factories that continue production. As for the cause of the losses at the company level as a whole, it is the company's burden of salary costs High for suspended factories.

4. The absence of a cost system based on correct foundations that separates fixed and variable costs, product costs, period costs in the company, and aggregation of factory costs in the public administration, and that these factories do not have a department for cost accounting.

5. The option to increase productivity is not available to the General Company for Construction Industries to maximize profit as a result of the fact that the required production levels at the break-even point are higher than the maximum production levels available in most of the company's factories, and on the other hand, its inability to change the selling price as a result of strong competition for products imported from The quality of the product and its low prices compared to the prices of the products offered by the company in addition to its inability to reduce costs and its low production capacities and its work with one production meal.

6. The cost of one variable unit in some factories is greater than the selling price, which leads to the continuity of realizing losses even with the increase in the volume of production and to infinity, in addition to the impossibility of calculating the break-even point and the current perception among officials that the cause of losses is the low selling price However, it was

found through the analysis that the reason is the low production capacities.

7. The absence of an analysis of the behavior of costs by the company's accounts to identify the relationship between those costs and the volume of activity and the classification of elements into fixed and variable, and after conducting this analysis by linking costs to the volume of production, the percentage of fixed costs came to 96% of the company's total costs, while the variable costs were 4 %, therefore, the information that is currently submitted to the company's management is not suitable for making production decisions, as it was found that the current cost structure achieves a negative operating leverage equal to (-840.0), and this indicates that the minimum production to be achieved has not been reached.

## 11. RECOMMENDATIONS

In light of the theoretical and practical research, the following recommendations were reached:

1. Paying attention to analyzing the behavior of costs, studying the company's cost structure, and providing sufficient information to better assist decision-makers.
2. Redesign and restructure the cost accounting department in the company in order to advance the important role played by the company in the Iraqi economy.
3. Resorting to increasing production in the long term by purchasing new equipment and increasing the production capacities of factories and re-operating the stalled factories by encouraging investment from the private and mixed sectors in the company's factories and supporting the development plans for the stalled and low-production factories.
4. Utilizing the company's surplus human resources and working to increase the production meals to three meals a day, which will lead to an optimal use of these lost resources and reduce the cost of wages charged to each unit produced.
5. The necessity of preparing the income statement according to the variable cost method in order to provide more accurate information to the various internal users of this information in line with the fixed cost structure that the company owns and the nature of the industrial activity it undertakes.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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