



# USING THE ACTIVITY-BASED BUDGET (ABB) IN IMPLEMENTING THE COST LEADERSHIP STRATEGY AND IMPROVING PROFITABILITY: APPLIED STUDY IN AL-DIWANIYAH TIRE FACTORY

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<p><b>Received:</b> 10<sup>th</sup> December 2022 <b>Accepted:</b> 8<sup>th</sup> January 2023 <b>Published:</b> 14<sup>th</sup> February 2023</p>	<p>The research aims to address the theoretical framework of activity-based budget, with an indication of the role that it can play in implementing the strategy of cost leadership and improving profitability, through the application of the proposed methodology for preparing this budget and a statement of the strategic impact of it, which is reflected in an increase in the revenues of the economic unit or in a decrease in its costs or both together, which will be reflected in the increase and improvement of profitability. The research was applied in one of the factories affiliated to the General Company for Rubber Industries, which is Al-Diwaniyah Tires Factory, on the data for the fiscal year 2016. The budget was prepared on the basis of the activities of the research sample factory, and a set of conclusions was reached, the most important of which was that the use of the budget based on the activities in the Diwaniyah tire factory can help in implementing the cost leadership strategy as well as improving profitability.</p>

**Keywords:** Activity-based budget (ABB), cost leadership strategy, profitability improvement

## 1. INTRODUCTION

The budget is one of the tools for implementing the objectives, policies and programs of the economic unit and showing how to use the economic resources available to it, as well as helping to adapt to the various environmental changes. Achieving these functions requires the availability of a set of requirements, the most important of which is clarity of goals and taking into account all the surrounding variables and circumstances and their effects. As well as using sound scientific and practical methods for its preparation, implementation and follow-up. The activity-based budget (ABB) is one of management accounting techniques for the purpose of achieving decisive success, it's based on a set of principles to delete activities in company that write off not add value activities. For the purpose of achieving this, the economic unit adopts a set of competitive strategies for the purpose of achieving decisive success that are implemented at different levels, the most important of which is the cost leadership and thus help in improving profitability.

### THE FIRST TOPIC: METHODOLOGY OF RESEARCH

#### 1.1 .RESEARCH PROBLEM:

Iraqi industrial entities do not follow the modern techniques of cost management despite the

tremendous changes and developments accompanying the modern industrial environment, which requires from these units the approach of a set of competitive strategies for the purpose of success and survival in the circle of competition, which requires consistency and harmony between the tools used in planning and control. Question research problem as follow: Is the use of the activity-based budget in implementing the strategy of cost leadership and improving profitability? .

#### 1.2 .Research importance:

The importance of this research came from importance of activity-based budget (ABB), which is one of the main tools for implementing the policies and programs of economic units in order to achieve the best use of their available economic resources and in a manner consistent with their competitive strategies that they pursue for the purpose of achieving decisive success and survival and continuity in the circle competition, which is reflected in improving profitability. The helping to adapt to the various environmental changes. Achieving these functions requires the availability of a set of requirements.

#### 1.3 .Research objectives:

This research aims to explain theoretical framework of activity-based budget (ABB), with an indication of role that it can play in implementing strategy of cost leadership and improving profitability, through application of proposed methodology for preparing this budget and a statement of



the strategic impact of it, which is reflected in an unit for the purpose of achieving decisive success or in a decrease in its costs or both together, which will be reflected in the increase and improvement of profitability.

#### **1.4 .Research hypothesis:**

The main hypothesis of this research: the use of activity-based budgeting can help in implementing the strategy of cost leadership and improving profitability.

#### **1.5 .Research sample:**

The sample of research represented in Diwaniyah Tires Factory for the data for the fiscal year 2016.

#### **1.6 . Previous studies:**

Some previous studies related to the current research can be clarified with regard to the activity-based budget (ABB), as shown in the following:

1. Study (Huynh, 2013): The study aimed to integrate the two techniques of activity-based budgeting (ABB) and activity-based costs (ABC), and determine the actual cost of products and services and provide more accurate information, through Assigning the cost of each activity to the cost targets that benefit from it using cost vectors, allowing the elimination of non-value adding activities.

2. Study (Al-Mamouri et al., 2016): The study aimed to apply the budget based on activities in the Babil Municipality Directorate, and the study concluded that the use of the budget on the basis of activities provides a more equitable database on service costs, which leads to persuading the administration of the importance and role of the budget system on The basis of activities and what it provides them with more accurate and appropriate cost data that helps in planning, controlling and making decisions.

3. Study (Boutalbe, 2017): The study aimed at the integration between the activities-based management and budgeting cost systems (ABC, ABM, ABB), and the study concluded that this integration helps provide better information about the costs of each activity and to identify in advance the cost vectors that can From forecasting activities and their costs, which can provide appropriate information for the decision-making process.

4. Study (Elmac & Tutkavul, 2020): The study aimed to link between the budget based on activities and the balanced score card in order to improve the performance of economic units. Financial and non-financial indicators that help evaluate and improve performance.

It is clear from the foregoing that previous studies

increase in revenues of economic attempted to link between the activity-based budgeting technique and other techniques such as activity-based management and costs, as well as linking with the balanced scorecard

### **The second topic: theoretical side of research**

#### **2.1. Concept and importance of activity-based budgeting (ABB):**

Activity based budget (ABB) is seen as a quantitative expression of the activities of an economic unit that reflects the forecast of business or the amount of directions and other financial requirements to achieve strategic goals or to change the plan to improve performance (Siegel & Shime, 2006:309).

The activity-based budget (ABB) reflects the processes and activities, not the resources such as salaries and equipment, as the necessary resources must be derived from the expected activities, the operations of the economic units and the workload, and the workload is simply the number of units needed (McLemore, 1997:4).

The activity-based budget (ABB) is based on the activity-based costing (ABC) technique, as the activity-based budget uses the relationship between the quantity of units produced and the activity required to produce these units to develop detailed estimates of the activity requirements or requirements for the proposed production plan (Hilton, 2008: 348).

The budget on the basis of activities is of two basic importance, which is as follow: (Kaplen, et.al., 2007:487)

1. It identifies the cases in which new production plans are required (material capacity and capacity in human resources) to provide support and service activities in economic units.

2. It represents a more accurate way to plan for future costs.

The activity-based budget helps in knowing the capabilities and energies available to the economic unit, and achieving the set goals that the economic unit seeks, as well as the feeling of all individuals within the economic unit that they have a contribution in preparing the budget, and determining the weaknesses and strengths of this unit, in as well as finding new means and methods. To achieve competitive advantage by defining a cost leadership strategy (Siegel & Shime, 2006:309).

The researcher believes that the activity-based budget (ABB) should be based on future workloads in order to meet the requirements of customers, achieve the objectives and strategies of the economic unit and the



departments, The budget is one of the tools for implementing the objectives, policies and programs of the economic unit and showing how to use the economic resources available to it, as well as helping to adapt to the various environmental changes. Achieving these functions requires the availability of a set of requirements,, follow up on changes in the operations of economic units and improvements in efficiency and effectiveness, and review the flexibility of quality and objectives of the production cycle.

## **2.2. Activity-Based Budgeting (ABB) Steps:**

Through activity-based budgeting (ABB), the products or services that will be produced or provided are identified and then the activities necessary for the products or services that have been identified, and finally the resources necessary to perform the specified activities with the identification of costs associated with them (Hilton, 2008:354).

There are two steps for preparing the activity-based budget, which are the stage of preparing for the preparation of the budget and the stage of preparing the budget. These two stages can be clarified through the following:

1. The stage of preparing for preparing the budget on the basis of activities: Before the budget is prepared on the basis of activities, the economic unit must take a set of the following sub-steps: (Barker, 2008: 134-135)

- a. Strategy development and forecasting of required actions.
- b. Determining the activities of the economic unit

2. The stage of preparing the budget on the basis of activities: The budget on the basis of activities is an advanced stage of preparing traditional budgets, as the preparation of the budget on the basis of activities includes following the following sub-steps: (Kaplan & Norton, 2001:289-290)

- a. Estimating the volume of production and sales for the next period and forecasting the needs of activities.
- b. Calculating the resource needs, whether physical or non-material.
- c. Determining the actual equipped resources, which represent the main and supporting works in the economic unit.

Activity-based budget (ABB) relationship between the quantity of units produced and the activity required to produce these units to develop detailed estimates of the activity requirements or requirements for the proposed production plan. The budget is one of the tools for implementing the objectives, policies and

programs of the economic unit and showing how to use the economic resources available to it, as well as helping to adapt to the various environmental changes. Achieving these functions requires the availability of a set of requirements, the most important of which is clarity of goals and taking into account all the surrounding variables and circumstances and their effects. ABB identifies the cases in which new production plans are required (material capacity and capacity in human resources) to provide support and service activities in economic units and it represents a more accurate way to plan for future costs.

## **2.3.Role of activity based budgeting (ABB) in implementing cost leadership strategy and improving the profitability:**

Under the cost leadership strategy, the economic unit is able to achieve a greater profit margin than competitors when selling products at market prices or reducing their prices less than competitors, which leads to a reduction in the profit margin and expansion of its market share and generate profits that can be reinvested in the economic unit (Pearson, 1999: 144 ).

The activity-based budgeting (ABB) technique achieves the objectives of cost leadership and reduction by analyzing classifying the activities into value adding and non value adding activities, and by eliminating activities that do not add value to the customer, an opportunity can be provided for a valuable reduction in economic unit costs (Charly, et, al. 2001:84).

The process of cost leadership and cost reduction is a very important issue, which is carried out through the management and control of activities considering that the activities that consume resources, as well as the economic unit and according to (ABB) technology is a series of activities designed to provide information to managers in order to improve value Presented to the customer (Blocher, et, al., 1999:111).

When the economic unit follows the cost leadership strategy, it seeks to achieve the lowest cost advantage through cost systems, as well as to achieve the high quality advantage through this strategy. (Jeffries, 2001:102-103).

The budget adapt to the various environmental changes. Achieving these functions requires the availability of a set of requirements, the most important of which is clarity of goals and taking into account all the surrounding variables and circumstances and their effectsThe activity-based budgeting (ABB) technique works to implement the cost leadership strategies and thus help improve profitability through the following: - (Al-Dhahabi, 2005: 315(

1. Justify the funds required in the budget based on the detailed operational, strategic and objectives based on what has been identified as necessary and valuable activities.



2. Defining and describing the performance units for each activity, analyzing and studying the costs required for each activity, depending on their cost vectors, which are the factors affecting the increase or decrease of costs.

3. Determining the funding sources required to accomplish each activity based on target customer analyzes and identifying the responsibility centers with implementing these activities and other required requirements.

The researcher believes that the activity-based budget (ABB) works to identify the means of control required to verify the adequacy and effectiveness of the implementation of the budgets set, and to carry out continuous improvement in the light of the implementation in line with the achievement of objectives, and therefore it can be said that the budget on the basis of activities helps in applied the Cost leadership strategy and improvement the profitability.

**The third topic: practical aspect for research**

**3.1. An introduction to Al-Diwaniyah Tire Factory:**

Al-Diwaniyah Tire Factory is one of factories affiliated

to General Company for Rubber Industries. The Factory established in year1974 according to letter of Ministry of Industry and Minerals No. (M / H/6/25S) on 1/4/1974 based on the provisions of the second paragraph of Article ( 4) From Law No. (90) for the year 1970, amended. The General Company for Rubber Industries started actual production in the second half of 1978, with a design capacity of (300000) tires annually, and its production includes saloon tires. medium load and large load tires. The factory stopped working in 2017 due to the high cost of its products So that it cannot compete with the imported product because of the low prices of the foreign product in the local markets, some production lines must be improved and rehabilitated.

**3.2 . Preparing the activity-based budget (ABB) in the Diwaniyah tire factory and using it in implementing the strategy of cost leadership and improving profitability:**

For the purpose of preparing the activity-based budget in the Al-Diwaniyah tire factory, there are two steps for its preparation, which are the preparation stage for preparing the budget and the stage of preparing the budget. The sales budget during year 2016 in sample factory:

Table(1): The sales budget during year 2016

data	1 <sup>st</sup> quarter	2 <sup>nd</sup> quarter	3 <sup>rd</sup> quarter	4 <sup>th</sup> quarter	Total
Sales units	204.00	479.00	286.00	345.00	1314.00
Selling price per unit	325000.00	325000.00	325000.00	325000.00	325000.00
Sales revenues	66300000.00	155675000.00	92950000.00	112125000.00	427050000.00

Source: Prepared by researchers.

It is evident from the above table that the planned sales amount during the first, second, third and fourth quarters of 2016 were (204), (479), (286), (345) units respectively, and the selling price of one unit was (325,000) dinars, thus The sales value was (66.3 million), (155675000), (92.950000), (112125000) dinars, respectively, and the production budget for the Diwaniyah tire factory for the year 2016 as follows:

Table (2): Production budget during year 2016

data	1 <sup>st</sup> quarter	2 <sup>nd</sup> quarter	3 <sup>rd</sup> quarter	4 <sup>th</sup> quarter	total
Planned sales quantity	204	479	286	345	1314
(+) Ending Inventory	300	325	300	400	1325
(-) Beginning Inventory	(175)	(250)	(225)	(350)	(1000)
Planned production quantity	329	554	361	395	1639

Source: Prepared by researchers.

It is clear from the above table, that the planned production quantity of the research sample factory during the year 2016 during the first, second, third and fourth quarters (329), (554), (361), (395) units respectively, so the planned production quantity during this year ( 1639) unit. The budget is important of which is clarity of goals and taking into account all the surrounding variables and circumstances and their effects. Activity-Based Budget (ABB) is a quantitative expression of the activities

practiced by the economic unit, which reflects the forecast of business or the amount of directions and other financial requirements to achieve strategic goals or to change the plan to improve performance. Through activity-based budgeting (ABB), the products or services that will be produced or provided are determined, and then the necessary activities are identified. Two steps are taken, namely, the stage of preparing for the preparation of the budget and the stage of preparing the budget.



Total cost of the single tire and total for the Diwaniyah tire factory for the year 2016 can be explained as follows:

Table (3): Total cost of one tire and total for the Diwaniyah tire factory for the year 2016

Cost elements	Cost per tire	Cost for total production
Direct material	284918	466980602
Direct wages	48500	79491500
Indirect industrial costs	23340	38254260
Total cost	356758	584726362

Source: Prepared by researchers.

Table (4): The indirect industrial costs of the Diwaniyah tire factory during the year 2016

Accounts	Cost (dinar)
Salaries and wages	6978158
Raw materials and raw materials	1083432
Fuels and oils	1238777
Backup tools	980250
Packaging	2537160
Staff equipment	5108000
Water and electricity	138240
Maintenance Services	1056800
Research and consulting services	7428000
Advertising, printing and hospitality	1524000
Transportation, delegations and communications	3270800
Fixed Asset Rental	625000
Miscellaneous service charges	267477
Land rent and interest	5222159
Annihilation	796007
Total	38254260

Source: Prepared by researchers.

The indirect ones, their allocation to activities requires the selection of a cost vector that represents the factor affecting the increase and decrease cost, and the adoption of the appropriate criterion for the distribution process in the factory, the research sample.

Therefore, direct resources will be allocated on activity cost pools, which is an important step in the activity-based budgeting (ABB) method, as it contributes to allocating direct costs to activities, thus reducing total indirect costs as much as possible. Activity-Based Budget (ABB) is a quantitative expression of the activities practiced by the economic unit, which reflects the forecast of business or the amount of directions and other financial requirements to achieve strategic goals or to change the plan to improve performance. Through activity-based budgeting (ABB), the products or services that will be produced or provided are determined, and then the necessary activities are identified. Two steps are taken, namely, the stage of preparing for the preparation

It can be seen from the above table that the cost of one frame was (356758) dinars, and this means that total cost of production was (584726362) dinars, and since the selling price of one product was (325000) dinars, this means that the research sample factory bears a loss because the cost of The product is higher than its selling price. The details of the indirect industrial costs of the Diwaniyah tire factory during the year 2016 can be clarified as follows:

of the budget and the stage of preparing the budget. Indirect resources will also be allocated to activity cost pools, and in this step, the amount of resource vectors for the proposed activities is determined, which are the vectors of the first stage, as direct resources (direct costs) and indirect costs (indirect costs) are grouped into activity pools, which represents the goal The main focus of research is the preparation of activity-based budgeting (ABB).

The activity-based budget (ABB) of the Diwaniyah tire factory during 2016 can be clarified through the following table:

Table (5): Activity-Based Budget (ABB) for Al-Diwaniyah Tire Factory during 2016



Costs	Allocated bases	Activities (dinar)				Total (dinar)
		Preparation	Preform	Construction	Installation	
Direct materials	Especially	160641327	94423478	181562058	30353739	466980602
Direct labor	Especially	27345076	16073181	30906295	5166948	79491500
Salaries and wages	Number of employees	2400486	1410984	2713108	453580	6978158
Raw materials and raw materials	Quantity of materials used	372701	219070	421238	70423	1083432
Fuels and oils	Machine operating hours	426139	250481	481636	80521	1238777
Backup tools	Machine operating hours	337206	198207	381121	63716	980250
Packaging	Number of units produced	872783	513014	986448	164915	2537160
Staff equipment	Number of employees	1757152	1032838	1985990	332020	5108000
Water and electricity	space	47555	27952	53748	8985	138240
Maintenance Services	Machine operating hours	363539	213685	410884	68692	1056800
Research and consulting services	Number of employees	2555232	1501942	2888006	482820	7428000
Advertising, printing and hospitality	Number of units produced	524256	308153	592531	99060	1524000
Transportation, delegations and communications	Number of employees	1125155	661356	1271687	212602	3270800
Fixed Asset Rental	value of fixed assets	215000	126375	243000	40625	625000
Miscellaneous service charges	Number of employees	92012	54084	103995	17386	267477
Land rent and interest	Land value	1796423	1055921	2030375	339440	5222159
Annihilations	Asset value	273826	160953	309488	51740	796007
<b>Total</b>		<b>201145868</b>	<b>118231674</b>	<b>227341608</b>	<b>38007212</b>	<b>584726362</b>

Source: Prepared by researchers.

It can be seen from the previous table that the cost of the preparation activity (201145868) dinars, the cost of the formation activity (118231674) dinars, the cost of the construction activity (227341608), and the cost of the installation activity (38007212) dinars. The subject of the research, where it was (584726362) dinars, and when compared to the selling price of (325,000) dinars per unit, that is, the sales revenue during this year (427050000) dinars, it becomes clear that there is a loss of (157676362) dinars.

After deliberation with cost accountants and engineers in the factory, the research sample showed that there is a possibility to reduce the cost of direct materials to become (300,235452) dinars, as well as reducing direct wages to become (59618625) dinars, in addition to reducing indirect industrial costs to become (28690695) dinars, and the net can be clarified The profit for one tire and for total before and after reducing the cost of the Diwaniyah tire factory for the year 2016 is as follows:



Table (6): Net profit per tire and for total before and after cost reduction for Al-Diwaniyah tire factory for the year 2016

Cost elements	Before the reduction		After the reduction	
	Per tire	For total	Per tire	For total
Sales revenue	325000	427050000	325000	427050000
(less) Total cost				
Direct material	284918	466980602	228489	300235452
Direct wages	48500	79491500	36375	59618625
Factory overhead	23340	38254260	17505	28690695
Total cost	(356758)	(584726362)	(282369)	(388544772)
Net profit (loss)	(31758)	(157676362)	42631	38505228

Source: Prepared by researchers.

It is clear from the above table that the single frame before the reduction incurred a loss of (31758) dinars and a total loss of (157676362) dinars for total production, and after the reduction the profit of the single product became (42631) dinars with a total profit of (38505228) dinars.

#### Fourth topic: conclusions and recommendations

##### 4.1 .Conclusions:

1. Activity-Based Budget (ABB) is a quantitative expression of the activities practiced by the economic unit, which reflects the forecast of business or the amount of directions and other financial requirements to achieve strategic goals or to change the plan to improve performance.
2. The activity-based budget (ABB) helps in knowing the capabilities and energies available to the economic unit, achieving the set goals that the economic unit seeks, and finding new ways and methods to achieve competitive advantage by defining the cost leadership strategy
3. Through activity-based budgeting (ABB), the products or services that will be produced or provided are determined, and then the necessary activities are identified. Two steps are taken, namely, the stage of preparing for the preparation of the budget and the stage of preparing the budget.
4. Al-Diwaniyah Tire Factory lacks a mechanism for preparing budgets based on sound scientific and practical foundations, as the accounting system applied in the factory does not meet the requirements of the efficient and effective budgeting process.
5. The use of Activity Based Budgeting (ABB) in Al-Diwaniyah Tire Factory can help in implementing the cost leadership strategy as well as improving profitability with activities necessary for the products or services that have been identified, and finally the resources necessary

to perform the specified activities with the identification of costs associated with them.

##### 4.2 .Recommendations:

1. The necessity of having a financial and cost accounting system in line with the needs of the economic unit for the purposes of planning, control and application of the activity-based budget (ABB).
2. Continuing to follow up on the implementation of the plans set and conducting effective oversight for the purpose of rationalizing the use of available resources, and conducting an evaluation of the comprehensive performance of all completed activities for the purpose of verifying the effectiveness and adequacy of the use of resources because it necessary activities are identified. Two steps are taken, namely, the stage of preparing for the preparation of the budget and the stage of preparing the budget.
3. The use of modern foundations in preparing budgets by following the basis of activities, which requires conducting a comprehensive analysis of the activities implemented in the company and studying them for each of its centers, as well as identifying cost vectors and providing the requirements for that.
4. Finding the necessary programs and supplies that ensure harmony and compatibility between these goals and in a manner that ensures the achievement of all of them through the preparation of budgets.
5. It is necessary to follow the methodology specified in this research by factory of Al-Diwaniyah tries to apply the activity-based budgeting (ABB) in order to implement the cost leadership in addition to improving profitability.

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