

# The Effect of Using Break-Even-Point in Planning, Controlling, and Decision Making in the Industrial Jordanian Companies

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## Abstract

This research study aimed to figure out the effect of using breakeven point in planning, controlling, and in the decision-making process, in the Jordanian industrial companies. This research study shed the light on the reality of the use of the breakeven point in the planning, controlling and decision-making in industrial companies in Jordan. The study sample of the study was formed out of 54 employees in the accounting departments in the Jordanian industrial companies. The study found out that, the most of the Jordanian industrial companies are using break-even point in the planning, controlling and decision-making, and there is a statistical significant relationship between the use of the break-even point and successful planning, control and decision-making in the Jordanian industrial companies. The study has recommended that, companies should use breakeven point as a main tool of decision-making and planning oversight because of its impact, efficiency and accuracy in the rationalization and control decisions.

**Keywords:** Break Even Pint, Decision making, Planning, Controlling.

## Introduction

Financial Information has its vital role in running up today's business. If the three M's (Man, Money, and Material) are the main traditional economic business resources, then information is never less important than these resources. We can say information is the fourth economic business resource. Market analysis for example, is considered now as one of the main methods of having valuable information which can help management in planning, and effective decision making.

Decision making underlies the commonly encountered twofold division of the management process; planning and controlling. Planning means deciding on objectives and the means for their attainment, where controlling means implementation of plans and the use of feedback so that objectives are optimally attained (Needles, Powers, Mills, & Anderson, 1999)

Management accounting has many several uses in the field of planning, controlling, decision making and cost-volume profit analysis. Break-Even-Point is one of the main tools of the cost-

volume profit (CVP) analysis. Break-Even-Point is not an end target by itself, but it is one of the important tools used to measure the profitability of a firm. Break-Even-Point can be defined as the point where total revenue equals total variable and fixed expenses (Garrison, 2012)

The relationship between revenue, cost, and net income is called the CVP analysis. This kind of analysis is important to both internal parties and external parties. Internal parties or management uses this type of analysis to plan for amount of profit required in a certain period of time (Sales Target), or the quantity of production the firm should produce in the future. External parties, such as securities exchange commission requires management to include some financial analysis and discussion about its operations in its annual reports (Horngren, Datar, Rajan, 2014)

Due to great importance of Break-Even-Point in decision making, the core our research study will be about the use of break-Even-Point in planning, controlling, and decision making in the Jordanian industrial companies.

## **2. Study Problem**

Many experienced managers use a break-even analysis or forecast as a primary screening tool for new business ventures. They won't even write a complete business plan unless their break-even forecast shows that their projected sales revenue exceeds their costs. The study problem arises out of the idea that the Jordanian industrial companies may not use the CVP analysis in its planning process which at end may affect the objectives these companies are seeking.

## **3. Study Importance**

Break even is that point in business where a business turns from making a loss to making a profit. The term is usually used to describe a start up firm that is looking to reach a point of profitability after an initial period of loses that are supported by investors. Breakeven point analysis is a very important tool, especially if we are preparing to figure out the volume of sales needed in order to cover total costs, and then planning to make profits.

The importance of this study arises out of the following points:

- 1- The industrial companies have a great importance to the economy, so it's vital
- 2- to use CVP techniques in planning and controlling.
- 3- The results of this research study may be useful to the industrial companies In a way that it can use the findings to improve the planning and controlling process.

## **4. Study Objectives**

This research study aims to highlight the significance of the Break-Even-Point in the following points:

- 1- Determining the optimum level of output.
- 2- Determining the target capacity of a firm to get the benefit of minimum per unit production cost.
- 3- Determining minimum cost for a given level of output.
- 4- Determining selling price for a product

- 5- Establishing the point from where the firm can start paying dividend to shareholders.

## **5. Literature Review**

The information that management accounting gather and analyze is used to support the actions of management. All business managers need accurate and timely information to support pricing, planning, operating, and many other types of decisions. Managers of manufacturing, merchandizing, government, and service organizations all depend on management accounting information. Multidivisional corporations need large amounts of information and more complex accounting and reporting systems than do small business. But small and medium size businesses make use of certain types of financial information as well. The types of data needed to insure efficient operating conditions do not depend entirely on an organization's size. Management accounting information helps organization make better decisions. Such decisions make all organization become more cost-effective and help manufacturing, retail, and service organizations become more profitable (Needles, Powers, Mills & Anderson).

A company's break-even point is the amount of sales or revenues that it must generate in order to equal its expenses (Wikipedia, 2014). In other words, it is the point at which the company neither makes a profit nor suffers a loss. Calculating the break-even point through break-even analysis can provide a powerful quantitative tool for managers. In its simplest form, break-even analysis provides insight into whether or not revenue from a product or service has the ability to cover the relevant costs of production of that product or service. Managers can use this information in making a wide range of business decisions, including setting prices, preparing competitive bids, and applying for loans (Manishranalkar, 2012).

From an economic perspective, breakeven point indicates the quantity of some good at which the decision maker would be indifferent. In other words, managers would be satisfied. At this quantity, the costs and benefits are precisely balanced. Similarly, the managerial concept of break-even analysis seeks to find the quantity of output that just covers all costs so that no loss is generated. Managers can determine the minimum quantity of sales at which the company would avoid a loss in the production of a given good. If a product cannot cover its own costs, it inherently reduces the profitability of the firm. Break-Even-Point helps managers in analyzing: (Slideshare, 2104)

- Impact of new product lunch.
- Impact of purchasing new capital equipment.
- Should one make, buy or lease capital equipment.
- Revenue and cost implications of changing the process of production.
- Impact of changes in price and cost on profit of the firm.

Profitability is the goal of every business owner. But before management can turn a profit, they first have to break even. Spending more money than business is absorbing in order to produce a product or provide a service can quickly bleed a company of its capital. Even if business has a financial cushion large enough to allow it to operate in the red for a period of time, management should at least be aware of the areas in which losses are occurring and have in

place a plan for steering the company into the black. The break-even point is the number that must be reached before an investment starts to generate a positive return. To run the business successfully, it is crucial that management has identified the point at which revenues cover expenditures on each of the products and services offered, as well as on overall operations. Because these break-even points shift as conditions change, break-even analysis should be performed regularly, preferably on a quarterly basis. While there are a number of methods for determining a business's break-even point, one relatively simple approach is to calculate how large the company's contribution margin must be to cover its fixed costs. To get started, add up all the fixed costs the business has to cover regardless of sales volume, such as rent, salaries, debt payments, insurance, and similar overhead expenses. The next step is to calculate the contribution margin on the products or services the firm sells. The contribution margin is a financial metric used to determine the percentage of funds left over from revenues after accounting for the cost of purchasing or producing the goods sold. The contribution margin can be calculated on a per-unit basis or by subtracting variable costs from the sales price. The break-even point can then be calculated by dividing your fixed costs by contribution margin. For a very simple example, assume we have added up expenses and determined that the monthly fixed costs amount to \$50,000. Then, we assume that business consists of purchasing an item at \$3 per unit and selling them at \$10 per unit, the contribution margin will be \$7 per unit, or 70%. When a fixed cost is \$50,000 is divided by contribution margin of 70%, the resulting figure is approximately \$71,429. This means we would have to sell 7,143 units in a given month to break even. If sales dip below 7,143 units per month, the business is losing money, while any sales above this threshold represent profit. When multiple product lines are involved, weighted average of contribution margin should be used.

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{Contribution Margin}}$$

Where: Contribution Margin= Sales Price/Unit – Variable Cost/Unit

There are many other factors that affect the financial health of the business over time, such as projected changes in market conditions. A break-even analysis should, therefore, be seen as a basic tool that can provide a snapshot of where a business stands at a given point in time, which should be used in conjunction with other financial measures. A break-even analysis can, however, provide us with important preliminary information about the status of the business (Moyer, McGuigan, Kretlow, 2005). If the results of the analysis reveal that sales are not sufficient to cover expenses, or that contribution margin is smaller than it should be, there may be action we can take to lower the break-even point. Starting by investigating ways to reduce the cost of purchasing or producing the products or services we sell, or whether there another supplier who would sell us the same or a similar item for \$2.75, instead of \$3? If we make the product ourselves, are there options for manufacturing it less expensively? Or whether there are steps we can take to trim overhead expenses without harming our operations. Finally, should we consider raising prices? Implementing small changes in one or more of these areas could enable the firm to reset business's break-even point, and move the company in the direction of greater profitability (Linwoodinvestment, 2014)

The quality and accuracy of the financial information gathered about market changes and variables analysis of a project, will definitely lead to a sound and accurate investment decision. Pre-market analysis is a necessary and priority step before any application of breakeven point rules or even the visibility study in the first place, and that is due to many environmental effects ( Hammid, 2000).

Finally, management is expected to use resources wisely, operate profitably, pay debts, and abide by laws and regulations. These expectations motivate managers to establish the objectives, goals, and strategic plans of the organization and to guide and control operating, investing, and financing activities to reach those goals. The management process differs from organization to organization, but traditionally management operates in four stages: (Needles, Powers, Mills, & Anderson, 1999)

#### 5.1 Planning:

Planning means setting performance expectations and goals for groups and individuals to channel their efforts toward achieving organizational objectives. It also includes the measures that will be used to determine whether expectations and goals are being met. Involving employees in the planning process help them understand the goals of the organization, what needs to be done, why it needs to be done, and how well it should be done.

#### 5.2 Executing:

Planning alone does not guarantee satisfactory operating results. Management must implement the strategic and operating plans by executing activities, or tasks, in a way that maximizes the use of available resources. Smooth operations require hiring and training of personnel, identifying operating activities, that minimize waste and improve the quality of the products or services.

#### 5.3 Monitoring:

Monitoring means consistently measuring performance and providing ongoing feedback to employees and work groups on their progress toward reaching their goals. Ongoing monitoring provides the opportunity to check how employees are doing and to identify and resolve any problems early.

#### 5.4 Developing:

Developing means increasing the capacity to perform through training, giving assignments that introduce new skills or higher level of responsibility, improving work processes, or other methods. Development efforts can encourage and strengthen good performance and help employees keep up with changes in the workplace.

#### 5.5 Rating:

Rating means evaluating employee or group performance against the elements and standards in an employee's performance plan, summarizing that performance, and assigning a rating of record.

#### 5.6 Rewarding:

Rewarding means providing incentives to and recognition of employees, individually and as members of groups, for their performance and acknowledging their contributions to the agency's mission. There are many ways to acknowledge good performance, from a sincere "Thank You!" for a specific job well done to granting the highest level, agency-specific honors and establishing formal cash incentive and recognition award programs.

## 6. Method

The primary data needed for the study objectives were collected through a survey conducted among Different industrial Jordanian companies. A questionnaire has been designed for this purpose, and it was distributed randomly to the employees taking part in actions and activities on carrying out business in their companies in February 2014, and to different management levels. The number of questionnaires analyzed were (48) valid questionnaires. Resolution data were analyzed using the statistical program SPSS.

Quantitative data were collected using a self-administered questionnaire, in which the employees were asked to state the likelihood (on a 5-point scale: [5] strongly agree; [4] agree; [3] neutral; [2] disagree; [1] strongly disagree), 70 copies of the questionnaire were delivered by hand on the respondents, 54 copies were returned ( percentage of 77% ); out of these 54 copies 48 copies (69%) were valid for analysis.

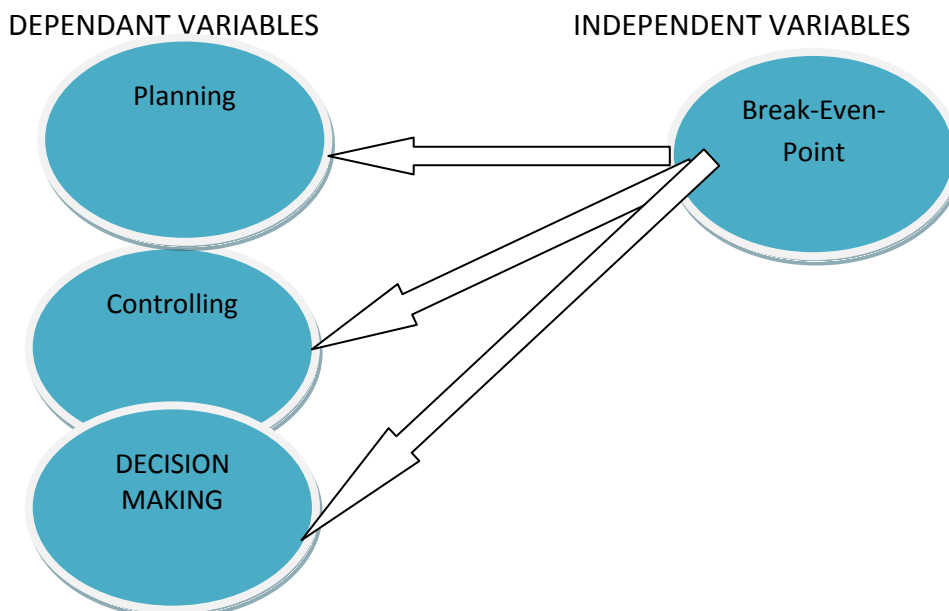
Other Data is collected from secondary sources. Secondary data is collected from articles published by the well-known periodicals, books, and dissertations.

### 6.1: Statistical Analysis:

The Statistical Package for Social Sciences SPSS was applied in analyzing the data received; Statistical Analysis tools include the followings:

1. Descriptive Statistics, mainly frequencies and percentages, were used to analyze sample characteristics according to job, educational level, professional certificates, and experience.
2. Correlation, Inter-correlation, and Path Coefficient were used to analyze and describe study variables from a statistical point.
3. Reliability Test using Cronbach's Alpha was used to test the reliability of the scale.

### 6.2 Research Design (Exhibit-1)



Research design is formed out of Three main dependant elements and one independent element which constitute the research design. The Model in Exhibit-1 shows the effect of Break-Even-Point on planning, controlling, and decision making.

### 6.3 Study Hypothesis

H01: The Jordanian companies do not use Break-Even-Point in planning, controlling, and decision making.

This main hypothesis can be divided into the following sub-hypotheses

- 1: There is no significant statistical relationship between Break-Even-Point and planning in the Jordanian Industrial companies.
- 2: There is no significant statistical relationship between Break-Even-Point and controlling in the Jordanian Industrial companies.
- 3: There is no significant statistical relationship between Break-Even-Point and decision making in the Jordanian Industrial companies

### 6.4 Data Analysis and Findings

#### 6.4.1: Reliability test:

Cronbach's alpha was used to test the internal reliability of the measurement instrument. In this study 0.60 or higher is considered acceptance (Sekrnan, 2003). The Cronbach's Alpha ( $\alpha$ ) is 87.3%, thus establishing the reliability of the survey questionnaire. As the values of alpha are higher than 60%, this indicates that for each measurement of a variable, the items are highly correlated and hence highly consistent.

#### 6.4.2 Sample Characteristics

The respondents were 72.9% male and 27.1% female; most of them were between the age of 25 years and 45 years. Most respondents had average experience more than 5 years. 4.2% of the respondents were having high school certificates, 22.9% were having Diploma certificates, and finally 72.9% were having bachelor degree. Demographic data is shown in Table No.(1).

**Table No. (1) / Demographics Data for the Study**

Variable	Group	Frequencies	%
Sex	Male	35	72.9
	Female	13	27.1
Total		48	100%
Age	Less than 25 years	13	27.1
	From 26 years—35 years	15	31.2
	More than 36 years	20	41.7
Total		48	100%
Professional Certificate	High School Certificate	2	4.2
	Diploma Degree	11	22.9
	bachelor Degree	35	72.9
Total		48	100%
Job Title	Accountant	23	47.9
	Accounting officer	16	33.3
	Head of Accounting Dept	9	18.8



Total		48	100%
Experiences	Less than 5 years	9	18.8
	From 6 years – 10 years	36	75
	More than 11 years – 15 years	3	6.3
	years		
Total		48	100%

**6.4.3 SSPS Results:**

Table (2) shows the Mean, Standard deviation of the questionnaire results:

No.	Table(2): Attributes Standards	A. Means	S. Deviation	sig
1	The firm performs BEP analysis in the planning process for Human Resources acquisition	4.208	0.771	High
2	The firm performs BEP analysis to evaluate Auditing performance	4.104	0.660	High
3	The firm performs BEP analysis in order to show the effect of BEP formula on the calculation results	4.042	0.771	High
4	The firm performs BEP analysis in the planning process for expenditures	4.042	0.771	High
5	The firm performs BEP analysis in the planning process for production	4.000	0.851	High
6	The firm performs BEP analysis in order to show the effect of changes at Variable Cost	3.958	0.849	High
7	The firm performs BEP analysis in order to chose between alternatives	3.938	0.998	High
8	The firm performs BEP analysis in order to make long-term investment decisions	3.917	0.794	High
9	The firm performs BEP analysis planning process in general	3.896	1.036	High
10	The firm performs BEP analysis to show the effect of BEP on price fluctuations	3.875	0.640	High
11	The firm performs BEP analysis to show the	3.813	0.816	High



	effect of BEP on fixed cost			
12	The firm performs BEP analysis to analyze the accounting outcomes	3.792	0.922	High
13	The firm performs BEP analysis in order to control and eliminates accounts manipulation	3.771	0.778	High
14	The firm performs BEP analysis in order to take short-term decisions	3.750	1.082	High
15	The firm performs BEP analysis in order to analyze market trends	3.188	0.571	Moderate
	Total	3.859	0.834	High

Table (2) results show that the Mean of most of the answers is high (higher than 3.5) on likert scale. The last question shows a moderate result of 3.188. The overall results indicate that the Jordanian industrial companies use and perform the BEP analysis in its functions.

#### **6.4.4 Hypothesis Testing & Results:**

Table (3) illustrates sample test results, (One Sample t-test) to examine the main hypothesis, and it's Sub Hypothesis, to test the effect of using BEP on planning, controlling, and decision making

Table (3): Hypothesis	Arithmetic Means	Calculated t	Tabular t	Sig	Result
H01: The Jordanian companies do not use Break-Even-Point in planning, controlling, and decision making	3.781	3.244	1.98	0.002	Reject
Sub:1 There is no significant statistical relationship between Break-Even-Point and planning in the Jordanian Industrial companies.	3.788	2.82	1.98	0.043	Reject
Sub:2 There is no significant statistical relationship between Break-Even-Point and controlling in the Jordanian Industrial companies.	4.291	8.032	1.98	0.000	Reject
Sub:3 There is no significant statistical relationship between	3.833	2.883	1.98	0.006	Reject

Break-Even-Point and decision making in the Jordanian Industrial companies					
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It is noticed from Table (3) that the value of (t) calculated, concerning (H01) hypothesis equals (3.244), and the level of significance is (0.002), which is higher than tabulated (t) which equals (1.98), as the value of (t) calculated is higher than tabulated (t), we reject H0 hypothesis, which means that, The Jordanian companies are using Break-Even-Point in planning, controlling, and decision making.

Table (3), also shows that, the value of (t) calculated, concerning first sub hypothesis equals (2.82), and the level of significance is (0.043), which is higher than tabulated (t) which equals (1.98) means that, There is a significant statistical relationship between Break-Even-Point and planning in the Jordanian Industrial companies.

Table (3), also shows that, the value of (t) calculated, concerning second sub hypothesis equals (8.032), and the level of significance is (0.000), which is higher than tabulated (t) which equals (1.98), as the value of (t) calculated is higher than tabulated (t), we reject H0 hypothesis, which means that, There is a significant statistical relationship between Break-Even-Point and controlling in the Jordanian Industrial companies.

Table (3), also shows that, the value of (t) calculated, concerning third sub hypothesis equals (2.883), and the level of significance is (0.006), which is higher than tabulated (t) which equals (1.98), as the value of (t) calculated is higher than tabulated (t), we reject H0 hypothesis, which means that, There is a significant statistical relationship between Break-Even-Point and decision making in the Jordanian Industrial companies.

## 6.5 Conclusions & Recommendations

### 6.5.1 Conclusions

The Jordanian Industrial companies are using Break-Even-Point in planning, controlling, and decision making. The companies are also performing BEP analysis in the planning process for Human Resources acquisition, also in the planning process for expenditures, Production, and in evaluating auditing performance. The Jordanian industrial companies are performing Break-Even-Point analysis in deciding between alternatives, to make long-term and short-term decisions. The outcomes also show that, these companies use the BEP analysis in controlling accounts and eliminating manipulation.

### 6.5.2 Recommendations

According to the study conclusions the researchers recommend the following:

- 1- The Jordanian industrial companies should also perform market analysis in addition to BEP analysis, so as to have additional information useful in decision making.
- 2- The companies should extend the knowledge of BEP outcomes and its uses to employees in a wider range in order to have maximum benefit out of it.
- 3- To generalize the outcomes of the study to all types of companies.
- 4- We recommend making similar research on this topic covering service and merchandising sectors.

## 7. References

- Garrison, Ray; Noreen, Eric; Brewer, Peter. (2011). "Managerial Accounting" 14<sup>th</sup> Ed. McGraw-Hill Irwin,
- Hammid, Abdul mutaleb. (2000). "The visibility study for investment decision Making" Alexandria University.
- Horngren, Charels T. Datar, Srikant M. Rajan, Madhav V. (2014). "Cost Accounting" 14<sup>th</sup> Ed. Pearson Education Limited.
- Linwoodinvestment. (2014). "Break-Even-Point" Accessed 25 Feb 2014. Available: [www.Linwoodinvestment.com](http://www.Linwoodinvestment.com)
- Manishranalkar. (2014). "Break-Even-Point" Accessed 25 Feb 2014. Available: [www.studymode.com](http://www.studymode.com).
- Moyer, McGuigan, Kretlow. (2005), "Contemporary Financial Management", 10th, Tenth Edition. SouthWestern Publishers,
- Needles, Belverd E, Powers, Marian; Mills, Sherry K.; & Anderson, Henry R. (1999). "Principles of Accounting" 7<sup>th</sup> ed. Houghton Mifflin.
- Slideshare. (2014). "Break-Even-Point" Accessed 27 Feb 2014. Available: [www.slideshare.net](http://www.slideshare.net)
- Uma, Sekrran. (2003). *Research Method for Business: A Skill Building Approach*. 7th Edition, John Wiley and Sons, New York.
- Wikipedia org. (2014). (*Definition of BREAK-EVEN-POINT*) Accessed 20 Feb 2014. Available: <http://www.Wikipedia.org>.