

Break-even analysis

[Business](#), [Management](#)



Managers must know how different costs behave as the volume of sales expands or contracts. The study of the interrelationships of sales, costs and net income is called cost-volume-profit analysis. It is a key factor in many planning decisions. The essence of cost-volume profit analysis is gaining an understanding of how costs and profits change in response to changes in volume. This study is often called break-even-point analysis. This is a mistake because break-even-point, the point of zero net income is just a part of the cost-volume-profit concept and is often only incidental to the planning decision at hand.

However, it is often the starting point of the analysis and provides insights into the possible dangers of certain courses of action (Peralta, J. 1979). The following situation will be used as a basis for discussion and to demonstrate the techniques of and the need for cost-volume-profit analysis. We shall assume that any cost may be classified as either fixed or variable. Fixed costs are costs, which remain constant in total, within the current period, regardless of changes in the level or volume of activity.

Variable costs are those, which are expected to fluctuate, in total, in proportion to sales, production or other measures of activity. The O-BUSH Company operates a sandwich stand at the Osama Memorial Stadium selling hotdog sandwiches during game days. The company is now in the process of negotiating for a lease of a sandwich stand at the Al Qaeda Coliseum during NBA games. The company has determined that the following costs and prices will probably characterize the new stand: Selling price per sandwich \$2.00 100% Variable expenses per sandwich:

Hotdog \$ 0. 75 Sandwich bread . 30 Mustard/catsup . 05 Commission to the coliseum . 10 1. 20 60% Contribution Margin . 80 40% Fixed Expenses per game day: Rental of stand \$500 Wages for 8 employees at \$37. 50 300 Other fixed expense 200

Total \$1, 000 Should the company enter into a lease agreement with Al Qaeda? O-BUSH will have to answer certain questions before a decision can be made. Break-Even Point Computation Question: What would be the break-even-point of the company in terms of numbers of units (sandwiches) sold and dollar of sales? At break-even point, revenue is precisely equal to costs, no profits are realized, and no losses are incurred. For the purpose of this illustration, the unit contribution approach is used.

The approach is based on the fact that every unit sold generates or provides a certain amount of contribution margin that goes toward the covering of the fixed costs. The contribution margin is the excess of sales price over the variable expenses pertaining to the unit in question: Unit sales price \$2. 00 Unit variable expenses 1. 20 Unit contribution margin to fixed Expenses and net profit \$. 80 To find the number of units must be sold to break-even, total fixed cost must be divided by unit contribution margin.

Thus, \$1, 000 divided by \$0. 80 is 1, 250 sandwiches. If only the percentage relationship between variable expenses and sales is known, the formula can still be used to compute the break-even point in dollar sales. Sales price 100% Variable expenses 60% Contribution margin 40% Total Fixed Cost divided by contribution margin ratio equals break-even point in dollar sales. Thus, \$1, 000 divided by 40% is \$2, 500. The company must sell more than

1, 250 sandwiches in order to have a profit. Reference Peralta, J. (1979).
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