IDAROTUNA Jurnal of Administrative Science

E-ISSN : 2798-0413, P-ISSN : 2798-0111

Implementation of Break Event Point Analysis and Margin of Safety in Profit Planning

Naning Fatmawatie[1]

[1] Institut Agama Islam Negeri Kediri, Indonesia; naningfat@gmail.com

Abstract: The break event point is a certain amount of production that the company must achieve to reach the break-even point (no profit and / no loss). Margin of safety is the amount of production required so that the company does not suffer losses. The determination of the margin of safety is closely related to the break event point, where the margin of safety is at one level above the break event point in terms of determining the minimum sales required. Both of these are some of the instruments that can be used to plan profits. The purpose of this study was to determine the application of break event point analysis at PT. Beton Jaya Manunggal, knowing the application of margin of safety analysis and to determine profit planning at PT. Jaya Manunggal Concrete. This study uses a non-statistical quantitative approach. The data used in this study is secondary data through PT. Manunggal Jaya Concrete in 2014-2018. The analysis method uses the least square method to plan the net profit of PT. Beton Jaya Manunggal in 2019 with reference to the net sales plan. The result of this research is the break event point of PT. Beton Jaya Manunggal in 2014 – 2018 showed a positive trend with the break event point being above the current year's production during 2015 – 2016. Margin of safety PT. Beton Jaya Manunggal in 2014 – 2018 showed an upward trend with negative margins throughout 2015 – 2016. Profit planning using least squares with reference to net sales planning is quite accurate considering that there is only a difference of 2% above net sales recorded in the 2019 financial statements. Net profit PT. Beton Jaya Manunggal was recorded in 2019 at 1.3 billion Rupiah so that profit planning was not carried out based on the consideration that the recorded profit was less or showed a downward trend when compared to the net profit trend in 2014 – 2018.

Keywords : Break, Event, Point, Margin, of Safety, Planning, Profit.

IDAROTUNA: Jurnal Adminstrative Science
Vol 2 No 2 November 2021
https://doi.org/10.54471/idarotuna.v2i2.20

Received: September 30, 2021
Accepted: October 17, 2021
Published: November 29, 2021

Publisher's Note: Program Study Office Adminstrative stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

1. Introduction

The industrial sector plays a key role as an engine of development because the industrial sector has several advantages over other sectors because of the very large capitalization value embedded, the ability to absorb a large workforce, as well as the ability to create value added from each input or basic material used. processed. In developing countries, the role of the industrial sector also shows a higher contribution.

The existence of industry in Indonesia in addition to the country's economic growth also has the initial goal of establishing the industry itself, namely achieving profit targets for the industry. Profit achievement can be realized if the industry also plans to target sales volume. Business activities have a goal that always leads to the level of profit so that it can be used as a source of funds for survival in meeting the needs of the industry itself. When the profit received has reached the target, of course the development of the industry is getting stronger with fairly tight competition among other industries, this can allow the industry to become a market leader and expand or expand the industry.Conversely, if the industry does not achieve the desired profit, then the industry will experience losses.

Factors that affect profit are the selling price of the product, operating costs, and sales volume. Operating costs determine the selling price to affect sales volume. Sales volume affects production volume and production volume affects costs incurred. These three factors are interrelated with each other. Therefore, in a business it is necessary to have a good plan regarding the relationship between costs, volumes and profits because these three elements have a very important role in achieving business success.

One of the cost-volume-profit analysis techniques that can be used is break even point analysis. Break even point analysis is a tool or technique used by management to determine a certain level of sales in a business so that it does not experience a profit and does not experience a loss (Sigit Suhardi, 2002). Break-even is a condition in which a business has the same total income as the total cost (Supriyono, 2002). A break-even state occurs when the sales of a business are only sufficient to cover the costs incurred by the business when producing a product. The costs in the break even point analysis consist of fixed costs and variable costs. These costs are costs that are used as the basis for determining the break-even point of a business.

Through break-even analysis we will be able to find out how the relationship between fixed costs, variable costs, the desired level of profit, and the volume of activity (sales or production). Based on the pattern of behavior, costs are grouped into fixed costs and variable costs. Fixed costs are costs that are fixed or do not change over a certain period of time, regardless of the company's sales or production, such as rent and insurance costs. Meanwhile, variable costs are costs that in a certain time range and the amount varies proportionally, such as direct wages and raw material costs. If an industry/organization only has variable costs, then there will be no break event point problem in that industry/organization.

By analyzing the break event point, management will obtain information about the Margin of safety (safety margin). Understanding the level of security or Margin of safety is the relationship or difference between certain sales (according to the budget) with sales at the break-even point. That is, a safe limit used to find out how much sales are budgeted to anticipate a decline in sales so as not to experience losses. (Kasmier, 2017).

One of the plans made by management is profit planning. Profit planning includes the steps that will be taken to achieve the desired profit target in a business. Therefore, profit planning is influenced by sales planning and cost planning (S. Munawir, 2007). Break event point analysis provides management with information on the relationship between costs, volumes and profits, making it easier for them to analyze the factors that influence the achievement of operating profits in future.

PT. Betonjaya Manunggal, Tbk or is one of the companies engaged in the plain concrete iron industry which is listed on the Indonesia Stock Exchange (IDX). The reason the author chose PT. Betonjaya Manunggal, Tbk because BTON has been registered with DES since 2007. That year was the year when DES was first issued. From 2007 until now BTON has always been registered with DES.

Table 1

Decision of the Board of Commissioners of the Financial Services Authority About Sharia Securities List Basic and Chemical Industry

No.	Share Code Saham	Name ogf Securities Issuer
1.	ADMG	PT Polychem Indonesia Tbk.
2.	AGII	PT Aneka Gas Industri Tbk.
3.	AKPI	PT Argha Karya Prima Industry Tbk.
4.	ALDO	PT Alkindo Naratama Tbk.
5.	ALKA	PT Alakasa Industrindo Tbk.
6.	AMFG	PT Asahimas Flat Glass Tbk.
7.	APLI	PT Asiaplast Industries Tbk.
8.	ARNA	PT Arwana Citramulia Tbk.
9.	BRNA	PT Berlina Tbk.
10.	BRPT	PT Barito Pacific Tbk.
11.	BTON	PT Betonjaya Manunggal Tbk.

Sources: http://www.ojk.go.id.

DES is a collection of securities (securities) that do not conflict with sharia principles in the capital market. DES is issued by BAPEPAM and LK in accordance with applicable regulations and is reviewed every six months in May and November. This research is important because BTON has the ability to generate unstable profits, while the operating profit position in 2014 was Rp. 7,516,841,974 decreased to Rp. 6,279,539,648 in 2015, and dropped drastically to Rp. -9,981,713,272 in 2016. Then in 2017, BTON's profit increased by Rp. 12,992,651,075, and continued to increase in 2018 by Rp. 23,188,970,072. To find out the amount of profit that can be made by PT. Betonjaya Manunggal, Tbk. can be seen from the ratio of Operating Profit Margin (OPM) of the company. OPM is the ratio of each net sales proceeds after deducting all other expenses and expenses except interest and taxes or net income generated from each rupiah of sales. Operating profit margin measures the profit generated purely from the company's operations without looking at the financial burden (interest) and the burden from the government tax (earnings before interest and tax / EBIT).

2. Research Methods

This type of research is descriptive with a quantitative approach. Descriptive research aims to describe what is currently happening in which there are attempts to describe, record, analyze and interrogate conditions that are currently happening or exist (Mardialis, 2006). Operational definition Break event point analysis is a method used by company leaders to find out or to plan on the volume of production or sales volume whether the company in question does not make a profit or does not suffer

a loss (Jumingan, 2002). While the margin of safety is the relationship between budgeted sales volume and sales volume at the break-even point (Jumingan, 2002). For profit planning (profit planning) is the development of a plan of an operating plan in order to achieve the goals and objectives of the company. budgeted finance The population in this study is the financial statements of PT Betonjaya Manunggal Tbk which are listed on the Indonesia Stock Exchange (IDX) or the Indonesia Stock Exchange (IDX). The sampling technique used is purposive sampling. The sample in this research is the financial statements of PT Betonjaya Manunggal, Tbk for 2014, 2015, 2016, 2017, 2018.

3. Research Results and Discussion

Condition of Break Event Point (BEP) of PT. Beton Jaya Manunggal

Table 2

Year	**2014**	**2015**	**2016**	**2017**	**2018**
Production	14.896	12.837	11.944	11.843	13.593
Net Sales	96.008*	67.679*	62.760*	88.011*	117.489*
Net Profit	7,703**	5,822**	-5,571**	11,106**	28,516**
	Fixed Cost		**Variable Cost/ Unit**		
High Low Point	50.606.746.996		2.404.754		**Rupiah**

Based on the table above, it is known that the Break Event Point in the PT. Beton Jaya Manunggal in 2014 amounted to 12,525 units, which means that sales of 12,525 units were break-even sales. The next 2 years, namely in 2015 and 2016 there was an increase in BEP at the level of 17,649 units and 17,758 units, which was allegedly caused by a decrease in production volume followed by an increase in production costs. This increase in BEP indicates that in 2015 – 2016 net sales of 17,000 units are needed for the company to break even. Furthermore, in 2017 - 2018 there was a decrease in BEP at the level of 10,068 units and 8,112 units throughout 2017 - 2018.

The decrease in the BEP value indicates that in 2017 – 2018 the company needs fewer sales to break even. This shows that in that year, the company's efficiency and profits were at an optimal point throughout 2014 – 2018. The lowest BEP in 2018 was also supported by data on the highest net income in 2018, which can be seen based on this in 2018 the decline in BEP make the company's profit level higher Margin of Safety (MOS) condition of PT. Beton Jaya Manunggal.

Margin of Safety (MOS) is the level of break-even point of sales required so that the company does not suffer losses. The margin of safety is formulated by comparing the targeted sales reduction with the rupiah break event point with the targeted sales. The margin of safety ratio is important to use in production planning so that the company knows how much production is needed to achieve a safe ratio.

The margin of safety ratio is assumed that the higher the ratio, the higher the sales effort needed to break even where the company does not suffer losses, and vice versa. On the other hand, a high margin of safety can be interpreted as the efficiency of selling a product on realized sales.

This study found the results of the calculation of the Margin of Safety as follows:

Table 3 Margin of Safety PT. Beton Manunggal Jaya

Year	2014	2015	2016	2017	2018
Production	14.896	12.837	11.944	11.843	13.593
BEP Unit	12.525	17.649	17.758	10.068	8.112
Margin of Safety	16%	-37%	-47%	15%	40%

Satuan Margin of Safety (%)

Source: Financial Report Data of PT. Beton Jaya Manunggal, Tbk which has been processed.

Based on the table above, it is known that in 2015-2016 the Margin of Safety was recorded at minus which means realized sales were lower than the Break Event Point. This shows that in that year, net sales did not break even which caused losses to the company. Data on net profit of PT. Beton Jaya Manunggal in that year showed a very sharp correction where, in 2016 the profit was recorded showing a minus number which means the company suffered a loss. In line with this, in 2016 the margin of safety showed the lowest figure at -47%. Furthermore, in 2017 - 2018 there was a significant increase in the margin of safety compared to 2016, which was the highest during 2014 - 2018 at the level of 40% in 2018. This shows sales efficiency or optimal sales occur.

Profit Planning Based on Break Event Point (BEP) and Margin of Safety (MOS) at PT. Beton Jaya Manunggal in 2019. Profit planning is the steps taken by management as a reference to achieve a certain amount of profit in a production cycle. Profit planning, in the analysis is influenced by two factors, namely sales and costs. (Munawir, 2007). Profit planning used at PT. Beton Jaya Manunggal in this study will focus on the results of the calculation of break even points and margin of safety where the variables outside the two variables are considered constant (carteis paribus) to estimate profits in 2019, which are as follows:

Table 4 Summary of PT. Manunggal Jaya Concrete 2014 – 2018

Year	2014	2015	2016	2017	2018
Sales Netto	96.008*	67.679*	62.760*	88.011*	117.489*
Production	14.896	12.837	11.944	11.843	13.593
BEP Unit	12.525	17.649	17.758	10.068	8.112
Margin of Safety	16%	-37%	-47%	15%	40%

Satuan Margin of Safety (%)

Source: Financial Report Data of PT. Beton Jaya Manunggal, Tbk which has been processed

Based on the data above, the estimated Net Sales, Unit BEP and Margin of Safety using Least Square for 2019 forecasting are as follows: To facilitate calculations, net sales are symbolized by Y1, BEP Units by Y2 and Margin of Safety by Y3, with each numerator as shown in the following table:

Table 5 Net Sales Planning, Unit BEP and MoS 2019

No	Year	y_1	y_2	y_3	x	x^2	xy_1	xy_2	xy_3
1	2014	96.008*	12.525	0,16	-2	4	-192.016	-25.050	-0,32
2	2015	67.679*	17.649	-0,37	-1	1	-67.679	-17.649	0,37
3	2016	62.760*	17.759	-0,47	0	0	0	0	0
4	2017	88.011*	10.068	0,15	1	1	88.011	10.068	0,15
5	2018	117.489*	8.112	0,40	2	4	234.978	16.224	0,40
Total	5	431.947	66.113	-0,13	0	10	63.294	-16.407	0,6

*In million rupiah

Source: Data that has been processed by researchers

Based on the table above, we can estimate Net Sales (Y1), BEP Unit (Y2) and Margin of Safety (Y3) in 2019 as follows:

$$Y=a+bx$$

Where,

a1 = ∑y1/ ∑Year

a2 = ∑y2/ ∑Year

a3 = ∑y3/ ∑Year

b1 = ∑xy1 / ∑x2

b2 = ∑xy2 / ∑x2

b3 = ∑xy3 / ∑x2

So that,

a1 = 86.389

a2 = 13.223

a3 = -0,026

b1 = 6.389

b2 = -1.640

b3 = 0,006

So,

$$Y\_1=a\_1+b\_1\ x$$

So that,

$$Y\_1=86.389+6.389(6)$$

So,

$$Y\_1=124.723$$

Based on the foregoing, net sales in 2019 are estimated at 124.723 billion Rupiah.

Furthermore,

$$Y\_2=a\_2+b\_2\ x$$

So that,

$$Y\_2=13.223+(-1.640)(6)$$

So,

$$Y\_2=11.583$$

Based on the calculation above, the BEP Unit in 2019 is estimated at 13,213 Tons.

Then,

$$Y\_3=a\_3+b\_3\ x$$

So that,

$$Y\_3=-0,026+0,006(6)$$

So,

$$Y\_3=0,01$$

Based on the calculation above, the Margin of Safety in 2019 is estimated at 0.0296 from the BEP Unit. Where, as big as

$$\text{Margin of Safety (Unit)}=1+\text{MoS (BEP Unit)}$$

So that,

$$\text{Margin of Safety (Unit)}=1+0,1\ (11.583)$$

So,

Margin of Safety (Unit)=11.699

Based on the above calculation, the Margin of Safety (Unit) is 11,699 Tons in 2019. It can be seen that in 2019 there will be an increase in net sales recorded with an estimate of 124.723 Billion Rupiah with a BEP Unit of 11,583 Units in 2019 and a Margin of Safety 11,699 Units.

Financial Statements of PT. Beton Jaya Manunggal in 2019

Based on data from the annual report of PT. Beton Jaya Manunggal in 2019 can be seen several points as follows:

1. Net Sales recorded 122,320 Million Rupiah (122,320 Billion Rupiah).
2. Production of 12,767 Tons.
3. Net profit recorded 1.3 billion Rupiah.

4. Theoretical Basis

4.1 Profit Planning

Profit planning is the development of a plan of an operating plan in order to achieve the goals and objectives of the company. Profit is important in planning because the main goal of a plan is satisfactory profit. A budget is a plan that is stated financially and quantitatively. The profit plan of a company consists of a detailed operating budget and budgeted financial statements. (Carter K. Wiliam, 2019)

4.2 Break Event Point Analysis

Break Event Point analysis is a method used by company leaders to find out or to plan on the volume of production or sales volume whether the company in question does not make a profit or does not suffer a loss. By knowing the break-even point, it is possible to plan the levels of production volume or sales volume that will bring profits to the company concerned. In

order to avoid losses, the company must be able to work on the number of sales at the break-even point. If the sales volume does not reach the break-even point, it means that the company will suffer a loss (Jumingan, 2006).

4.3 The Role of Break Even Point on Profit Earning

Break Event Point analysis can be used as a guide in the future if there are influences or changes that will appear on the size of the profit. The purpose of the break even point analysis in general can be said to present and provide a clearer picture of the close relationship between the three dependent variables, namely costs, sales volume and profit. Furthermore, it can make it easier for the leadership of the company/organization to see how the changes in the factors that affect profits by means of a concise presentation so that the leadership of the company/organization can be assisted in making decisions. So, break even point analysis is one of the means for management in determining the profit of the company/organization.

Break even point analysis also provides an advantage for management to clearly assess profit planning and provide information about various levels of sales volume and their relationship to the possibility of making profits according to the level of sales that occur. The break event point analysis technique provides the basis for the relationship between various variables to determine the company's activities in a financial planning process in achieving the specified profit target (Muchamad Muslih, 2003)

4.4 Margin of Safety

Margin of Safety is the relationship between budgeted sales volume and sales volume at the break-even point. If the sales volume at the break-even point is known, and then linked to the budgeted sales, it will be possible to know the safety limit,

namely how much the sales volume may decrease as long as the company does not suffer losses. The difference between the budgeted sales volume or a certain level of sales with the sales volume at the break-even point is the Margin of Safety.

5. Conclusion

Based on the research findings above, the following conclusions were found:

1. Condition of Break Event Point PT. Manunggal Jaya Concrete during 2014 – 2018 showed a downward trend with an increase in BEP in 2015 – 2016.
2. Margin of Safety condition of PT. Beton Jaya Manunggal during 2014 – 2018 showed an upward trend with the highest Margin of Safety value in 2018 which was 40% of the BEP Unit.
3. BEP Units and Margin of Safety Units are no more than production in 2019 which is at the level of 11 Thousand Tons < Production is recorded at 12,767 Tons. The use of BEP Unit and Margin of Safety is relevant as a reference for profit planning in 2019 by considering net sales planning for that year assuming the Net Sales Planning variable using Least Square is quite valid with an error range of 2%, which is 2.403 higher than recorded net sales. . Based on the net profit recorded in 2019 PT. Beton Manunggal Jaya recorded a net profit of 1.3 billion. A decrease in net profit in 2019 compared to 2018 excluding research variables which were assumed to be constant (carteis paribus). Thus, the profit estimation is not carried out by considering that the financial statements have been published and the net income data does not support the upward trend in net income.

Bibliography

Agustina, Linda. (2012). Pengaruh Karakteristik Perusahaan Terhadap Pengungkapan Laporan Tahunan. *Jurnal Dinamika Akuntansi* ISSN : 2085 4277 Vol. 4 No. 1 pp 55-63.

Ariyanti, Retno, Sri Mangesti Rahayu Achmad Husaini. (2014). Analisis Break Even Point Sebagai Dasar Pengambilan Keputusan Manajemen Terhadap Perencanaan Volume Penjualan Dan Laba. *Jurnal Analisis Bisnis* 11(1). universitas Brawijaya. Malang.

Bungin Burhan. (2005). *Metode Penelitian Kuantitatif*. Jakarta: Kencana.

Bungin, Burhan. (2001). *Metodologi Penelitian Sosial*. Surabaya: Airlangga University Press.

Choiriyah,Vivin Ulfathu, Moch. Dzulkirom AR, Raden Rustam Hidayat. (2016). Analisis Break Even Point Sebagai Alat Perencanaan Penjualan Pada Tingkat Laba Yang Diharapkan. *Jurnal Administrasi Bisnis* 35(1). Universitas Brawijaya. Malang

Dr. Kasmir. (2013). *Analisis Laporan Keuangan*. Jakarta: Rajawali Pers.

H. Yamin S dan Kurniawan. (2009). *SPSS Complete: Teknik Analisis Statistik Terlengkap dengan Software SPSS*. Jakarta: Salemba Infotek.

Harmono (2017). *Manajemen Keuangan*. Jakarta : Bumi Aksara.

Kasmir. (2010). *Pengantar Manajemen Keuangan*. Jakarta: Kencana.

Kasmir. (2017). *Pengantar Manajemen Keuangan*. Jakarta : Kencana.

Krismiaji. Sistem Informasi Akuntansi. Yogyakarta: UPP AMPYKPN.

Kusumawati Zaidah. (2005). *Menghitung Laba Perusahaan: Aplikasi Akuntansi Syariah*. Yogyakarta: Magistra Insania Press.

Kuswadi. (2002). *Meningkatkan Laba Melalui Pendekatan Akuntansi Keuangan dan Akuntansi Biaya.* Jakarta: PT Elex Media Komputindo. 2005.

Lincolin Soeratno dan Arsyad. (2003). *Metodologi Penelitian Untuk Ekonomi*. Jakarta: UPP AMP UKPN.

Mulyadi. (2001). *Akuntansi Manajemen*. Jakarta: Salemba Empat.

Munawir S. (2002). *Analisis Laporan Keuangan*. Yogyakarta: Liberty.

Muslich Muhammad. (2003). *Manajemen Keuangan Modern Analisis Perencanaan dan Kebikjaksanaan*. Jakarta: PT Bumi Aksara.

Ponomban, Christine Patricia. (2013). Analisis break even point sebagai alat

perencanaan laba pada PT. Tropica Cocoprima. *Jurnal EMBA* 1: 1.250-1.261.

Purba Dermawan Sjahrial dan Djahotman. (2001). *Akuntansi Manajemen*. Jakarta: Mitra Wacana Media.

R.A. Supriyono. (2000). *Akuntansi Biaya Perencanaan Pengendalian Biaya Serta Pembuatan Keputusan.* Yogyakarta: BPFE.

Riyanto. Bambang. (2001). *Dasar-Dasar Pembelanjaan Perusahaan*. Yogyakarta: BPFE.

Sjahrial. (2012). *Dermawan Pengantar Manajemen Keuangan*. Jakarta: Mitra Wacana Media.

Supriyono. (2002). *Akuntansi Biaya: Perencanaan dan Pengendalian Biaya, serta pembuatan keputusan.* Yogyakarta: Liberty Yogyakarta.

Usry Carter, William K. and Milton F. (2002). *Cost Accounting*. Jakarta: Krista, Salemba Empat.

Wijaya Said Kelana Asnawi dan Chandra. (2006). *Metodologi Penelitian Keuangan: Prosedur, Ide dan Kontrol cet. 1*. Yogyakarta: Graha Ilmu.

Wijayanti, Suci Mulya. (2013). Analisis Break Even Point Sebagai Salah Satu Alat Perecanaan Penjualan dan Laba. *Jurnal Administrasi Bisnis* 1(1). Universitas Brawijaya. Malang