

CHAPTER IV

PRACTICE IN MANAGING NO PROFIT AND NO LOSS ANALYSIS

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4.1. INTRODUCTION

In general practice, in managing no profit and no loss calculation is done with Break-even analysis, which is a technique widely used by Production Management and Management Accounting. It is based on variable cost (costs that change when the production changes), fixed cost (costs are not directly related to the volume of production) and sales revenue. Total variable costs and fixed costs are compared with sales revenue in order to determine the level of sales volume, sales value or production at which the business makes neither profit nor loss is called as "Break-Even Point (BEP)"¹. In this Chapter Break-Even Recovery, Cut Off Recovery, Break-Even Sugar Production (in Qtls.), Break –Even Cane Crushing (in MT) and Break-Even Sales (Revenue) are considered for analysis.

4.2. ANALYTICAL FRAME WORK

The Break-Even Point is calculated from the formula of ‘Total Revenue (Income) minus Variable Cost divided by Fixed Cost (Total Cost)’. Particularly in this study instead of Break-even point, Break-even analysis is taken with different formula to compare the performance of each running Co-operative Sugar Mill in Tamil Nadu. In Break-even analysis for the selected Co-operative Sugar Mills of the study, the following formula has been used. And this Break-even analysis is a measurement for the performance of these Co-operative Sugar Mills and it is also a powerful tool that forecast the probability of a Co-operative Sugar Mills future production strategies.

$$1 \quad \text{Break-Even Recovery} = \frac{\text{Variable Cost per M.T of cane} + \text{Fixed Cost per M.T of cane}}{\text{Selling price per Qtl of Sugar}}$$

$$2 \quad \text{Cut Off Recovery} = \frac{\text{Variable Cost per M.T of cane}}{\text{Selling price per Qtl of Sugar}}$$

$$3 \quad \text{Break-Even Sugar Production (in Qtls)} = \frac{\text{Total Fixed Cost}}{\text{Contribution per Qtl of Sugar}}$$

Break-Even Sugar Production

$$\text{Break-Even Cane Crushing (in MT)} = \frac{\text{Total Fixed Cost (Rs in Lakhs)}}{\text{Estimated (Budgeted) Recovery}}$$

$$\text{Break-Even Sales Value (Rs in Lakhs)} = \frac{\text{Total Fixed Cost (Rs in Lakhs)}}{\text{Contribution per Qtl of Sugar}} \times \text{Selling price per Qtl of Sugar}$$

Finally overall abstract of Break-Even Recovery, Cut off Recovery, Break-Even Sugar Production, Break-Even Sales are calculated based on the Mean, Standard Deviation and Co-efficient of Variance of the variables. Based on these calculated values the trend in recovery of sugar is analyzed, observed and commented.

4.3 BREAK-EVEN ANALYSIS IN CO-OPERATIVE SUGAR INDUSTRIES IN TAMIL NADU

In practice Break-Even Recovery of sugar Percentage analysis is taken in Sugar Industries which is entirely different from the Break-Even analysis. In order to analyze and observe this Break-Even Recovery of sugar Percentage Break-Even Recovery, Cut Off Recovery, Break-Even Sugar Production, Break-Even Sales are calculated based on this calculated values the trend in recovery of sugar is analyzed, observed and commented.

In Sugar Industry the Raw Material that is sugar cane alone comprise of 70 to 75 % of production Cost. Hence the performance of every sugar industry is measured on the basis of Recovery percentage, where Recovery percentage is calculated by sugar production (net sugar made) divided by sugar cane crushed. In this Circumstance any sugar industry that has higher production, which reflects higher recovery, the image of particular sugar mill is the highest among other sugar mills. Hence in sugar industry, in addition to the usual Break-Even analysis, Break-Even Recovery and Cut off Recovery are calculated to compare their operating performance. In this calculation, first calculate the Variable cost per Metric Ton of Cane, Fixed cost per Metric Ton of Cane and Sales value per Quintal of sugar say (unit selling price or rate) and then calculate Break-Even Recovery and Cut off Recovery. In which Variable cost per MT of Cane = Total Variable cost divided by total cane crushed, Fixed cost per MT of Cane = Total Fixed cost divided by total cane crushed and Unit selling price per Quintal of sugar = Total sales value divided by total sales quantity.

A sugar Mill's Production is equal to Break-even Recovery which tells us the particular sugar Mill's sales value or turnover is equal to total cost and there is no loss or no profit earned by that

particular sugar mill during the particular period. When its production is over and above the Break-Even Recovery, then it is concluded that the particular sugar mill has earned profit during the particular period. The management of sugar mill is to take effective steps to improve recovery on par with Break-even Recovery. It is based on the cost trend of raw material that is sugarcane. The sugar cane price is fixed by Government of India based on previous year's average recovery % of the particular Sugar Mill. Hence every sugar mill takes effective steps to improve 's average recovery% not below the basic recovery %, for sugarcane price fixation by Government of India (now 9.5%). When sugar mill's production is equal to cut off recovery, it indicates that the particular sugar mill's sales value is equal to cover only the variable cost.

In this study, the Break-even analysis is calculated for a period of ten years that is. from 2002-03 to 2011-12, for all the Fifteen Running Co-operative Sugar Mills in Tamil Nadu .Hence data are split up in five Tables comprising of Analysis of Actual Recovery, Break-Even Recovery and Cut Off Recovery in Table 4.1, Analysis of Break-Even Sugar Production in Table 4.2, Analysis of Break-Even Volume of Sales(Revenue) in Table 4.3. And Analysis for Break-Even Cane Crushed in Table 4.4.along with over all abstract for the Ten Years Period wide Table 4.5.

4.3.1 Break- Even Recovery and Cut off Recovery

The Break-Even Recovery indicates that a Co-operative Sugar Mill earned neither Profit nor loss. In other words if a Co-operative Sugar Mill has achieved this Break-Even Recovery, then it has no loss or no profit .But in Cut-off Recovery only Variable cost are covered from its revenue. In Table 4.1 Actual Recovery, Break-Even Recovery, Cut off Recovery for the all the Fifteen Running Co-operative Sugar Mills in Tamil Nadu are presented.

TABLE 4.1

Statement of Actual Recovery, Break Even Recovery, Cut Off Recovery (Combined)

TABLE 4.1 Statement of Actual Recovery, Break Even Recovery, Cut Off Recovery															
	ACSM	AMCSM	SCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM
2002-03	Year Average Recovery			9.95											
1. Actual Recovery	10.28	10.74	10.58	9.53	11.35	9.85	10.03	10.53	9.72	8.92	8.52	9.18	9.16	10.97	9.94
2. Break Even Recovery (%)	13.67	15.03	11.29	15.30	13.64	0.00	13.46	14.23	12.59	10.73	12.40	9.69	9.10	12.76	11.57
3. Cut Off Recovery (%)	8.56	9.96	8.38	8.31	9.46	10.18	8.70	8.95	8.73	6.41	7.12	7.31	7.22	9.18	8.00
2003-04	Year Average Recovery			9.28											
1. Actual Recovery	10.27	10.34	9.64	9.68	10.93	0.00	10.76	10.73	9.83	8.91	8.29	9.32	9.97	10.58	9.89
2. Break Even Recovery (%)	16.20	11.73	12.89	10.83	14.04	0.00	11.21	15.01	10.04	8.77	13.56	8.58	9.07	11.95	9.35
3. Cut Off Recovery (%)	5.57	7.43	6.91	6.40	9.14	0.00	6.02	7.08	6.97	6.73	5.76	6.64	7.10	6.64	5.70
2004-05	Year Average Recovery			8.94											
1. Actual Recovery	9.13	9.33	8.77	10.16	10.87	0.00	9.74	10.60	10.04	7.24	8.31	9.72	9.27	10.36	10.62
2. Break Even Recovery (%)	11.74	11.35	10.40	9.77	9.61	0.00	9.24	12.54	9.14	15.81	14.22	8.18	8.01	8.70	9.50
3. Cut Off Recovery (%)	4.65	6.32	4.93	6.14	6.73	0.00	5.61	6.04	6.73	4.98	4.40	6.01	6.39	6.21	7.57
2005-06	Year Average Recovery			9.28											
1. Actual Recovery	8.89	8.59	9.69	9.03	10.90	10.05	9.22	10.17	8.38	8.33	8.81	8.59	8.55	10.32	9.62
2. Break Even Recovery (%)	10.72	15.30	10.03	10.82	10.63	0.00	9.25	11.43	9.62	11.22	14.52	8.54	7.89	10.54	8.43
3. Cut Off Recovery (%)	7.08	6.24	7.64	7.24	7.92	7.99	6.98	7.41	7.01	6.88	6.13	6.52	6.38	8.39	6.58
2006-07	Year Average Recovery			9.68											
1. Actual Recovery	9.15	9.92	10.05	9.19	11.11	10.23	9.47	10.73	9.18	8.63	9.04	9.19	8.79	10.60	9.97
2. Break Even Recovery (%)	13.76	10.04	9.99	12.67	12.47	15.81	12.04	14.16	10.47	15.21	15.00	9.69	9.21	10.52	9.50
3. Cut Off Recovery (%)	9.90	7.46	7.92	8.89	9.56	10.09	9.15	9.59	8.43	10.20	8.95	8.15	7.83	8.80	7.66
	TABLE 4.1 continued														
	ACSM	AMCSM	SCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM
2007-08	Year Average Recovery			9.26											
1. Actual Recovery	9.14	9.71	9.81	8.88	10.55	9.25	8.99	10.32	8.82	8.08	7.93	8.29	9.34	10.42	9.30
2. Break Even Recovery (%)	13.36	10.82	11.39	12.44	13.95	15.83	12.40	14.62	12.10	0.00	15.03	11.30	10.43	12.15	11.42
3. Cut Off Recovery (%)	9.38	7.54	9.13	8.91	10.74	10.43	9.31	10.07	9.37	9.69	9.42	9.24	8.98	10.36	9.71
2008-09	Year Average Recovery			9.55											
1. Actual Recovery	9.39	9.51	10.02	9.47	11.15	8.95	9.34	10.92	9.30	8.51	8.12	8.28	9.44	10.90	10.02
2. Break Even Recovery (%)	9.21	9.43	8.52	8.50	9.16	11.43	9.65	10.12	8.99	10.23	9.93	7.87	8.53	10.01	8.77
3. Cut Off Recovery (%)	5.98	6.46	6.37	6.01	6.45	7.44	6.78	5.93	6.64	6.11	5.71	6.06	7.08	8.12	7.07
2009-10	Year Average Recovery			9.00											
1. Actual Recovery	8.75	9.82	9.67	8.89	10.81	9.09	9.27	9.80	8.70	7.35	8.10	7.76	8.80	8.80	9.33
2. Break Even Recovery (%)	10.93	9.40	6.98	7.31	8.27	9.46	8.57	9.64	9.01	11.10	10.28	6.74	6.50	7.27	7.15
3. Cut Off Recovery (%)	6.12	6.60	5.87	5.45	6.35	5.00	5.88	4.86	6.74	5.42	5.56	4.89	5.51	6.18	5.15
2010-11	Year Average Recovery			9.16											
1. Actual Recovery	9.05	9.30	9.24	8.41	10.92	9.60	9.79	10.52	8.55	8.54	7.60	7.61	8.44	10.64	9.21
2. Break Even Recovery (%)	11.74	10.30	8.46	8.20	9.54	13.24	10.66	11.35	8.58	11.62	14.71	9.81	8.33	9.94	8.60
3. Cut Off Recovery (%)	8.33	7.60	7.39	6.64	7.46	7.79	7.78	7.83	6.76	7.94	7.51	7.13	7.03	7.53	7.37
2011-12	Year Average Recovery			9.40											
1. Actual Recovery	9.62	9.83	9.52	8.75	10.98	10.06	9.28	10.78	8.86	8.60	8.29	8.00	8.53	10.32	9.59
2. Break Even Recovery (%)	13.12	11.27	9.23	11.08	11.09	12.70	10.75	12.46	10.83	11.20	14.35	10.61	9.01	9.65	8.93
3. Cut Off Recovery (%)	8.34	8.32	8.36	7.82	9.07	8.70	8.07	8.99	7.97	7.77	7.95	7.88	7.75	8.35	7.47
Mill wise Average															
1. Actual Recovery	9.37	9.71	9.70	9.20	10.96	7.71	9.59	10.51	9.14	8.31	8.30	8.59	9.03	10.39	9.75
2. Break Even Recovery (%)	12.45	11.47	9.92	10.69	11.24	7.85	10.72	12.56	10.14	10.59	13.40	9.10	8.61	10.35	9.32
3. Cut Off Recovery (%)	7.39	7.39	7.29	7.18	8.29	6.76	7.43	7.67	7.53	7.21	6.85	6.98	7.13	7.98	7.23

Source: Secondary Data

From Table 4.1, it is extracted that the Recovery % of sugar shows the fluctuating trend in all the running Co-operative Sugar Mill's in Tamil Nadu. Overall average Recovery of sugar is the highest in 2002-03 that is 9.95% and the lowest in 2004-05 that is 8.94% .

Actual recovery is more than Break-Even Recovery of sugar percentage for Cheyyaru Co-operative Sugar Mill Except 2006-07, 2007-08 and 2011-12; for K2 Co-operative Sugar Mill except 2002-03 and 2007-08 ; for S.Siva Co-operative Sugar Mill except 2002-03,2003-04,2005-06 and 2007-08 ; for Salem Co-operative Sugar Mills during 2006-07, 2008-09, 2009-10, 2010-11 and

2011-12 ; for MRK Co-operative Sugar Mill during 2003-04, 2004-05, 2005-06, 2008-09 and 2009-10 ; for Tiruthani Co-operative Sugar Mills during 2003-04 ; for Chengalrayan Co-operative Sugar during 2004-05 and 2008-09 ; for Tirupattur Co-operative Sugar Mill during 2008-09 and 2009-10 ; for Vellore Co-operative Sugar Mill during 2004-05 and 2009-10 ; for Dharmapuri Co-operative Sugar Mill during 2004-05, 2005-06, 2008-09, 2009-10 and 2010-11 ; for K1 Co-operative Sugar Mill during 2004-05, 2008-09, 2009-10 and 2010-11 ; for Ambur Co-operative Sugar Mill during 2008-09 and for Amaravathi Co-operative Sugar Mill during 2008-09 and 2009-10 .

In 2002-03 , Break-Even Recovery of Cheyyar Co-operative Sugar Mill is 9.10%, and MRK Co-operative Sugar Mill is 9.69%. Break-Even Recovery for all the other Co-operative Sugar mills in Tamil Nadu are over and above the yearly average recovery (9.95%). But in this year basic recovery % for fixation of sugarcane price by Government of India, is 8.50 %. Only Amaravathi Co-operative Sugar Mill's (9.96%) and National Co-operative Sugar Mill's (10.18%) Cut off Recovery are more than the yearly average recovery (9.95%).

In 2003-04 , three out of Fifteen Co-operative Sugar Mills Break-Even Recovery are lower than the yearly average recovery (9.28%) and three Co-operative Sugar Mills vide Tiruthani Co-operative Sugar Mill (8.77%), MRK Co-operative Sugar Mill (8.58%) and Cheyyaru Co-operative Sugar Mill (9.07%) whose Break-Even Recovery are between yearly average recovery(9.28%) and the basic recovery (8.5%) for the fixation of sugarcane price by Government of India.

In 2004-05 except MRK Co-operative Sugar Mill(8.18%), Cheyyaru Co-operative Sugar Mill(8.01%) and S.Siva Co-operative Sugar Mill(8.70%), all the other Co-operative Sugar Mills Break-Even Recovery are more than the yearly average recovery that is 8.94% MRK Co-operative Sugar Mill (8.18%) and Cheyyaru Co-operative Sugar Mill (8.01%) Break-Even Recovery are lower than the basic recovery % (8.5%).

In 2005-06 , except Vellore Co-operative Sugar Mill (9.25%), MRK Co-operative Sugar Mill (8.54%), Cheyyar Co-operative Sugar Mill (7.89%) and K2 Co-operative Sugar Mill (8.43%), all the other Co-operative Sugar Mills Break-Even Recovery are over and above the yearly average recovery that is. 9.28% Cheyyaru Co-operative Sugar Mill(7.89%) and K2 Co-operative Sugar Mill(8.43%) whose Break-Even Recovery are lower than the basic recovery (8.5%).

Yearly average recovery for 2006-07 was 9.68% .Break-Even Recovery for Only Cheyyaru Co-operative Sugar Mill (9.21%) and K2 Co-operative Sugar Mill (9.50%) is within the yearly average recovery. Cut Off Recovery for Amaravathi Co-operative Sugar Mill (7.46%), S.Siva Co-operative Sugar Mill (7.92%), K1 Co-operative Sugar Mill(8.89%), Chengalrayan Co-Operative Sugar Mill (8.43%), NPKRR Co-operative Sugar Mill(8.95%), MRK Co-operative Sugar Mill (8.15%) and Cheyyaru Co-operative Sugar Mill(7.83%) and S.Siva Co-operative Sugar Mill (8.80%) are less than yearly average recovery and basic recovery for fixation of sugarcane price (upto 2004-

05 it was 8.50% and from 2005-06 to 2007-08 it was 9% and then from 2008-09 onwards it is 9.5%) by Govt of India..

In 2007-08 , average recovery is 9.26%. All the Co-operative Sugar Mills Break-Even recovery is more than yearly average Recovery which are imaginary. Cut of recovery for Amaravathi Co-operative Sugar Mill (7.54%), K1 Co-operative Sugar Mill (8.91%), MRK Co-operative Sugar Mill (9.24%) and Cheyyaru Co-operative Sugar Mill (8.98%) are within yearly average.

Yearly average recovery for 2008-09 was 9.55%. Except National Co-operative Sugar Mill (11.43%),Vellore Co-operative Sugar Mill (9.65%),Tirupathur Co-operative Sugar Mill (10.12%),Tiruthani Co-operative Sugar Mill (10.23%) ,NPKRR Co-operative Sugar Mill (9.93%) and S.Siva Co-operative Sugar Mill (10.01%) all the other Co-operative Sugar Mill's Break Even Recovery are less than the yearly average recovery (9.55%) and basic recovery (now 9.5%).

In 2009-10 yearly average recovery is 9.00 % .From this year Government of India introduced the system of announcing the Fair and Remunerative Price (FRP) for Sugar Cane, instead of Statutory Minimum Price (SMP) of sugar Cane. Also the Basic Recovery for this Fair Remunerative Price fixation is raised from 9% into 9.5%. Except Tirupathur Co-operative Sugar Mill (9.64%), Ambur Co-operative Sugar Mill (10.93%) Amaravathi Co-operative Sugar Mill (9.40%), National Co-operative Sugar Mill (9.46%), Tiruthani Co-operative Sugar Mill (11.10%) and NPKR Co-operative Sugar Mill (10.28%) , all the other Co-operative Sugar Mills Break-Even Recovery are below the yearly average recovery (9.00%)

In 2010-11 , yearly average recovery is 9.16%. Five out of Fifteen Co-operative Sugar Mills Break-Even Recovery are not more than the yearly average recovery (9.16%) and basic recovery % (now 9.5%) for the sugarcane price fixation by Govt of India likewise K2 Co-operative Sugar Mill (8.60%), Cheyyar Co-operative Sugar Mill (8.33%), Chengalrayan Co-operative Sugar Mill (8.58%), K1 Co-operative Sugar Mill(8.20%) and Salem Co-operative Sugar Mill (8.46%) .

In 2011-12 , three out of fifteen Co-operative Sugar Mill's likewise. K1 Co-operative Sugar Mill (9.12%), K2 Co-operative Sugar Mill (8.93%) and Cheyyaru Co-operative Sugar Mill (9.01%) whose Break-Even Recovery are lower than the yearly average recovery (9.40%) and basic recovery % (now 9.5%) for sugarcane price fixation by Govt of India.

Over all the study period Except 2002-03 , 2006-07 and 2007-08 in the remaining seven years all the running Co-operative Sugar Mill's Cut Off Recovery are within the yearly average recovery and basic recovery (now 9.5%) .

From Table.4.1, it is also extracted that Cheyyar Co-operative Sugar Mill's actual recovery during the period of seven out of ten years are more than break-even recovery of sugar. Actual recovery for only one year during the study period of ten years is more than break-even recovery

for the two Co-operative Sugar Mill's that is Ambur Co-operative Sugar Mill (2008-09) and Tiruthani Co-operative Sugar Mill (2003-04). Recovery in the study period in the Tiruthani Co-operative Sugar Mill and NPKR Co-operative Sugar Mill are lower when compared with other Co-operative Sugar Mills. **In actual recovery of sugar attained by these two Co-Operative Sugar Mills if compared with National level ,it is arrived at 10 percent while it is 14 percent in other countries like Australia, Brazil and the like.,** Recovery of sugar mainly depends on cane quality and modern machineries in the mills.

4.3.2 Break Even Sugar Production (in quantity)

From the Calculation mentioned in previous paragraph, It is examined that the sugar Mills total revenue is equal to total cost (Variable cost and fixed cost) and there is no loss or profit earned by the particular Sugar Mill for the particular period. And if its production is over and above the Break-even Sugar Production then we conclude that the particular Sugar Mill has earned profit for the particular period. Table 4.2 shows Actual Sugar Production, Break Even Sugar Production for all the Co-operative Sugar mills in Tamil Nadu.

Ambur Co-operative Sugar Mill (2008-09) and Tiruthani Co-operative Sugar Mill (2003-04) had achieved this target only one year over and above the Break-even sugar production during this study period.

The two Co-operative Sugar Mills of K2 Co-operative Sugar Mill and Cheyyaru Co-operative Sugar Mill managed to produce more sugar than the break-even sugar production in seven out of ten years study period.

During 2002-03 , only Cheyyaru Co-operative Sugar Mill has achieved this target of over and above the Break-even sugar production. During 2008-09 , Except NPKR Co-operative Sugar Mill, Tiruthani Co-operative Sugar Mill and National Co-operative Sugar Mill all the other Co-operative Sugar Mills in Tamil Nadu have achieved this target of over and above the Break -even sugar production.

During 2004-05 , yearly average sugar production is 211850 qtls, Except K1 Co-operative Sugar Mill (322102qtls), Dharmapuri Co-operative Sugar Mill (139377 qtls),Vellore Co-operative Sugar Mill (144900 qtls), Chengalrayan Co-operative Sugar Mill (365752 qtls), MRK Co-operative Sugar Mill (290303 qtls), Cheyyaru Co-operative Sugar Mill (213648 qtls), Salem Co-operative Sugar Mill (189068 qtls) and K2 Co-operative Sugar Mill (350791 qtls) and all the other Co-operative Sugar Mills in Tamil Nadu have not achieved over and above the Break –Even sugar production. And also Actual Sugar production for K1Co-operative Sugar Mill, Chengalrayan Co-operative Sugar Mill, MRK Co-operative Sugar Mill, Cheyyaru Co-operative Sugar Mill and K2Co-operative Sugar Mill have exceeded yearly average sugar production.

During 2005-06 , yearly average sugar production is 235039 qtls. In this only Dharmapuri Co-operative Sugar Mill (337234 qtls), Cheyyaru Co-operative Sugar Mill (242713 qtls) and K2 Co-operative Sugar Mill (373718 qtls) have achieved the over and above yearly average sugar production and Break-even sugar production.

During 2009-10 , yearly average sugar production is 230450 qtls. In this except NPKRR Co-operative Sugar Mill (163200 qtls), Tiruthani Co-operative Sugar Mill (64370 qtls), Chengalrayan Co-operative Sugar Mill (321578 qtls), National Co-operative Sugar Mill (136374 qtls) and Ambur Co-operative Sugar Mill (79813 qtls) and all the Co-operative Sugar Mills have achieved over and above the Break-even Sugar production. And also only Salem Co-operative Sugar Mill (415527 qtls), K1 Co-operative Sugar Mill (429300 qtls), Dharmapuri Co-operative Sugar Mill (323360 qtls), S.Siva Co-operative Sugar Mill (432330 qtls), Chengalrayan Co-operative Sugar Mill (321578 qtls) and K2 Co-operative Sugar Mill (275119 qtls) have achieved over and above yearly average production.

During 2010-11 ,yearly average sugar production is 209054 qtls. In this Salem Co-operative Sugar Mill (367999 qtls), K1 Co-operative Sugar Mill (372800 qtls), Dharmapuri Co-

operative Sugar Mill (2228225 qtls), S.Siva Co-operative Sugar Mill (274195 qtls), K2 Co-operative Sugar Mill (326566 qtls) have achieved over and above yearly average sugar production and Break-even sugar production. Chengalrayan Co-operative Sugar Mill (288250 qtls) has achieved the yearly average production but has not achieved the Break –Even sugar production.

During 2011-12 , yearly average sugar production is 258193 qtls .In this only Salem Co-operative Sugar Mill (405341 qtls) and K2 Co-operative Sugar Mill (442228 qtls) have achieved over and above yearly average sugar production and Break-even sugar production. S.Siva Co-operative Sugar Mill (237520 qtls) has achieved only break-even sugar production. K1 Co-operative Sugar Mill (408250 qtls), Dharmapuri Co-operative Sugar Mill (294406 qtls) and Chengalrayan Co-operative Sugar Mill (351634 qtls) have achieved only yearly average sugar production.

4.3.3 Break-Even Volume of Sales (Revenue) (Rs. in Lakhs)

Break-Even Volume of Sales (Revenue) is the same pros and cons for Break-Even Sugar Production. But this analysis indicates only the terms of Break-Even volume of Revenue earned by the particular Sugar Mill during the particular period. Table 4.3 displays Actual Sales Value, Break-Even Sales Value for the Co-operative Sugar mills in Tamil Nadu from 2002-03 to 2011-12. This calculation shows the same pros and cons for Break-Even Sugar Production.

TABLE 4.3

Statement of Actual Sales Value, Break-Even Sales Value

TABLE 4.3 Statement of Actual Sales Value, Break Even Sales Value															
	ACSM	AMCSMSCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM	
2002-03	Year Average Sales Value		3,807												
1.Actual Sales Value	2,721	2,714	5,693	3,813	4,616	391	3,565	2,817	4,855	3,036	3,090	4,500	4,882	5,018	5,393
2.BESales Value	8,034	15,629	7,552	22,189	10,475	0	12,777	8,717	18,974	5,441	11,900	5,844	4,778	10,083	10,175
2003-04	Year Average Sales Value		3,176												
1.Actual Sales Value	1,216	3,492	2,500	5,264	1,729	55	3,401	1,599	5,736	2,851	2,578	5,515	4,108	2,879	4,713
2.BESales Value	2,753	4,986	5,479	7,112	4,735	0	3,727	3,479	5,913	2,413	7,320	3,989	2,815	3,899	4,103
2004-05	Year Average Sales Value		3,142												
1.Actual Sales Value	1,349	1,946	1,940	6,132	2,663	43	3,146	1,745	6,445	872	1,963	5,211	4,231	3,797	5,653
2.BESales Value	2,135	3,367	2,767	5,542	1,853	0	2,753	2,487	4,700	4,156	4,683	3,045	2,389	2,278	3,556
2005-06	Year Average Sales Value		4,265												
1.Actual Sales Value	2,716	902	6,767	6,374	5,518	1,136	4,430	3,510	5,589	2,490	2,501	4,233	4,703	5,716	7,396
2.BESales Value	5,466	6,446	7,876	12,699	5,314	0	4,976	5,113	10,652	8,341	8,100	4,119	3,259	6,374	4,490
2006-07	Year Average Sales Value		5,788												
1.Actual Sales Value	3,166	5,414	9,931	6,376	5,427	3,663	5,277	4,107	8,147	2,823	4,043	6,222	6,482	7,739	8,007
2.BESales Value	0	5,613	9,560	80,341	10,149	153,383	47,916	16,439	22,259	0	272,523	9,184	9,270	7,401	6,368
	ACSM	AMCSMSCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM	
2007-08	Year Average Sales Value		6,295												
1.Actual Sales Value	3,814	5,217	9,306	7,739	6,318	4,664	5,984	4,638	8,286	4,221	4,163	6,127	7,911	8,325	7,715
2.BESales Value	0	7,533	30,668	(1,100,653)	0	0	0	0	0	0	0	0	32,520	267,560	18,807
2008-09	Year Average Sales Value		7,376												
1.Actual Sales Value	4,807	5,791	10,673	9,853	5,881	6,601	6,058	6,611	9,863	5,068	6,288	6,953	8,069	9,194	8,938
2.BESales Value	4,542	5,630	6,150	7,073	3,399	17,432	6,284	5,542	8,707	8,009	11,074	5,665	4,947	6,257	5,139
2009-10	Year Average Sales Value		7,683												
1.Actual Sales Value	2,527	6,787	16,057	13,161	9,481	5,085	4,639	4,402	8,551	2,364	4,766	6,936	8,263	12,867	9,365
2.BESales Value	4,637	5,503	4,710	7,136	4,094	5,549	3,671	4,264	9,900	6,865	8,291	4,488	2,483	3,052	4,480
2010-11	Year Average Sales Value		6,444												
1.Actual Sales Value	3,110	5,344	11,151	12,071	7,281	4,011	5,321	4,762	9,237	4,062	2,996	4,051	5,171	8,549	9,549
2.BESales Value	14,760	8,477	6,478	10,680	4,384	12,066	7,629	6,224	9,365	24,594	0	22,561	4,767	6,615	6,369
2011-12	Year Average Sales Value		7,590												
1.Actual Sales Value	3,714	6,266	12,852	11,700	8,211	6,450	5,988	5,223	9,863	6,432	3,601	6,107	7,131	6,916	13,399
2.BESales Value	13,883	12,283	9,574	41,206	8,677	18,925	13,315	10,097	31,575	26,486	66,971	140,885	11,506	4,554	9,236
Mill wise Average				5,557											
1.Actual Sales Value	2,914	4,387	8,687	8,248	5,713	3,210	4,781	3,941	7,657	3,422	3,599	5,586	6,095	7,100	8,013
2.BESales Value	5,621	7,547	9,081	(90,667)	5,308	20,736	10,305	6,236	12,205	8,631	39,086	19,978	7,873	31,807	7,272

Source: Secondary Data

From Table 4.3, it is expressed that none of the Co-operative Sugar Mill has achieved the Break-even volume of sales value during the year 2007-08. In 2002-03 only Cheyyaru Co-operative Sugar Mill (Rs.4778/-Lakhs) has attained the Break-even volume of sales value.

In 2003-04 year, K2 Co-operative Sugar Mill (Rs.4713/-Lakhs), Cheyyaru Co-operative Sugar Mill (Rs.4108/-Lakhs), MRK Co-operative Sugar Mill (Rs.5515/-Lakhs) and Tiruthani Co-operative Sugar Mill (Rs.2851/-Lakhs) have achieved the Break-even volume of sales value. K2 Co-operative Sugar Mill (Rs.4713/-Lakhs) and MRK Co-operative Sugar Mill (Rs.5515/-Lakhs) are achieved both Break-even volume of sales value and year average sales value.

In 2004-05year, Except NPKRR Co-operative Sugar Mill(Rs.4683/-Lakhs), Tiruthani Co-operative Sugar Mill(Rs.4156/-Lakhs), Tirupathur Co-operative Sugar Mill (Rs.2487/-Lakhs), Salem Co-operative Sugar Mill (Rs.2767/-Lakhs), Amaravathi Co-operative Sugar Mill(Rs.3367/-Lakhs) and Ambur Co-operative Sugar Mill(Rs.2135/-Lakhs) all other Co-operative Sugar Mill have achieved the Break-even volume of sales value.

In 2005-06 year ,only K2 Co-operative Sugar Mill and Cheyyaru Co-operative Sugar Mill have achieved both Break-Even volume sales value and year average sales value. K2 Co-operative Sugar Mill (Rs. 7396/- Lakhs), Cheyyaru Co-operative Sugar Mill (Rs.4703/-Lakhs), MRK Co-operative Sugar Mill (Rs.4233/-Lakhs) and Dharmapuri Co-Operative Sugar Mill (Rs.5518/-Lakhs) have reached the break-even volume of sales value.

In 2006-07 year, except Salem Co-operative Sugar Mill (Rs.9931/-Lakhs), S.Siva Co-operative Sugar Mill (Rs.7739/-Lakhs) and K2 Co-operative Sugar Mill (Rs.8007/-Lakhs) all the other Co-operative Sugar mills in Tamil Nadu have not achieved the Break- even volume of sales value.

In 2008-09 year except National Co-operative Sugar Mill(Rs.6601/-Lakhs),Vellore Co-operative Sugar Mill (Rs.6058/-Lakhs),,Tiruthani Co-operative Sugar Mill(Rs.5068/-Lakhs) and NPKRR Co-operative Sugar Mill (Rs.6288/-Lakhs) all other Co-operative Sugar Mill have reached their Break-even volume of sales value. Salem Co-operative Sugar Mill (Rs.10673/-Lakhs), Chengalrayan Co-operative Sugar Mill (Rs.9863/-Lakhs), Cheyyaru Co-operative Sugar Mill (Rs.8069/-Lakhs), S.Siva Co-operative Sugar Mill (Rs.9194/-Lakhs) and K2 Co-operative Sugar Mill (Rs.8938/-Lakhs) have achieved both Break- even volume of sales value and year average sales value.

In 2009-10 year, except Ambur Co-operative Sugar Mill (Rs.2527/-Lakhs), National Co-operative Sugar Mill (Rs.5085/-Lakhs), Chengalrayan Co-operative Sugar Mill (Rs.8551/-Lakhs) and NPKRR Co-operative Sugar Mill (Rs.4766/-Lakhs) all other Co-operative Sugar mills achieved the Break-even volume of sales value. And except Vellore Co-operative Sugar Mill (Rs.4639/-Lakhs), Tirupathur Co-operative Sugar Mill (Rs.4402/-Lakhs) all the other Co-operative Sugar Mills have achieved both Break-even volume of sales value and year average sales value.

In 2010-11 year, Only Salem Co-operative Sugar Mill (Rs.11151/-Lakhs) and K1 Co-operative Sugar Mill (Rs.12071/-Lakhs) have reached both Break-even volume of sales value and year average sales value. Dharmapuri Co-operative Sugar Mill (Rs.7281/-Lakhs), Cheyyaru Co-operative Sugar Mill (Rs.5171/-Lakhs), S.Siva Co-operative Sugar Mill (Rs.8549/-Lakhs), K2 Co-operative Sugar Mill (Rs.9549/-Lakhs), Salem Co-operative Sugar Mill (Rs.11151/-Lakhs) and K1 Co-operative Sugar Mill (Rs.12071/-Lakhs) have reached both Break-even volume of sales value.

In 2011-12 year except S.Siva Co-operative Sugar Mill (Rs.6916/-Lakhs) Mills all the other Co-operative Sugar Mills have not achieved Break-even volume of sales value

In respect of actual Sales value in K2 Co-operative Sugar Mill, eight out of ten years, it is more than the break-even volume of sales achieved during the period of study. Tiruthani Co-operative Sugar Mill (2003-04), Ambur Co-operative Sugar Mill (2008-09) and Amaravathi Co-operative Sugar Mill (2009-10) have achieved only one year for the break-even volume of sales over

the period of study. NPKR Co-Operative Sugar Mill and National Co-Operative Sugar Mill have not reached the break-even sales over the period of study.

4.3.4 Break-Even Cane Crushing (in MT)

Break-even Cane Crushed is the same for Break-even Sugar Production. But this analysis indicates only the terms of cane crushing for particular Sugar Mill for the particular period. Actual Cane Crushed, Break-even Cane to be crushed for the Co-operative Sugar mills in Tamil Nadu from 2002-03 to 2011-12 are given in Table 4.4 and Table 4.4 also gives the trends in cane crushed and break-even cane crushed during the study period. This calculation gives the same pros and cons for Break-even Sugar Production. But this analysis indicates only the terms of cane crushing for particular Sugar Mill for the particular period.

TABLE 4.4

Statement of Actual Cane Crushed, Break-Even Cane to be crushed

TABLE 4.4 Statement of Actual Cane Crushed, Break Even Cane to be Crushed															
	ACSM	AMCSM	SCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM
2002-03	Year Average Cane Crushed			344,667											
1 Actual Cane Crushed	240,000	227,000	486,000	367,000	368,000	45,000	333,000	245,000	499,000	255,000	318,000	432,000	445,000	428,000	482,000
2.BE Cane to be Crushed	709,372	1,319,080	644,458	2,130,934	831,667	0	1,193,412	767,112	1,950,273	452,091	1,220,296	558,809	434,802	859,084	905,338
2003-04	Year Average Cane Crushed			215,153											
1 Actual Cane Crushed	62,218	197,053	169,503	370,558	122,709	0	191,204	98,253	419,352	224,769	201,982	417,018	319,628	157,722	237,125
2.BE Cane to be Crushed	140,753	284,199	371,410	500,648	336,051	0	209,485	213,658	437,377	195,106	588,752	301,593	219,169	213,202	239,762
2004-05	Year Average Cane Crushed			162,098											
1 Actual Cane Crushed	59,245	43,710	93,531	317,040	128,165	0	148,533	80,569	364,332	50,127	104,734	298,596	230,592	182,534	329,760
2.BE Cane to be Crushed	93,745	74,789	133,361	286,563	89,215	0	130,204	114,858	265,683	239,387	256,082	174,528	130,108	109,502	207,761
2005-06	Year Average Cane Crushed			252,623											
1 Actual Cane Crushed	162,540	27,580	418,495	404,179	314,260	63,830	268,853	186,221	371,912	144,061	146,531	262,685	283,345	346,495	388,353
2.BE Cane to be Crushed	327,041	172,227	487,205	805,615	297,955	0	294,859	271,272	708,670	473,379	469,595	255,718	196,703	386,327	235,848
2006-07	Year Average Cane Crushed			388,651											
1 Actual Cane Crushed	256,298	233,824	533,363	491,169	333,908	255,426	403,487	263,164	602,246	254,853	322,026	471,482	464,806	470,591	473,116
2.BE Cane to be Crushed	0	243,220	514,431	6,189,055	624,715	10,693,417	3,664,183	1,053,293	1,645,418	0	21,700,564	696,011	664,970	450,046	376,339
	ACSM	AMCSM	SCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM
2007-08	Year Average Cane Crushed			485,597											
1 Actual Cane Crushed	300,938	236,188	597,244	582,138	453,617	382,043	496,312	319,900	742,656	403,175	400,670	552,051	612,693	601,876	602,461
2.BE Cane to be Crushed	0	344,483	1,968,944	(82,834,057)	0	0	0	0	0	0	0	0	2,517,482	19,340,718	1,643,706
2008-09	Year Average Cane Crushed			364,542											
1 Actual Cane Crushed	222,072	199,140	432,473	471,945	229,900	404,220	320,718	237,064	544,799	267,727	346,653	396,591	451,886	475,362	467,586
2.BE Cane to be Crushed	209,928	193,653	251,006	338,931	132,803	1,067,647	340,172	198,812	481,229	433,483	609,497	323,171	276,950	323,380	268,999
2009-10	Year Average Cane Crushed			247,954											
1 Actual Cane Crushed	91,267	153,144	429,713	460,593	299,245	150,062	152,436	110,901	369,464	87,252	197,236	259,643	261,864	401,732	294,761
2.BE Cane to be Crushed	167,357	127,170	126,037	249,634	129,180	163,704	120,730	107,425	427,923	254,280	350,510	167,826	78,661	116,509	141,083
2010-11	Year Average Cane Crushed			228,753											
1 Actual Cane Crushed	127,108	143,505	398,342	443,489	208,929	139,693	188,039	156,159	337,111	165,592	140,336	175,534	195,421	257,611	217,813
2.BE Cane to be Crushed	603,256	227,646	231,394	392,400	125,778	420,197	269,597	204,097	341,791	1,002,524	0	977,635	180,147	199,326	236,392
2011-12	Year Average Cane Crushed			276,548											
1 Actual Cane Crushed	135,125	178,925	425,593	466,797	268,178	233,551	218,404	174,573	396,672	250,039	152,937	271,214	284,883	230,118	304,826
2.BE Cane to be Crushed	505,124	350,719	317,060	1,643,941	283,373	685,305	485,610	337,464	1,269,869	1,029,658	2,844,511	6,256,722	459,686	151,523	317,908
Mill wise Average															
1 Actual Cane Crushed	165,681	164,007	398,426	437,491	272,691	167,383	272,099	187,180	464,754	210,260	233,111	353,681	355,012	355,204	379,780
2.BE Cane to be Crushed	275,658	333,719	504,531	(7,029,633)	285,074	1,303,027	670,825	326,799	752,823	407,991	2,803,981	971,201	515,868	2,214,962	457,314

Source: Secondary Data

From Table 4.4, It is inferred that the quantity of cane crushed by Chenagalrayan Co-operative Sugar Mill for the year 2002-03, 2003-04 and from the year of 2006-07 to 2008-09. K1 Co-operative Sugar Mill from the year of 2005-06 to 2011-12 are in the higher side, whereas the quantity of cane crushed by National Co-operative Sugar Mill in the year of 2002-03 and 2005-06, Tirupathur Co-operative Sugar Mill for 2003-04 and 2004-05, Amaravathi Co-operative Sugar Mill from the year of 2004-05 to 2005-06, S.Siva Co-operative Sugar Mill during the year of 2004-05, Tiruthani Co-operative Sugar Mill in 2004-05 and 2009-10 and the Ambur Co-operative Sugar Mill

during the year of 2003-04, 2004-05 and 2009-10 have crushed very lower quantity of cane that is less than one lakh MT of cane.

Also, the Quantity of cane crushed shows the fluctuating trend over the period and it differs from one Co-operative Sugar Mill to the other. Quantity of cane crushed by Tiruthani Co-operative Sugar Mill and NPKR Co-operative Sugar Mill are on the lower side when compared with other Co-operative Sugar Mills. But actual Quantity of sugarcane crushed depends upon the area of operation allotted to Co-operative Sugar Mill and availability of cane in that area.

Only Cheyyar Co-operative Sugar Mill (434802 MT), whose installed capacity is 4.3 Lakhs M.T, has crushed the quantity of cane over the break-even cane crushing in the year 2002-03. All other Co-operative Sugar Mills had not reached the break-even crushing,

In 2003-04 except Amaravathi Co-operative Sugar Mill (28419MT), K1 Co-operative Sugar Mill (500648MT), NPKR Co-operative Sugar Mill (588752MT) all the other Co-operative Sugar Mill's Break-even cane crushing are within their installed capacity.

During the year of 2004-05, all the Co-operative Sugar Mills break-even cane crushing are below the level of their installed capacity.

In 2005-06 Except Dharmapuri Co-operative Sugar Mill (314260MT) , MRK Co-operative Sugar Mill (262585MT), Cheyyaru Co-operative Sugar Mill (283345MT) and K2 Co-operative Sugar Mill (388353MT) all the other Co-operative Sugar Mills have not achieved the break-even cane crushing.

In 2006-07 Break-even cane crushing has been achieved only by K2 Co-operative Sugar Mill and S.Siva Co-operative Sugar Mill which is less than their installed capacity. Rest of the Co-operative Sugar Mills have not achieved their break-even cane crushing and these mills Break even cane crushing are more than their installed capacity which is imaginary.

During the year of 2007-08 no mill has reached their Break-even cane crushing except Amaravathi CSM. All the CSM's Break-even cane crushing are within their installed capacity during the year of 2008-09 except NPKR Co-operative Sugar Mill (609497MT) and National Co-operative Sugar Mill (1067647MT). In 2009-10 all the Co-Operative Sugar Mill's Break-even cane crushing are below the crushing capacity.

During the year of 2010-11 Ten out of Fifteen Co-Operative Sugar Mill's Break-Even Cane Crushing have not reached over and above the installed capacity except, S.Siva Co-operative Sugar Mill (257611MT), Cheyyar Co-Operative Sugar Mill (195421MT), Dharmapuri Co-operative Sugar Mill (208929MT), K1 Co-operative Sugar Mill (443489MT) and Salem Co-operative Sugar Mill (398342MT).).

Only two Co-operative Sugar Mills likewise S.Siva Co-operative Sugar Mill (151523MT) and Salem Co-operative Sugar Mill (350719MT) whose Break-even Cane crushing have not more than their installed capacity during the year 2011-12.

NPKR Co-operative Sugar Mill and National Co-operative Sugar Mill have not reached the Break-even Cane Crushing during the entire study period. Ambur Co-operative Sugar Mill(2008-09), Amaravathi Co-operative Sugar Mill(2009-10), Tiruthani Co-operative Sugar Mill(2003-04) have achieved only one year, over and above Break-even Cane Crush during the period of study. The two Co-operative Sugar Mills likewise, S.Siva Co-operative Sugar Mill, Cheyyar Co-operative Sugar Mill, have managed by crushing the quantity of cane over and above the break-even level in seven out of ten years taken for the period of study.

4.3.5 Analysis of Over All Abstract

Table 4.5 presents Over All Abstract for the Co-operative Sugar Mills in Tamil Nadu from 2002-03 to 2011-12. The trend attributed in Table 4.5 that is the overall abstract of Average, Standard Deviation, Co-efficient Variation, consists of 1. Break even recovery (%), 2. Cut off recovery (%), 3. Break even Sugar Production (in qtls), 4. Break even cane crushed (MTs), and 5. Break even volume of Sales value (Revenue), during the period of study.

TABLE 4.5
Statement for Over All Abstract from 2002-03 to 2011-12

TABLE 4.5 Statement for over all abstract from 2002-03 to 2011-12										
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Average										
Year Average Recovery for the year	9.95	9.28	8.94	9.28	9.68	9.26	9.55	9.00	9.16	9.40
Year Average Cane Crushed	344,667	215,153	162,098	252,623	388,651	485,597	364,542	247,954	228,753	276,548
Year Average Sugar Production	342,600	211,850	160,227	235,039	375,491	451,472	348,526	230,450	209,054	258,193
Year Average Sales Value	3,807	3,176	3,142	4,265	5,788	6,295	7,376	7,683	6,444	7,590
Average 1. Break even recovery (%)	14.94	10.88	9.88	11.42	12.04	12.72	9.36	8.58	10.34	11.08
2. Cut off recovery (%)	8.43	6.27	5.51	7.09	8.84	9.49	6.55	5.70	7.47	8.19
3. Break even Sugar Production(Qtls)	926,630	277,146	145,748	328,406	3,058,921	(3,226,749)	336,973	159,832	319,731	974,351
4. Break even crushing(MTs)	931,782	283,411	153,719	358,828	3,234,377	(3,897,391)	363,311	181,869	360,812	1,129,232
5. Break even volume of Revenue	10,171.19	4,181.44	3,047.41	6,215.00	43,360.39	(50,577.57)	7,056.67	5,274.82	9,664.62	27,944.81
Standard deviation										
Std.Dev 1. Break even recovery (%)	9.48	3.81	3.52	3.66	2.30	1.62	0.90	1.54	1.92	1.56
2. Cut off recovery (%)	1.07	1.94	1.75	0.68	0.91	0.77	0.66	0.61	0.45	0.46
3. Break even Sugar Production(Qtls)	546,502	131,905	77,307	181,765	5,438,159	20,130,932	195,853	78,800	231,444	1,257,383
4. Break even crushing(MTs)	562,935	147,537	81,924	206,454	5,891,144	22,397,089	230,113	97,946	290,679	1,585,635
5. Break even volume of Revenue	5,661.82	1,878.79	1,369.84	3,064.81	75,404.31	298,483.20	3,418.12	2,005.46	6,628.24	35,256.95
C.V										
C.V. 1. Break even recovery (%)	0.63	0.35	0.36	0.32	0.19	0.13	0.10	0.18	0.19	0.14
2. Cut off recovery (%)	0.13	0.31	0.32	0.10	0.10	0.08	0.10	0.11	0.06	0.06
3. Break even Sugar Production(Qtls)	0.59	0.48	0.53	0.55	1.78	-6.24	0.58	0.49	0.72	1.29
4. Break even crushing(MTs)	0.60	0.52	0.53	0.58	1.82	-5.75	0.63	0.54	0.81	1.40
5. Break even volume of Revenue	0.56	0.45	0.45	0.49	1.74	-5.90	0.48	0.38	0.69	1.26

Source: Secondary Data

From Table 4.5, It is understood that Average Break-Even Recovery for the year 2008-09 (9.36%) and 2009-10 (8.58%) are within the yearly average recovery % and Basic recovery% (upto 2004-05 it was 8.50% and from 2005-06 to 2007-08 it was 9% and then from 2008-09 onwards it is 9.5%) for fixation of price for sugarcane by Government of India.

Except 2007-08 (9.49%) All the other year for period of study Average Cut Off Recovery are below the level of yearly average recovery % and Basic recovery% (upto 2004-05 it was 8.50% and from 2005-06 to 2007-08 it was 9% and then from 2008-09 onwards it is 9.5%) for sugarcane price fixation by Government of India.

Seven out of ten years for the study period, the Break-Even Cane Crushing are less than the installed capacity of the mills likewise 2003-04 (283411), 2004-05 (153719), 2005-06 (358828MT), 2006-07 (3234377MT), 2008-09 (363311MT), 2009-10 (181869MT) and 2010-11 (360812MT). Rest of the years 2002-03 (931782MT), 2007-08 (-3897391MT) and 2011-12 (1129232). Break-Even Cane Crushing are more than the installed capacity of the mills which is imaginary.

Co-efficient variation for Break-Even Recovery during the year 2002-03 (0.63), Cut Off Recovery during the year 2004-05 (0.32), Break-Even Sugar Production in the year 2006-07 (1.78), Break-Even Sugar Cane Crushed during the year 2006-07 (1.82) and Break-Even Volume of sales value (Revenue) in the year 2006-07 (1.74) are consistent, whereas Co-efficient variation for Break-Even Recovery during the year 2008-09 (0.10)), Cut Off Recovery in the years of 2010-11 and 2011-12 (0.06), Break-Even Sugar Production during the year 2003-04 (0.48), Break-Even Sugar Cane Crushed during the year 2009-10 (0.54), and Break-Even Volume of Sales Value(Revenue) for the year 2009-10 (0.38) are inconsistent. Break-Even Sugar Production, Break-Even Sugar Cane Crushed and Break-Even Volume of Sales Value (Revenue) for the year 2007-08 are negative value which is imaginary.

Table 4.6.1 and Table 4.6.2 denote mill wise, year wise Break-even Recovery and Cut off Recovery.

TABLE 4.6
Year wise and Mill wise Break-Even Recovery and Cut off Recovery

TABLE 4.6.1 Break Even Recovery(%)															
	ACSM	AMCSM	SCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM
2002-03	13.67	15.03	11.29	15.30	13.64	0.00	13.46	14.23	12.59	10.73	12.40	9.69	9.10	12.76	11.57
2003-04	16.20	11.73	12.89	10.83	14.04	0.00	11.21	15.01	10.04	8.77	13.56	8.58	9.07	11.95	9.35
2004-05	11.74	11.35	10.40	9.77	9.61	0.00	9.24	12.54	9.14	15.81	14.22	8.18	8.01	8.70	9.50
2005-06	10.72	15.30	10.03	10.82	10.63	0.00	9.25	11.43	9.62	11.22	14.52	8.54	7.89	10.54	8.43
2006-07	13.76	10.04	9.99	12.67	12.47	15.81	12.04	14.16	10.47	15.21	15.00	9.69	9.21	10.52	9.50
2007-08	13.36	10.82	11.39	12.44	13.95	15.83	12.40	14.62	12.10	0.00	15.03	11.30	10.43	12.15	11.42
2008-09	9.21	9.43	8.52	8.50	9.16	11.43	9.65	10.12	8.99	10.23	9.93	7.87	8.53	10.01	8.77
2009-10	10.93	9.40	6.98	7.31	8.27	9.46	8.57	9.64	9.01	11.10	10.28	6.74	6.50	7.27	7.15
2010-11	11.74	10.30	8.46	8.20	9.54	13.24	10.66	11.35	8.58	11.62	14.71	9.81	8.33	9.94	8.60
2011-12	13.12	11.27	9.23	11.08	11.09	12.70	10.75	12.46	10.83	11.20	14.35	10.61	9.01	9.65	8.93
Millwise Average	12.45	11.47	9.92	10.69	11.24	7.85	10.72	12.56	10.14	10.59	13.40	9.10	8.61	10.35	9.32
TABLE 4.6.2 Cut off Recovery (%)															
	ACSM	AMCSM	SCSM	K1CSM	DCSM	NCSM	VCSM	TCSM	CCSM	TTCSM	NPKRCSM	MRKCSM	CYSM	SSCSM	K2CSM
2002-03	8.56	9.96	8.38	8.31	9.46	10.18	8.70	8.95	8.73	6.41	7.12	7.31	7.22	9.18	8.00
2003-04	5.57	7.43	6.91	6.40	9.14	0.00	6.02	7.08	6.97	6.73	5.76	6.64	7.10	6.64	5.70
2004-05	4.65	6.32	4.93	6.14	6.73	0.00	5.61	6.04	6.73	4.98	4.40	6.01	6.39	6.21	7.57
2005-06	7.08	6.24	7.64	7.24	7.92	7.99	6.98	7.41	7.01	6.88	6.13	6.52	6.38	8.39	6.58
2006-07	9.90	7.46	7.92	8.89	9.56	10.09	9.15	9.59	8.43	10.20	8.95	8.15	7.83	8.80	7.66
2007-08	9.38	7.54	9.13	8.91	10.74	10.43	9.31	10.07	9.37	9.69	9.42	9.24	8.98	10.36	9.71
2008-09	5.98	6.46	6.37	6.01	6.45	7.44	6.78	5.93	6.64	6.11	5.71	6.06	7.08	8.12	7.07
2009-10	6.12	6.60	5.87	5.45	6.35	5.00	5.88	4.86	6.74	5.42	5.56	4.89	5.51	6.18	5.15
2010-11	8.33	7.60	7.39	6.64	7.46	7.79	7.78	7.83	6.76	7.94	7.51	7.13	7.03	7.53	7.37
2011-12	8.34	8.32	8.36	7.82	9.07	8.70	8.07	8.99	7.97	7.77	7.95	7.88	7.75	8.35	7.47
Millwise Average	7.39	7.39	7.29	7.18	8.29	6.76	7.43	7.67	7.53	7.21	6.85	6.98	7.13	7.98	7.23

Source: Secondary Data

From Table 4.6 it is concluded that the overall average Break-Even Recovery for nine Co-operative Sugar Mills likewise. K2 Co-operative Sugar Mill (8.43% for 2005-06), S.Siva Co-operative Sugar Mill (7.27% for 2009-10), Cheyyar Co-operative Sugar Mill (8.01% for 2004-05, 7.89% for 2005-06, 8.53% for 2008-09, 6.50% for 2009-10 and 8.33% for 2010-11), MRK Co-operative Sugar Mill (8.18%for 2004-05, 7.87% for 2008-09 and 6.74% for 2009-10), Chengalrayan

Co-operative Sugar Mill (8.99% for 2008-09, 9.01% for 2009-10 and 8.58% for 2010-11), Vellore Co-operative Sugar Mill (8.57% for 2009-10), K1 Co-operative Sugar Mill (8.50% for 2008-09, 7.31% for 2009-10, and 8.20% for 2010-11), Salem Co-operative Sugar Mill (8.52% for 2008-09, 6.98% for 2009-10, 8.48% for 2010-11 and 9.23% for 2011-12), Amaravathi Co-Operative Sugar Mill (9.40% for 2009-10) are below the basic recovery % (upto 2004-05 it was 8.50% and from 2005-06 to 2007-08 it was 9% and then from 2008-09 onwards it is 9.5%) for sugarcane price fixation by Government of India. Except 2002-03, 2006-07 and 2007-08 all the other years attained Cut Off Recovery by all the Co-operative Sugar Mill in Tamil Nadu, which are within the basic recovery % (upto 2004-05 it was 8.50% and from 2005-06 to 2007-08 it was 9% and then from 2008-09 onwards it is 9.5%) for sugarcane price fixation by Government of India.

In this Break-Even Recovery analysis, Table 4.6 exhibits S.Siva Co-operative Sugar Mill, K2 Co-operative Sugar Mill, Cheyyar Co-operative Sugar Mill and MRK Co-operative Sugar Mill are within the basic recovery % (upto 2004-05 it was 8.50% and from 2005-06 to 2007-08 it was 9% and then from 2008-09 onwards it is 9.5%) for sugarcane price fixation by Government of India, due to introduction of Co-generation Units and TNPL Boiler in their Sugar Mills.

From the foregoing study of various aspects related to Break-even Recovery of sugar in the Co-operative Sugar Mill, the following are observed. Salem Co-operative Sugar Mill, S.Siva Co-operative Sugar Mill, MRK Co-operative Sugar Mill, Cheyyar Co-operative Sugar Mill, K2 Co-operative Sugar Mill are running their factories with good performance in the areas of 1. Break-even recovery (%), 2. Cut off recovery (%), 3. Break-even Sugar Production (in Qtls), 4. Break-even cane crushing (MTs) and 5. Break -even volume of Sales value (Revenue) over the period of study, due to introduction of Co-gen plant and TNPL Boiler in their Sugar Mills.

National Co-operative Sugar Mill and NPKR Co-operative Sugar Mill have not reached so far 1. Break-even recovery (%), 2. Cut off recovery (%), 3. Break-even Sugar Production (Qtls), 4. Break-even cane crushing (MTs) and 5. Break-even volume of Sales Value (Revenue) over the period of analysis, due to insufficient cane and supervision in the line of plant operation and in cane management. Trend in sugar production, reflects according to the quality and quantity of cane crushed because the sugar production is depending upon the quantity and quality of sugar cane only.

In a nutshell, from the above Break-Even analysis, these Co-operative Sugar Mill in Tamil Nadu have to ensure that the Break-even Recovery is not below Basic Recovery for price fixation of Sugar Cane (upto 2004-05 it was 8.50% and from 2005-06 to 2007-08 it was 9% and then from 2008-09 onwards it is 9.5%) and in particular Mills average recovery% in that may be maintained above the basic recovery % for the purpose of fixation of sugarcane price by Government of India.

Upto 2004-05, the actual recovery in all the Co-operative Sugar Mill (Except National Co-operative Sugar Mill and NPKRR Co-operative Sugar Mill) are more than basic recovery (8.5%),

between 2005-06 and 2009-10, the overall average cut off recovery are within the basic recovery (8.5% and 9.00%), for the year 2008-09 and 2009-10 overall average Break-Even Recovery is within the Year Average Recovery.

4.4. SUMMARY

Break-even analysis is an important tool or indicator of a firm's performance. In this analysis, cost is classified as variable cost, semi-variable cost and fixed cost. On the basis of these costs and Revenue, Break-even analysis is done. Based on this analysis, timely decision is taken to improve the performance of a Sugar Mill.

Break-Even Analysis is a technique which is used by the management of all sectors by Management Accountants to improve the Firm's profitability and to improve the progress in production and revenue by computing with the help of certain formulae by getting basic data such as Fixed Cost, Variable Cost and Sales revenue of their finished products. By this technique, the Break-Even point can be arrived.

Reference

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