



Cost-Volume-Profit and Breakeven Analysis

CVP Input Variables

Q = units Sold

v = unit variable cost

f = total fixed cost

p = units selling price

N = operating profit

$p - v$ = unit contribution margin

Co. ABC Product Data		
	Per Unit	Total
Fixed cost		\$ 50,000
Revenue	\$ 80	
Variable cost	35	
Planned production		1,000
Planned sales		2,000

Note: Shaded cells capture a range of possible values used to perform Monte Carlo simulation.

Co. ABC Income Statement		
	Amount	Percent
Sales	\$ 160,000	
Variable costs	35,000	
Contribution margin	\$ 125,000	56.3%
Fixed costs	50,000	
Profit	\$ 75,000	

Co. ABC Breakeven Analysis		
	Equation	Value
Breakeven units	$Q = (f + N) / (p - v)$	1,111
Breakeven dollars	$Y = (f + N) / (p - v) / p$	\$ 88,889

Note: $N = 0$ since breakeven assumes that no profit is earned.

Monte Carlo Simulation Summary

Summary Information	
Workbook Name	Cost-Volume-Profit Analysis.xls
Number of Simulations	3
Number of Iterations	100
Number of Inputs	2
Number of Outputs	1
Sampling Type	Monte Carlo
Simulation Start Time	5/19/2007 22:55
Simulation Stop Time	5/19/2007 22:55
Simulation Duration	00:00:02
Random Seed	394569689

Output			Statistics						
Name	Cell	Sim	Minimum	Mean	Maximum	x1	p1	x2	p2
Cost-Volume Profit	D34	1 - Worst Case	\$ 7,119	\$ 70,691	\$ 139,234	\$ 15,710	5%	\$ 127,987	95%
Cost-Volume Profit	D34	2 - Base Case	\$ (27,881)	\$ 35,691	\$ 104,234	\$ (19,290)	5%	\$ 92,987	95%
Cost-Volume Profit	D34	3 - Best Case	\$ (62,881)	\$ 691	\$ 69,234	\$ (54,290)	5%	\$ 57,987	95%

Input			Statistics						
Name	Cell	Sim	Minimum	Mean	Maximum	x1	p1	x2	p2
Planned Production	F22	1 - Worst Case	1000	1000	1000	1000	5%	1000	95%
Planned Production	F22	2 - Base Case	2000	2000	2000	2000	5%	2000	95%
Planned Production	F22	3 - Best Case	3000	3000	3000	3000	5%	3000	95%
Planned Sales	F23	1 - Worst Case	1,151	1,946	2,803	1,259	5%	2,662	95%
Planned Sales	F23	2 - Base Case	1,151	1,946	2,803	1,259	5%	2,662	95%
Planned Sales	F23	3 - Best Case	1,151	1,946	2,803	1,259	5%	2,662	95%

@RISK Output Details Report

Output Statistics

Outputs Simulation Statistics / Cell	Cost-Volume-Profit 1 - Worst Case \$D\$34	Cost-Volume-Profit 2 - Base Case \$D\$34	Cost-Volume-Profit 3 - Best Case \$D\$34
Minimum	\$ 7,119	\$ (27,881)	\$ (62,881)
Maximum	\$ 139,234	\$ 104,234	\$ 69,234
Mean	\$ 70,691	\$ 35,691	\$ 691
Standard Deviation	\$ 32,557	\$ 32,557	\$ 32,557
Variance	1059975318	1059975327	1059975309
Skewness	0.111203576	0.111203566	0.111203574
Kurtosis	2.306734161	2.306734209	2.306734165
Number of Errors	0	0	0
Mode	\$ 37,224	\$ 2,224	\$ (32,776)
5.0%	\$ 15,710	\$ (19,290)	\$ (54,290)
10.0%	\$ 27,650	\$ (7,350)	\$ (42,350)
15.0%	\$ 35,446	\$ 446	\$ (34,554)
20.0%	\$ 37,486	\$ 2,486	\$ (32,514)
25.0%	\$ 47,088	\$ 12,088	\$ (22,912)
30.0%	\$ 52,388	\$ 17,388	\$ (17,612)
35.0%	\$ 56,699	\$ 21,699	\$ (13,301)
40.0%	\$ 61,264	\$ 26,264	\$ (8,736)
45.0%	\$ 64,455	\$ 29,455	\$ (5,545)
50.0%	\$ 68,201	\$ 33,201	\$ (1,799)
55.0%	\$ 73,901	\$ 38,901	\$ 3,901
60.0%	\$ 78,060	\$ 43,060	\$ 8,060
65.0%	\$ 81,951	\$ 46,951	\$ 11,951
70.0%	\$ 89,504	\$ 54,504	\$ 19,504
75.0%	\$ 93,685	\$ 58,685	\$ 23,685
80.0%	\$ 100,818	\$ 65,818	\$ 30,818
85.0%	\$ 106,605	\$ 71,605	\$ 36,605
90.0%	\$ 117,537	\$ 82,537	\$ 47,537
95.0%	\$ 127,987	\$ 92,987	\$ 57,987
Filter Minimum			
Filter Maximum			
Type (1 or 2)			
# Values Filtered	0	0	0
Scenario #1	>75%	>75%	>75%
Scenario #2	<25%	<25%	<25%
Scenario #3	>90%	>90%	>90%
Target #1 (Value)			
Target #1 (Perc%)			
Target #2 (Value)			
Target #2 (Perc%)			
Target #3 (Value)			
Target #3 (Perc%)			
Target #4 (Value)			
Target #4 (Perc%)			
Target #5 (Value)			
Target #5 (Perc%)			
Target #6 (Value)			
Target #6 (Perc%)			
Target #7 (Value)			
Target #7 (Perc%)			
Target #8 (Value)			
Target #8 (Perc%)			
Target #9 (Value)			
Target #9 (Perc%)			
Target #10 (Value)			
Target #10 (Perc%)			