

DSC5211C QUANTITATIVE RISK

MANAGEMENT

Week 11 Workshop

Group: 15

Group Members:

Shivam Bansal (A0186742W)

Wu Zheyu (A0186111N)

MS Karthikeyan (A0186448N)

Task 1

Number of Scenarios	100	200	1000	10000
Orders	4090.59	4048.97	4091.27	4188.37
Exp_profit	215929.85	217987.18	219833.87	222367.67
Exp_sales	2977.42	2989.67	3016.59	3061.35
Exp_lost_sales	98.30	108.96	120.58	131.30
Exp_leftover	1113.17	1059.30	1074.68	1127.02
Stockout_prob	0.19	0.20	0.20	0.20

As the number of scenarios increased, the number of orders are increasing along with the expected profit and the sales. However the expected lost sales and left over items are also increasing.

Task 2

Beta	0.9	0.99	0.999
Orders	1612.68	166.55	0.00
Exp_profit	124385.13	13241.81	0.00
Exp_sales	1566.39	165.73	0.00
Exp_lost_sales	1570.79	2971.45	0.00
Exp_leftover	46.29	0.82	0.00
Stockout_prob	0.92	0.99	1.00

As the Beta Value increased from 0.9 to 0.999, the number of orders are decreasing drastically to zero along with the expected profit and the sales. However the expected

lost sales and left over items are also increasing. This means that when we consider to lose less, it will result in being more conservative for ordering.

Task 3

Beta	0.0.	0.25	0.5	0.75	0.95	0.99999
Orders	4090.59	3460.04	2815.84	2184.20	1155.39	0.00
Exp_profit	219833.87	213636.38	194521.63	162559.11	90369.65	0.00
Exp_sales	3016.46	2828.37	2508.39	2062.43	1134.77	0.00
Exp_lost_sales	120.72	308.81	628.79	1074.75	2002.40	3137.18
Exp_leftover	1074.13	631.67	307.46	121.77	20.62	0.00
Stockout_prob	0.20	0.40	0.60	0.80	0.96	1.00
Worst case	-81811.77	-69200.77	-56316.90	-43684.08	-23107.83	0.00

The expected profit will be obtained when beta is 0 and the worst case profit will be obtained when beta is at 0.99999.