BIA 650 A Homework#8 W&A Chapter 7, Problem 54

# Management Overview

Problem Statement:

The Objective is to come up with a portfolio that has an expected return of at least 0.12 and minimize the risk (variance).

Data Sources:

* + The **inputs** are Units Costs for Product 1 and Product 2
  + The key **decision variables** are Prices charged for Product 1 and Product 2
  + **Constraint** is thatthe Prices charged must be greater than Costs
  + **Output** is the Total Profit.

Model Approach:

* + Separate the data into inputs, decision variables, constraints and output and enter them on the spreadsheet.
  + The constraints, Decision Variables and objective cell to be minimized are added in Solver and it is run. The algorithm we use is GRG Non-Linear.

Sensitivity Analysis:

* **Product Costs Vs Profits**

When the Unit cost of the Products can be reduced, the Profits can be increased. The increase in profit per unit decrease in the cost is almost the same for both product 1 and 2. For a 20cent decrease in cost the profit increases by 6$ for both products.

Solution:

* For maximum profits, the Price of Product 1 should be 22$ and that of Product 2 should be 36$
* The Company Should work on decreasing the Cost of Product 2 because it is easier to bring down the cost from 12$ to 11.8$(Product 2) than it is to bring down from 5$ to 4.8$ (Product 1) and Profit increases by 6$ in both cases. So, it is wiser to work on reducing Product 2 Costs.