Module 04 – Multiperiod Modeling

Exploratory Data Analysis

*In this section, you should perform some data analysis on the data provided to you. Please format your findings in a visually pleasing way and please be sure to include these cuts:*

* *Make a nicely formatted table with the needed data on each investment*

Model Formulation

*Write the formulation of the model into here prior to implementing it in your Excel model. Be explicit with the definition of the decision variables, objective function, and constraints*

MIN= A\_1+B\_1+C\_1+D\_1+E\_1

Month 3 - 1.0421B1+ 1.0199A2= 250

Month 4- 1.0199A3- 1A4=0

Month 5- 1.0645C2+ 1.0421B3+ 1.0199A4-1A5-1B5-1C5=0

Month 6- 1.1092E1 +1.0199A5- 1A6= 250

Month 7- 1.0868D3+1.0421B5+1.0199A6-A7-B7=0

Month 8- 1.0199A7=0

Month 9-1.0421B7=0

Month 10- 1.0645C5=500

Model Optimized for Least Cost out of Pocket

*Implement your formulation into Excel and be sure to make it neat. This section should include:*

* *A screenshot of your optimized final model (formatted nicely, of course)*
* *A text explanation of what your model is recommending*
* *Add some sort of visualization. Some ideas:*
  + *A pie chart or stacked bar chart to compare money out of pocket vs end amount*
  + *A line chart to show either current amount or cumulative amount invested in each investment*



Model with Stipulation

*Please copy the tab of your original model before continuing with the next part to avoid messing up your original solution.*

*Try one of these 2 scenarios:*

* *If we remove the midterm payments and instead pay the entirety at the end of the time period, does your model change at all? If so, why may there be a change?*

*When I removed the midterm payments and pay the entirety at the end of the time period the total invested in one month decreased. It went from* $ 897.81 to $ 865.04. When I removed those midterm payments the investments stayed untouched for longer, allowing them to accumulate more interest and returns before being cashed out. Almost all of the investments increased. This might have been because these funds had more money allocated when I removed midterm payments. Allowing the funds to stay invested longer. The only investment that decreased was E1, this suggests that there was a shift in the investment strategy, probably due to its lower return compared to other options.