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

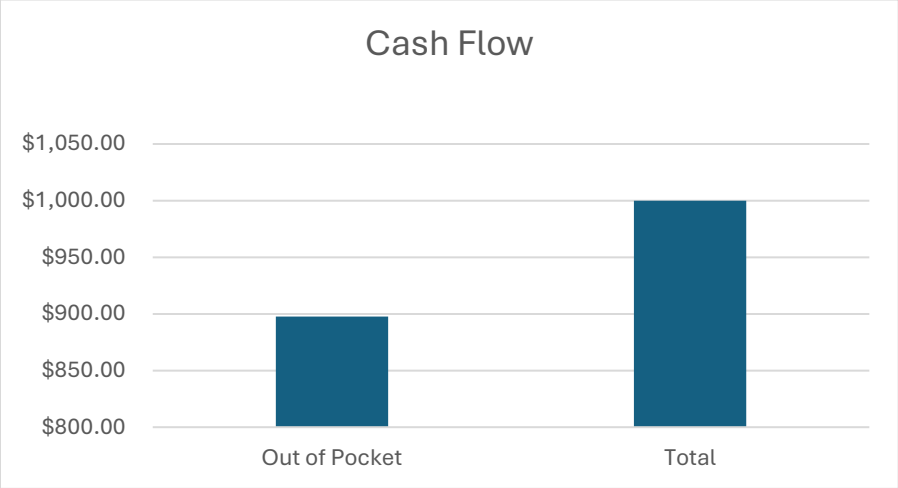
Model Optimized for Least Cost out of Pocket

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*

	Month of Cashflow				Cash Flow Summary for Month									
Investment	Inflow	Outflow	Amount	Return	1	2	3	4	5	6	7	8	9	10
Bonbon Balance Investments(A)	1	1	0	1.99%	-1									
Bubblegum Benchmark Fund (B)	1	3	672.4196	4.21%	-1	<--->	1.0421							
TaffyTrend Ventures (E)	1	6	225.3877	10.92%	-1	<--->	<--->	<--->	<--->	1.1092				
Bonbon Balance Investments(A)	2	3	0	1.99%		-1	1.0199							
CandyCrest Holdings (c)	2	5	0	6.45%		-1	<--->	<--->	1.0645					
Bonbon Balance Investments(A)	3	4	0	1.99%			-1	1.0199						
Bubblegum Benchmark Fund (B)	3	5	450.7284	4.21%			-1	<--->	1.0421					
SugarFund Capital (D)	3	7	0	8.68%			-1	<--->	<--->	<--->	1.0868			
Bonbon Balance Investments(A)	4	5	0	1.99%				-1	1.0199					
Bonbon Balance Investments(A)	5	6	0	1.99%					-1	1.0199				
Bubblegum Benchmark Fund (B)	5	7	0	4.21%					-1	<--->	1.0421			
CandyCrest Holdings (C)	5	10	469.7041	6.45%					-1	<--->	<--->	<--->	<--->	1.0645
Bonbon Balance Investments(A)	6	7	0	1.99%						-1	1.0199			
Bonbon Balance Investments(A)	7	8	0	1.99%							-1	1.0199		
Bubblegum Benchmark Fund (B)	7	9	0	4.21%							-1	<--->	1.0421	
Bonbon Balance Investments(A)	1	1	0	1.99%	-1									
Bonbon Balance Investments(A)	1	1	0	1.99%	-1									
Total Invested in Month 1 ->			$897.81	Surplus Funds	0	250	0	-5.68434E-14	250	0	0	0	500	
				Req'd Payments	0	$250	0	0	$250	0	0	$0	500	

Investment	Months to Mature	Return
A	1	1.99%
B	2	4.21%
C	3	6.45%
D	4	8.68%
E	5	10.92%



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.