

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

Month 3 - $1.02B1 + 1.042 = 250$

Month 4- $1.02A3 - 1A4 = 0$

Month 5- $1.065C2 + 1.0421C3 + 1.02A4 - 1A5 - 1B5 - 1C5 = 0$

Month 6- $1.02E1 + 1.087A5 - 1.11A6 = 250$

Month 7- $1.087D3 + 1.042B5 + 1.02A6 - A7 - B7 = 0$

Month 8- $1.65 + 1.02 - 1A7 = 0$

Month 9- $1.02C5 = 0$

Month 10- $1.02C5 = 500$

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*
 - *Any other solution you may have*

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?*
- *An investor normally tries to not be oversubscribed/overexposed to one single investment. Can you add a constraint to your model to limit the amount of exposure in any single investment and describe how the model has changed?*

When I removed the midterm payments and paid the entirety at the end of the time the total invested in one month decreased. It went from \$880.46. When I removed those midterm payments the investments stayed untouched for longer, allowing them to accumulate more interest and returns before being cashed out. The majority of all 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 Bubblegum Benchmark Fund in E1, the suggestion that there was a shift in the investment strategy, probably due to its lower return compared to other options.

Investment	inflow	outflow	amount	return	1	2	3	4	5	6	7	8	9	10		inflow	outflow	
Bubblegum Benchmark Fund	1	2	0	2.0%	-1	1.02										Bubblegum Benchmark Fund	1	2
CandyCorn Capital Partners	1	3	655.14	4.2%	-1	<--->	1.042									Bubblegum Benchmark Fund	2	3
GummyBear Growth Fund	1	6	225.33	11.0%	-1	<--->	<--->	<--->	<--->	1.11						Bubblegum Benchmark Fund	3	4
Bubblegum Benchmark Fund	2	3	0	2.0%		-1	1.02									Bubblegum Benchmark Fund	4	5
CottonCandy Capital	2	5	0	6.5%		-1	<--->	<--->	1.065							Bubblegum Benchmark Fund	5	6
Bubblegum Benchmark Fund	3	4	0	2.0%			-1	1.02								Bubblegum Benchmark Fund	6	7
CandyCorn Capital Partners	3	5	0	4.2%			-1	<--->	1.042							Bubblegum Benchmark Fund	7	8
Gumball Growth Group	3	7	432.78	8.7%			-1	<--->	<--->	<--->	1.087					Bubblegum Benchmark Fund	8	9
Bubblegum Benchmark Fund	4	5	0	2.0%				-1	1.02							Bubblegum Benchmark Fund	9	10
Bubblegum Benchmark Fund	5	6	0	2.0%					-1	1.02						CandyCorn Capital Partners	1	3
CandyCorn Capital Partners	5	7	0	4.2%					-1	<--->	1.042					CandyCorn Capital Partners	3	5
CottonCandy Capital	5	8	0	6.5%					-1	<--->	<--->	1.065				CandyCorn Capital Partners	5	7
Bubblegum Benchmark Fund	6	7	0	2.0%						-1	1.02					CandyCorn Capital Partners	7	9
Bubblegum Benchmark Fund	7	8	0	2.0%							-1	1.02				CottonCandy Capital	2	5
CandyCorn Capital Partners	7	9	470.39	4.2%							-1	<--->	1.042			CottonCandy Capital	5	8
Bubblegum Benchmark Fund	8	9	0	2.0%								-1	1.02			Gumball Growth Group	3	7
Bubblegum Benchmark Fund	9	10	490.24	2.0%									-1	1.02		GummyBear Growth Fund	1	6
			880.46		Surplus Funds	0	250	0	0	250	0	0	0	500				
					Req Payment	0	250	0	0	250	0	0	0	500				