

Portfolio optimization

Aaltoes Advicer

November 6, 2024

This report is automatically generated by python script, any unformatting is sad, but inevitable.

Optimization of Porfolio 1

For the portfolio 1, we are given next input data (see Table 1):

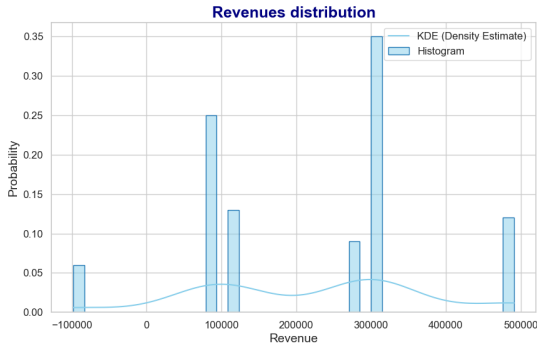
Table 1: Input data for Portfolio 1

project	profit	cost	risk	dependence
Nexify	311155.440000	64363.350000	0.600000	2,7
Blipzy	151022.840000	23983.360000	0.810000	-
Quorix	129620.050000	65805.980000	0.080000	-
Vyral	198087.000000	23804.060000	0.740000	8
Hublit	185598.120000	39154.230000	0.760000	-
Fluxion	90760.820000	28036.210000	0.710000	-
Snaggle	218004.980000	18498.930000	0.420000	5,10
Aerify	141632.490000	52165.790000	0.330000	-
Pivalt	102781.750000	34762.000000	0.760000	-
Syncra	185179.250000	40048.500000	0.170000	-

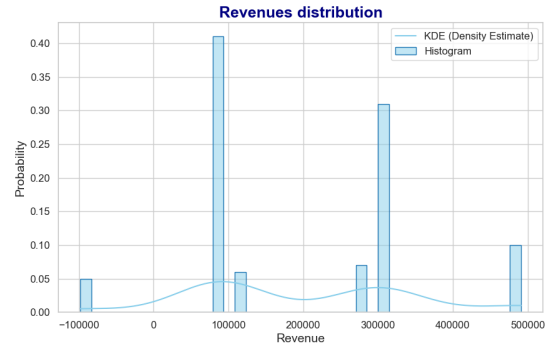
Based on the provided data, the model managed to find next solution that satisfies all of the constraints of the problem (see Table 2):

Table 2: Advised projects to invest for Portfolio 1

project	profit	cost	risk	dependence
Hublit	185598.120000	39154.230000	0.760000	-
Snaggle	218004.980000	18498.930000	0.420000	5,10
Syncra	185179.250000	40048.500000	0.170000	-



(a) Distribution of revenues on a train set



(b) Distribution of revenues on a test set

Figure 1: Distribution of revenues given provided solution

As you can see from the plot (see Figure 1), the revenues on the test approximately follow the train set (if there are enough of scenarios). With given solution, we managed to get expected revenue of 222084.69€. Expected value of the perfect information is 66983.61€ and price of stochastic solution is 79214.37€. The portfolio uses 97701.66/100000€ from budget.

Optimization of Porfolio 2

For the portfolio 2, we are given next input data (see Table 3):

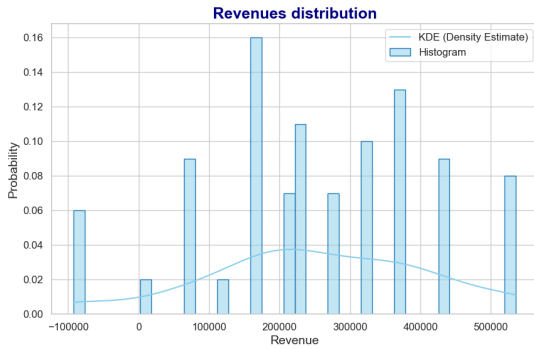
Table 3: Input data for Portfolio 2

project	profit	cost	risk	dependence
Nexla	727800.170000	57898.270000	0.110000	2,3,4
Verily	204953.940000	50266.410000	0.160000	1,3,4
Zapira	207355.700000	35908.180000	0.580000	-
Bluza	79348.650000	65820.900000	0.850000	-
Klyro	194687.760000	29130.240000	0.750000	-
Lymba	158987.150000	31717.690000	0.340000	-
Fynq	97249.350000	11648.620000	0.450000	-
Jovix	89150.200000	32373.680000	0.290000	-
Astera	163437.110000	12660.050000	0.390000	-
Nuvy	133639.370000	46982.210000	0.760000	9

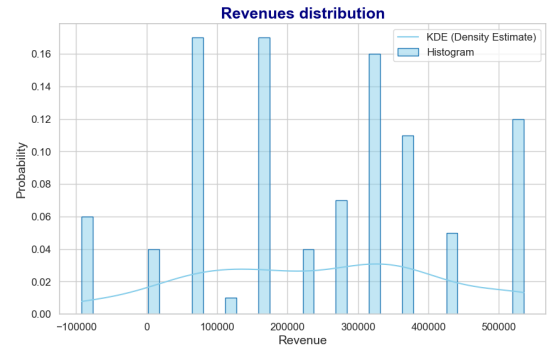
Based on the provided data, the model managed to find next solution that satisfies all of the constraints of the problem (see Table 4):

Table 4: Advised projects to invest for Portfolio 2

project	profit	cost	risk	dependence
Zapira	207355.700000	35908.180000	0.580000	-
Lymba	158987.150000	31717.690000	0.340000	-
Fynq	97249.350000	11648.620000	0.450000	-
Astera	163437.110000	12660.050000	0.390000	-



(a) Distribution of revenues on a train set



(b) Distribution of revenues on a test set

Figure 2: Distribution of revenues given provided solution

As you can see from the plot (see Figure 2), the revenues on the test approximately follow the train set (if there are enough of scenarios). With given solution, we managed to get expected revenue of 252819.65€. Expected value of the perfect information is 102383.17€ and price of stochastic solution is 105485.57€. The portfolio uses 91934.54/100000€ from budget.

Optimization of Porfolio 3

For the portfolio 3, we are given next input data (see Table 5):

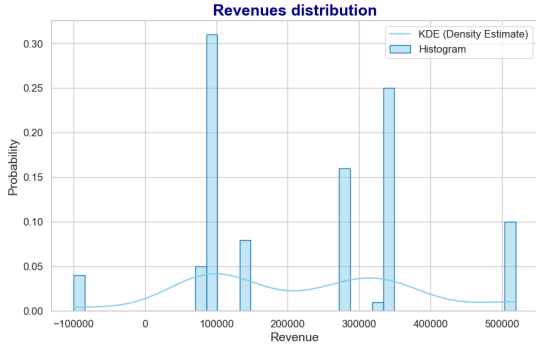
Table 5: Input data for Portfolio 3

project	profit	cost	risk	dependence
Skynex	247466.870000	27300.760000	0.510000	-
Xylofy	106129.520000	52228.680000	0.560000	-
Mavira	181011.450000	16161.930000	0.620000	-
Pulsea	190618.410000	56282.100000	0.140000	-
Zentra	177994.350000	46959.160000	0.440000	-
Blythe	164685.350000	36101.670000	0.750000	-
Genexy	114814.060000	33573.860000	0.200000	9
Prisma	123172.900000	20619.130000	0.220000	-
Qorex	204580.620000	15875.190000	0.840000	-
Lunify	89281.110000	54370.630000	0.290000	-

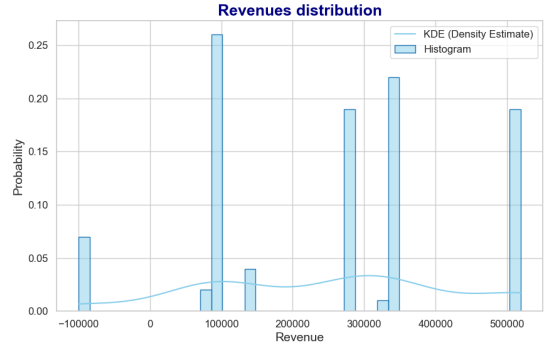
Based on the provided data, the model managed to find next solution that satisfies all of the constraints of the problem (see Table 6):

Table 6: Advised projects to invest for Portfolio 3

project	profit	cost	risk	dependence
Skynex	247466.870000	27300.760000	0.510000	-
Mavira	181011.450000	16161.930000	0.620000	-
Pulsea	190618.410000	56282.100000	0.140000	-



(a) Distribution of revenues on a train set



(b) Distribution of revenues on a test set

Figure 3: Distribution of revenues given provided solution

As you can see from the plot (see Figure 3), the revenues on the test approximately follow the train set (if there are enough of scenarios). With given solution, we managed to get expected revenue of 223371.39€. Expected value of the perfect information is 142387.08€ and price of stochastic solution is 41761.73€. The portfolio uses 99744.79/100000€ from budget.

Optimization of Porfolio 4

For the portfolio 4, we are given next input data (see Table 7):

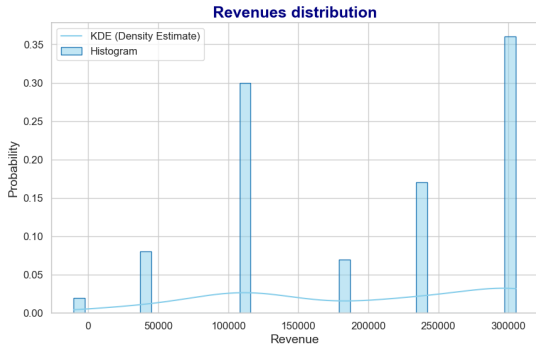
Table 7: Input data for Portfolio 4

project	profit	cost	risk	dependence
Zapify	238602.810000	69958.870000	0.300000	-
Flexora	161743.870000	66862.980000	0.520000	-
Jynko	69786.030000	40887.860000	0.230000	-
Boldra	193787.770000	25939.650000	0.360000	3
Wavixa	121797.390000	52354.060000	0.260000	-
Lumixa	121720.700000	13258.790000	0.160000	-
Ryzon	112140.380000	55632.920000	0.360000	-
Tivara	114674.250000	67855.110000	0.230000	-
Cyvex	98270.700000	52653.500000	0.640000	1,2
Opnix	118121.100000	32857.140000	0.850000	-

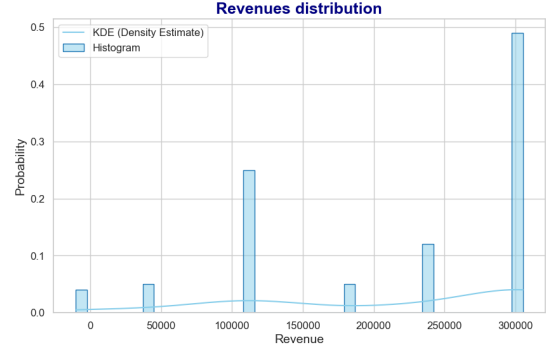
Based on the provided data, the model managed to find next solution that satisfies all of the constraints of the problem (see Table 8):

Table 8: Advised projects to invest for Portfolio 4

project	profit	cost	risk	dependence
Jynko	69786.030000	40887.860000	0.230000	-
Boldra	193787.770000	25939.650000	0.360000	3
Lumixa	121720.700000	13258.790000	0.160000	-



(a) Distribution of revenues on a train set



(b) Distribution of revenues on a test set

Figure 4: Distribution of revenues given provided solution

As you can see from the plot (see Figure 4), the revenues on the test approximately follow the train set (if there are enough of scenarios). With given solution, we managed to get expected revenue of 199360.15€. Expected value of the perfect information is 68849.39€ and price of stochastic solution is -0.0€. The portfolio uses 80086.3/100000€ from budget.

Optimization of Porfolio 5

For the portfolio 5, we are given next input data (see Table 9):

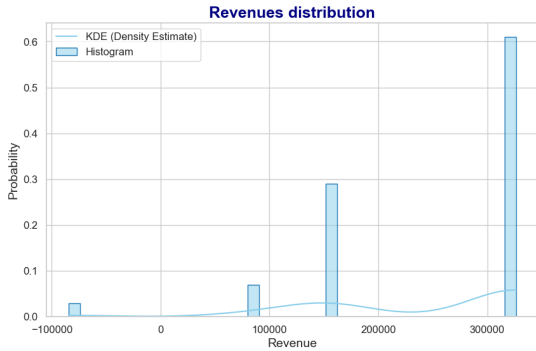
Table 9: Input data for Portfolio 5

project	profit	cost	risk	dependence
Vynix	243664.880000	54929.480000	0.530000	3,4
Qubix	115459.080000	47943.370000	0.300000	-
Tekly	237963.970000	67753.880000	0.080000	-
Fyntra	136496.110000	22655.230000	0.400000	-
Zybel	171600.410000	57321.270000	0.140000	-
Lytrica	119700.070000	21645.840000	0.780000	-
Glimzy	84728.290000	60433.690000	0.100000	9
Snappa	128857.630000	34572.040000	0.730000	-
Twivio	168676.850000	57601.560000	0.390000	-
Klyra	172713.570000	16612.400000	0.290000	-

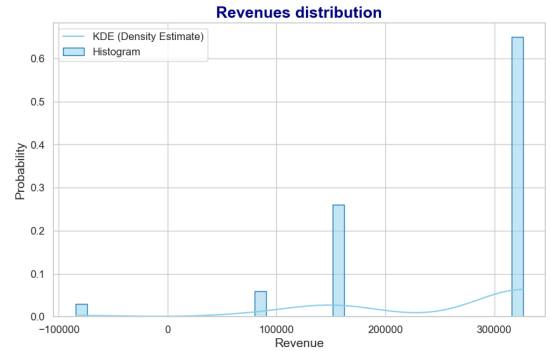
Based on the provided data, the model managed to find next solution that satisfies all of the constraints of the problem (see Table 10):

Table 10: Advised projects to invest for Portfolio 5

project	profit	cost	risk	dependence
Tekly	237963.970000	67753.880000	0.080000	-
Klyra	172713.570000	16612.400000	0.290000	-



(a) Distribution of revenues on a train set



(b) Distribution of revenues on a test set

Figure 5: Distribution of revenues given provided solution

As you can see from the plot (see Figure 5), the revenues on the test approximately follow the train set (if there are enough of scenarios). With given solution, we managed to get expected revenue of 247246.52€. Expected value of the perfect information is 77790.95€ and price of stochastic solution is 91356.65€. The portfolio uses 84366.28/100000€ from budget.