

Exercise 1STATEMENT DATA:

Financial market with two risky securities, X and Y (no risk-free securities).

Budget for a rational investor: € 1,000,000.

Markowitz model: mean-variance context.

	Expected Return	Risk (SD)	Weight X	Weight Y
X	18%	5,92%	–	–
Y	7%	4,36%	–	–
Global Minimum Variance Portfolio (GMVP)	10,87%	3,51%	35,19%	64,81%
Portfolio P	16,9%	5,34%	–	–
Correlation X,Y	0			

Calculate:

a) Portfolio P is an efficient portfolio created by investing 90% of the budget in asset X and the rest in asset Y.

b) If asset X is short selling [-19.63%] and asset Y is bought in cash [119.63%], a portfolio (portfolio N) can be formed, the risk of which (standard deviation) is 5.34%. This portfolio would be efficient.

c) A portfolio C whose risk were as low as possible for an expected return of 13.04% would be efficient. There would be no short sales in this portfolio.

d) A portfolio D whose risk were as low as possible for an expected return of 8.70% would be inefficient. There would be no short sales in this portfolio.

e) A portfolio E whose expected return were 10.87% and whose risk (standard deviation) were 4.21% would be unfeasible.

f) A portfolio G whose expected return were 10.87% and whose risk (standard deviation) were 2.81% would be unfeasible.

g) A portfolio Q whose expected return were 19.10% and whose risk (standard deviation) were 6.52% would be inefficient.

h) To invest in portfolio Q, it would be necessary to sell asset Y in the open so that the initial budget would be € 1,100,000. The investment would increase by € 100,000.

i) A portfolio K with an expected return of 3.70% and a risk (standard deviation) of 5.92% would be inefficient.

j) Investing in a portfolio that consists exclusively of asset X would be efficient.

k) Investing in a portfolio that consists exclusively of asset Y would be inefficient. This asset is therefore not a suitable security for forming a portfolio in combination with the other asset, i.e. asset X.

l) It is possible to design a portfolio with a risk level of 3%.

m) A portfolio with the same risk as the GMV but with a greater return would be unfeasible.