**Answer on Question #42764, Management - Other**

**Assignment**

*factor determine the standard deviation of the portfolio*

**Solution**

Portfolio standard deviation is the standard deviation of a portfolio of investments. It is a measure of variability of the expected returns from a portfolio.

One of the most basic principles of finance is that diversification leads to a reduction in risk unless there is a perfect correlation between the returns on the portfolio investments. We can write a formula for standard deviation of a portfolio:

standard deviation of a portfolio = $\sqrt{\omega_a^2 * \sigma_a^2 + \omega_b^2 * \sigma_b^2 + 2 * \omega_a * \omega_b * Cova, b}$ ,

where

$\omega_a$ , $\omega_b$ are the weights of asset A and B

$\sigma_a^2$ , $\sigma_b^2$ are the dispersions of asset A and B

$Cov$ is a covariance between returns on asset A and B.

And these components determine the standard deviation of the portfolio