

Level II FormulaSheet Sample

Chapter 2 (cont.)	
Marg. contribution of i to P's total risk	$\frac{\partial \sigma_P}{\partial w_i} \times w_i = \frac{\sigma_{iP}}{\sigma_P} w_i = \rho_i \sigma_i w_i = \beta_i \sigma_P w_i$
Total risk of N-asset portfolio	$\sigma_P = \frac{\partial \sigma_P}{\partial w_1} w_1 + \frac{\partial \sigma_P}{\partial w_2} w_2 + \dots + \frac{\partial \sigma_P}{\partial w_N} w_N$
Portfolio's total risk (in risk factor contributions)	$\sigma_P = (\rho_{F_1} \sigma_{F_1} b_1) + (\rho_{F_2} \sigma_{F_2} b_2) + (\rho_{\epsilon} \sigma_{\epsilon})$
Risk of 2-asset portfolio	$\sigma_P = \sqrt{w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \sigma_{1,2}}$
Volatility-weighted weight (w_i)	$1/\sigma_i \Big/ \sum_{j=1}^N 1/\sigma_j$

