7.

(a) $\beta_P = \sum_{i=1}^{3} w_i \cdot \beta_i = \frac{1}{3}(0.9 + 1.1 + 0.6) = 0.867$

(b) $Var(R_P) = \sum_{i=1}^{3} w_i^2 \times \sigma_{\varepsilon i}^2 + \beta_P^2 \sigma_M^2 = (\frac{1}{3})^2 \times (0.01 + 0.015 + 0.011) + 0.867^2 \times 0.014$

$= 0.01452$

(c) ~~porta~~ proportion $= (0.867^2 \times 0.014) / (0.867^2 \times 0.014 + 0.01)$

$= 51.28\%$

10. $\mu_f = 0.07$, $\mu_M = 0.14$, $\sigma_M = 0.12$

(a) ~~若~~ 对 ~~若~~ $\mu_R = 0.11 \Rightarrow w = (\mu_R - \mu_f) / (\mu_M - \mu_f) = (0.11 - 0.07) / (0.14 - 0.07)$

$= 57.14\%$

$\therefore$ 57.14% of money should into the market portolio.

42.86% of money should into the risk-free ~~#~~ asset.

(b) $\sigma_R = w \times \sigma_M = 57.14\% \times 0.12 = 0.06857$

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(a) $\beta_P = \sum_{i=1}^{3} w_i \times \beta_i = \frac{1}{3} \times (0.7 + 0.8 + 0.6) = 0.7$

(b) $Var(R_P) = \sum_{i=1}^{3} w_i^2 \times \sigma_{\varepsilon i}^2 + \beta_P^2 \sigma_M^2 = (\frac{1}{3})^2 (0.01 + 0.025 + 0.012) + 0.7^2 \times 0.02$

$= 0.01502$

(c) Proportion $= (0.7^2 \times 0.02) / (0.7^2 \times 0.02 + 0.01)$

$= 49.495\%$