The Equivalence of Different Returns – The Sharpe Ratio

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$$20(1.09) = 21.8 \qquad \frac{21.8}{20} - 1 \qquad 9\%$$

$$(20+10)(1.09) = 32.7 \quad -10 \quad .1 \qquad \frac{22.6}{20} - 1 = 13\%$$

$$(20+20)(1.09) = 43.6 - 20 - .2 = \qquad \frac{23.4}{20} - 1 \quad (30\%, 17\%)$$

(22.5%, 13%)

(15%, 9%)

1%

Portfolio Return

Volatility (Standard Deviation) of Returns

$$\frac{9\% - 1\%}{15\%} = .533$$

$$\frac{r_p - r_f}{\sigma_p}$$

$$\frac{13\% - 1\%}{22.5\%} = .533$$

$$(\bullet\ 30\%, 17\%)$$

$$(\bullet\ 22.5\%, 13\%)$$

$$\bullet (15\%, 9\%)$$

$$\frac{17\% - 1\%}{30\%} = .533$$

Portfolio Return (y-axis): 0, 5, 10, 15, 20

Volatility (Standard Deviation) of Returns (x-axis): 0, 5, 10, 15, 20, 25, 30, 35