

The background of the slide is a close-up, slightly blurred image of several US dollar bills. The bills are oriented vertically, with the top of the image showing the top edge of the bills. The colors are muted, appearing in shades of grey and white, which makes the text stand out clearly.

Managerial Finance

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Problem solving at the end of Chapter IV

Problem 4-1

Demand for the company product	Probability of demand occurring	Rate of return if this demand occurs
Weak	0.1	-50%
Below average	0.2	-5%
Average	0.4	16%
Above average	0.2	25%
Strong	0.1	60%
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	1	

A background image showing a stack of US dollar bills, with a \$100 bill at the top and several \$20 bills below it. The bills are slightly out of focus, creating a sense of depth.

Answer

$$\hat{r} = \sum_{i=1}^n P_i r_i$$

Calculating rate of return

Demand for the company product	Probability of demand occurring	Rate of return if this demand occurs	
Weak	0.1	0.1 * -50%	-50%
Below average	0.2	+ 0.2 * -5%	-5%
Average	0.4	+ 0.4 * 16%	16%
Above average	0.2	+ 0.2 * 25%	25%
Strong	0.1	+ 0.1 * 60%	60%
	1		

$$\hat{r} = \sum_{i=1}^n P_i r_i$$

$$\hat{r} =$$

Rate of return

Demand for the company product	Probability of demand occurring	Rate of return if this demand occurs
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	<hr/>	
	1	

$$\hat{r} = \sum_{i=1}^n P_i r_i$$

$$\hat{r} = 0.1 * -50\% + 0.2 * -5\% + 0.4 * 16\% + 0.2 * 25\% + 0.1 * 60\%$$
$$= 11.4\%$$

Standard deviation

$$\sigma = \sqrt{\sum_{i=1}^n (r_i - \hat{r})^2 P_i}$$

Standard deviation calculation

Demand for the company product	Probability of demand occurring	Rate of return if this demand occurs
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	<hr/>	
	1	

$$\sigma = \sqrt{\sum_{i=1}^n (r_i - \hat{r})^2 P_i}$$

$$\sigma = \sqrt{(-50\% - 11.4\%)^2 * 0.1 + (-5\% - 11.4\%)^2 * 0.2 + (16\% - 11.4\%)^2 * 0.4 + (25\% - 11.4\%)^2 * 0.2 + (60\% - 11.4\%)^2 * 0.1}$$

$$= 26.7\%$$

Coefficient of variation

$$CV = \frac{\sigma}{\hat{r}}$$

$$CV = \frac{26.7\%}{11.4\%} = 2.34$$

The background of the slide is a close-up, slightly blurred image of several US dollar bills. The bills are stacked and fanned out, showing various denominations and the intricate patterns of the currency. The colors are muted, with a focus on the green and white tones of the paper.

Problem 4-2

- \$35,000 stock with beta 0.8
- \$40,000 stock with beta 1.4
- What is the portfolio beta?

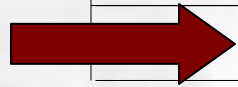
A background image showing a stack of US dollar bills, with a \$100 bill on top and several \$20 bills below it. The bills are slightly out of focus, creating a sense of depth.

Answer

$$b_p = \sum_{i=1}^n w_i b_i$$

Calculations

Investment	Beta
35000	0.8
40000	1.4
75000	



$$b_p = \sum_{i=1}^n w_i b_i$$

$$b_p = \frac{\$35000}{\$75000} * 0.8 + \frac{\$40000}{\$75000} * 1.4 = 1.12$$

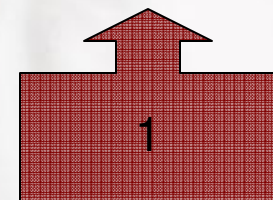
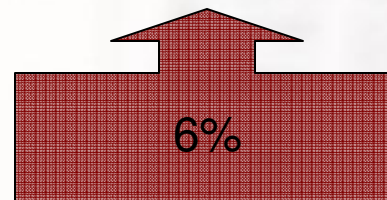
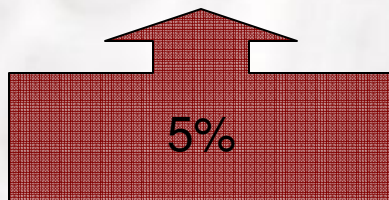
The background of the slide features a close-up, slightly blurred image of several US dollar bills. The bills are stacked and fanned out, showing various denominations and intricate patterns. The colors are muted, with a focus on the green and white tones of the currency. The text is overlaid on this background.

Problem 4-3

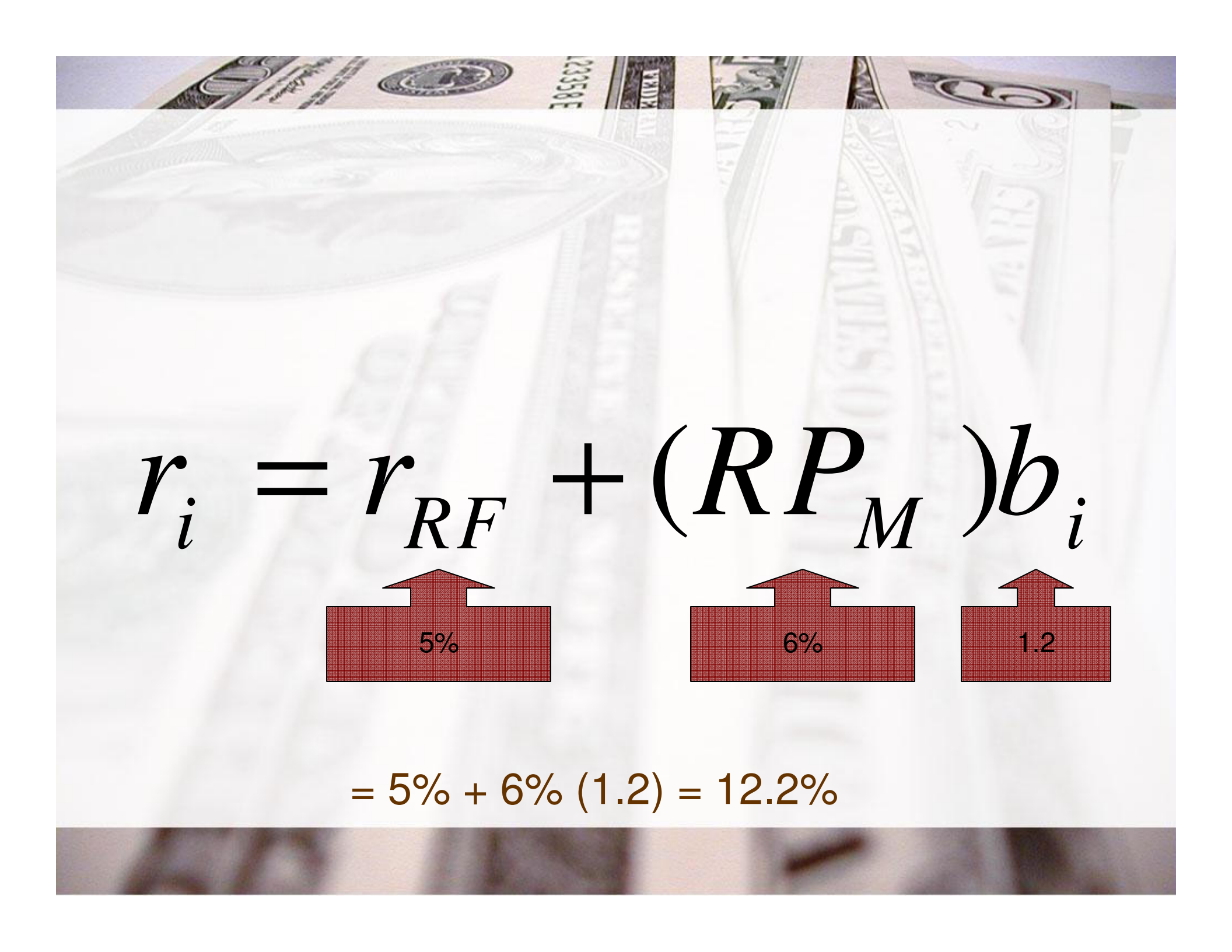
- Risk free rate is 5%
- Market risk premium is 6%
- Market expected return
- Rate of return of stock of beta of 1.2?

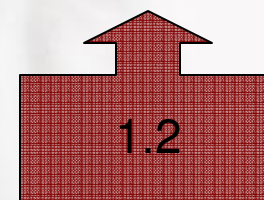
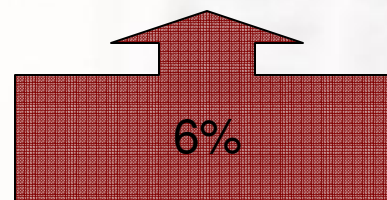
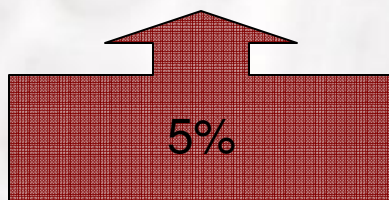
Answer

$$r_i = r_{RF} + (RP_M) b_i$$



$$= 5\% + 6\% (1) = 11\%$$


$$r_i = r_{RF} + (RP_M) b_i$$



$$= 5\% + 6\% (1.2) = 12.2\%$$