

(ST-2)
Beta and
Required Rate of
Return

ECRI Corporation is a holding company with four main subsidiaries. The percentage of its business coming from each of the subsidiaries, and their respective betas, are as follows:

Subsidiary	Percentage of Business	Beta
Electric utility	60%	0.70
Cable company	25	0.90
Real estate	10	1.30
International/special projects	5	1.50

- What is the holding company's beta?
- Assume that the risk-free rate is 6% and that the market risk premium is 5%. What is the holding company's required rate of return?
- ECRI is considering a change in its strategic focus: It will reduce its reliance on the electric utility subsidiary so that the percentage of its business from this subsidiary will be 50%. At the same time, ECRI will increase its reliance on the international/special projects division, and the percentage of its business from that subsidiary will rise to 15%. What will be the shareholders' required rate of return if management adopts these changes?

Problems

Answers Appear in Appendix B

EASY PROBLEMS 1-3

(6-1)
Portfolio Beta

An individual has \$35,000 invested in a stock with a beta of 0.8 and another \$40,000 invested in a stock with a beta of 1.4. If these are the only two investments in her portfolio, what is her portfolio's beta?

(6-2)
Required Rate of
Return

Assume that the risk-free rate is 6% and that the expected return on the market is 13%. What is the required rate of return on a stock that has a beta of 0.7?

(6-3)
Required Rates of
Return

Assume that the risk-free rate is 5% and that the market risk premium is 6%. What is the required return on the market, on a stock with a beta of 1.0, and on a stock with a beta of 1.2?

INTERMEDIATE PROBLEMS 4-9

(6-4)
Expected Return:
Discrete Distribution

A stock's return has the following distribution:

Demand for the Company's Products	Probability of This 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
	<u>1.0</u>	

Calculate the stock's expected return, standard deviation, and coefficient of variation.