

لا يتغير
CH 4

Cost of Capital equity
or "Realized Return"

$$R = \frac{P_1 - P_0 + D_1}{P_0} \times 100$$

CH 7

$$\text{div. yield} = \frac{D_1}{P_0} \times 100$$

العائد من الأرباح
الموزعة

$$CGY = \frac{P_1 - P_0}{P_0} \times 100$$

Capital gain yield

العائد من الرفع الرأسمالي

$$R = \text{div. yield} + CGY$$

$$\frac{D_1}{P_0} + \frac{P_1 - P_0}{P_0}$$

P_1 : price in year
"selling price"

P_0 : price now
"purchasing"

D_1 : dividends endy: 1

* Averng Return

عدد العائدات
Returns

$$\bar{R} = \frac{\sum R_i}{n} = \frac{R_1 + R_2 + R_3 + \dots}{n}$$

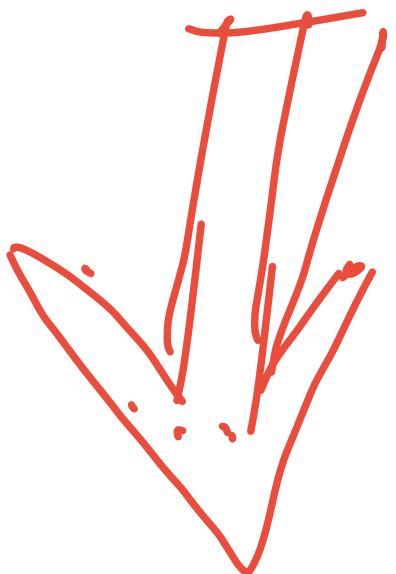
\bar{R} ← E(R)
 n ← عدد العائدات

• σ^2 : Variance = $\frac{(R_1 - \bar{R})^2 + (R_2 - \bar{R})^2 + \dots}{n-1}$

$n-1$ ← ريسك

• σ : Stand. diviation = $\sqrt{\text{Variance}}$

معايير
التغيرات
العيارى



11.2 Historical Risks and Returns of Stocks

You bought a stock one year ago for \$51.67 per share and sold it today for \$56.35 per share. It paid a \$1.67 per share dividend today. What was your realized return?

 $R?$ P_0 P_1 D_1

Realized Return $\Rightarrow R = \frac{P_1 - P_0 + D_1}{P_0} \times 100$

$$R = \frac{56.35 - 51.67 + 1.67}{51.67} \times 100$$

$$\therefore R = 0.122895 \quad \hat{=} \times 100 = 12.2895\%$$



You bought a stock one year ago for \$51.69 per share and sold it today for \$59.13 per share. It paid a \$1.59 per share dividend today. How much of the return came from dividend yield and how much came from capital gain?

$$\text{div. yield} = \frac{D_1}{P_0} \times 100$$

$$= \frac{1.59}{51.69} \times 100 = 0.03076$$

$$= 3.076\%$$

$$\text{CGY} = \frac{P_1 - P_0}{P_0} \times 100$$

$$= \frac{59.13 - 51.69}{51.69} \times 100$$

$$= 0.14393$$

$$= 14.393\%$$

11.2 Historical Risks and Returns of Stocks

Question 3, P 11-5
(similar to)

1 correct
Points: 0 of 1

Close

You have just purchased a share of stock for \$19.94. The company is expected to pay a dividend of \$0.64 per share in exactly one year. If you want to earn a 10.9% return on your investment, what price do you need if you expect to sell the share immediately after it pays the dividend?

$$R = \frac{P_1 - P_0 + D_1}{P_0} \times 100$$

$$10.9\% = \frac{P_1 - 19.94 + 0.64}{19.94}$$

⇒ solve for x

$$\Rightarrow P_1 = 21.473$$



Close

You expect KStreet Co's trade at \$102 per share right after paying a \$2.75 dividend per share in one year. What is the most you would pay to buy the stock now if you want to earn at least a return of 10%?

 $P_0?$ R

$$R = \frac{P_1 - P_0 + D_1}{P_0}$$

$$10\% = \frac{102 - P_0 + 2.75}{P_0} \Rightarrow \text{Solve for } x \Rightarrow P_0 = 95.227$$

11.2 Historical Risks and Returns of Stocks

Question 5, P 11-7 (similar to)

1 correct

Points: 0 of 1

Close

The following table contains prices and dividends for a stock. All prices are after the dividend has been paid. If you bought the stock on January 1 and sold it on December 31, what is your realized return? *Hint: Make sure to round all intermediate calculations to at least five decimal places.*

	Price	Dividend
Jan 1	9.93	
Mar 31	10.93	0.24
Jun 30	10.43	0.24
Sep 30	11.03	0.24
Dec 31	10.93	0.24

Realized Return?

$$\text{Step 1: } R_1 = \frac{P_1 - P_0 + D_1}{P_0} = \frac{10.93 - 9.93 + 0.24}{9.93} = 0.12487$$

$$R_2 = \frac{10.43 - 10.93 + 0.24}{10.93} = -0.0237877$$

$$R_3 = \frac{11.03 - 10.43 + 0.24}{10.43} = 0.080536$$

$$R_4 = \frac{10.93 - 11.03 + 0.24}{11.03} = 0.1269265$$

$$\Rightarrow R = \left((1+R_1) \cdot (1+R_2) \cdot (1+R_3) \cdot (1+R_4) \right) - 1 =$$

assumed
results

$$R = \left((1 + 0.14287) (1 + 0.02378) (1 + 0.08536) (1 + 0.1269265) \right)^{-1}$$

$$= \checkmark$$

$$\checkmark \times 100 = \checkmark$$

R_1

R_2

R_3

R_u

Year

1

2

3

4

Return

-3000% ~~0%~~ ~~0%~~ ~~0%~~ ~~0%~~

11.2 Historical Risks and Returns of Stocks

Question 6, P 11-9 (similar to) Part 1 of 3

1 correct
Points: 0 of 1



Close

The last four years of returns for a stock are as shown here:

- What is the average annual return? \bar{R} or $E(r)$
- What is the variance of the stock's returns? σ^2
- What is the standard deviation of the stock's returns? σ

Note: Notice that the average return and standard deviation must be entered in percentage format. The variance must be entered in decimal format.

$$\text{(a) av. Return } \bar{R} = \frac{\sum R_i}{n} = \frac{-3.8\% + 28.4\% + 12.3\% + 3.9\%}{4}$$

$$\therefore \bar{R} = 10.2\%$$

$$\text{(b) } \sigma^2 = \frac{(R_1 - \bar{R})^2 + (R_2 - \bar{R})^2 + (R_3 - \bar{R})^2 + (R_4 - \bar{R})^2}{n}$$

$$\sigma^2 = \frac{(-3.8\% - 10.2\%)^2 + (28.4\% - 10.2\%)^2 + (12.7\% - 10.2\%)^2 + (3.9\% - 10.2\%)^2}{3} = 0.01904$$

③ S. dev: $\sigma = \sqrt{\text{variance}} = \sqrt{0.01904} = 0.13798 \quad \tilde{=} 13.798\%$
 $= 13.798\%$

11.2 Historical Risks and Returns of Stocks

Question 7, P 11-14 (similar to)

Part 1 of 7

1 correct

Points: 0 of 1

Close

Using the data in the table to the right, calculate the dividend yield and your capital gain from investing in the stock from January 1 to December 31.

Date	Price	Dividend	d.y	CG %
Jan 1	31.59	-	-	-
Feb 5	31.81	\$0.21	.	.
May 14	31.81	\$0.22	.	.
Aug 13	31.81	\$0.21	.	.
Nov 12	\$39.41	\$0.21	.	.
Dec 31	\$43.25	-	.	.

step 1: $d.y = \frac{D_1}{P_0}$

$$d.y_1 = \frac{0.21}{31.59} = 0.00664$$

$$d.y_2 = \frac{0.22}{31.81} = 0.006916$$

$$d.y_3 = \frac{0.21}{29.27} = 0.00717$$

step 2

$$d.y = ((1 + 0.00664) \cdot (1 + 0.006916) \cdot (1 + 0.00717) \cdot (1 + 0.00691) \cdot (1 + 0))^{-1} = \boxed{\checkmark}$$

step 3: $CG = \frac{P_1 - P_0}{P_0}$

$$dY_4 = \frac{0.21}{33.28} = 0.00631$$

$$dY_5 = \frac{0}{39.41} = 0.000$$

$$CGY_1 = \frac{31.81 - 31.59}{31.59} = 0.00696$$

$$CGY_2 = \frac{29.27 - 31.81}{31.81} = -0.079849$$

$$CGY_3 = \frac{33.28 - 29.27}{29.27} = 0.13700$$

$$CGY_4 = \frac{39.41 - 33.28}{33.28} = 0.18419$$

$$CGY5: \frac{43.25 - 39.41}{39.41} = 0.097437$$

$$\text{Step 3: } CGY = \left((1 + 0.00696) \cdot (1 + 0.07499) \cdot (1 + 0.13200) \cdot (1 + 0.19419) \cdot (1 + 0.097437) \right)^{-1}$$

$$= \boxed{\checkmark} \text{ x/00}$$

11.2 Historical Risks and Returns of Stocks

Question 8, P 11-19 (similar to) Part 1 of 4

1 correct
Points: 0 of 1



Close

Calculate the 95% prediction intervals for the four different investments included in the following table.

	Small Stocks	S&P 500	Corporate Bonds	T-Bills
Average Return \bar{R}	19.15%	12.76%	6.95%	4.69%
Standard Deviation of returns σ	39.86%	20.54%	7.24%	3.54%

$$\Rightarrow \text{prediction Interval} = (\underbrace{\bar{R} - 2 \cdot \sigma}_{\text{lower}}; \underbrace{\bar{R} + 2 \cdot \sigma}_{\text{upper}})$$

$$\Rightarrow \text{pred. interval for small stocks} = (19.15\% - 2(39.86\%); 19.15\% + 2(39.86\%)) \\ = (-60.57\%; 98.87\%)$$

$$\Rightarrow \text{pred. interval for S\&P 500} = (12.76\% - 2(20.54\%); 12.76\% + 2(20.54\%))$$

$$= (-28.32\% ; 53.84\%)$$

⇒ pred. interval for T. bills = $(4.69\% - 2(3.54\%) ; 4.69\% + 2(3.54\%))$

$$= (-2.39\% ; 11.77\%)$$

11.5 Diversification in Stock Portfolios

Ch 11

11.5 Diversification in Stock Portfolios

اندر مستقر خود
↑

Question 1, P 11-24 (similar to)

0 correct

Points: 0 of 1

Close

You are a risk-averse investor who is considering investing in one of two economies. The expected return and volatility of all stocks in both economies is the same. In the first economy, all stocks move together—in good times all prices rise together, and in bad times they all fall together. In the second economy, stock returns are independent—one stock increasing in price has no effect on the prices of other stocks. Which economy would you choose to invest in? Explain.

(Select the best choice below.)

ممکن توزیع (مخاطره)

- A. A risk averse investor would choose the economy in which stocks move together because the uncertainty is much more predictable, and you have to predict only one thing.
- B. A risk averse investor would choose the economy in which stock returns are independent because risk can be diversified away in a large portfolio.
- C. A risk averse investor would prefer the economy in which stock returns are independent because by combining the stocks into a portfolio he or she can get a higher expected return than in the economy in which all stocks move together.
- D. A risk averse investor is indifferent in both cases because he or she faces unpredictable risk.

R_1

R_2

R_3

R_4

R_5

R_6

	Jan	Feb	Mar	Apr	May	Jun
Stock A	3%	6%	-5%	4%	-1%	5%
Stock B	1%	-2%	9%	0%	5%	-1%
Portfolio	2%	2%	2%	2%	2%	2%

11.5 Diversification in Stock Portfolios


Question 2, P 11-25 (similar to)

Part 1 of 7

0 correct

Points: 0 of 1

Close

Consider the following 6 months of returns for 2 stocks and a portfolio of those 2 stocks: . Note: The portfolio is composed of 50% of Stock A and 50% of Stock B.

- a. What is the expected return and standard deviation of returns for each of the two stocks?
- b. What is the expected return and standard deviation of returns for the portfolio? $E(r_p), \sigma_p$?
- c. Is the portfolio more or less risky than the two stocks? Why?

$E(r_A); \sigma_A ?$
 $\rightarrow E(r_B); \sigma_B ?$

a) $E(r_A) = \bar{R}_A = \frac{3\% + 6\% + -5\% + 4\% + -1\% + 5\%}{6} = 2\%$

Variance $\sigma_A^2 = \frac{(3\% - 2\%)^2 + (6\% - 2\%)^2 + (-5\% - 2\%)^2 + (4\% - 2\%)^2 + (-1\% - 2\%)^2 + (5\% - 2\%)^2}{5}$

$\therefore \sigma_A^2 = 0.00176$

Shift Eng
Shift Eng

$\therefore \sigma_A = \sqrt{\text{variance}} = \sqrt{} = 0.04195 \times 100 = 4.195\%$

✓ • $E(r_B) = \bar{R}_B = \frac{1\% + -2\% + 9\% + 0\% + 5\% + -1\%}{6} = 2\%$

variance

✓ • $\sigma_B^2 = \frac{(1\% - 2\%)^2 + (-2\% - 2\%)^2 + (9\% - 2\%)^2 + (0\% - 2\%)^2 + (5\% - 2\%)^2 + (-1\% - 2\%)^2}{6}$

∴ $\sigma_B^2 = 0.00176$

Std

$$\therefore \sigma_B = \sqrt{0.00176} = 0.04195 \approx 100 \times 4.195\%$$

• b $E(r_p) = 2\%$

$$\sigma_p = 0\% \Rightarrow \sigma_p = 0\%$$

© portfolio's Risk is Less than the Risk of the two stocks individually.

Because of diversification

لان الـ portfolio
صنوع