

Finance 366: Investments (Joseph Farizo)
Homework 2

Version: 100

Name: _____ Key: Version 100

Due: _____

Student ID: _____

Print and write your answers in the boxes below each question. On separate paper, neatly show your work, done by hand, for each question. No credit will be awarded if you provide an answer but show no work. When completed, use the Adobe Scan app to take a picture and save as a single PDF file with this as the first page. Save the file as V# where the # is your version number from the top right of this page. Example: "V101.pdf" if you have Version 101. Upload to <https://josephfarizo.com/assignments.html>. Correct answers are important, only minimal partial credit is awarded.

Question 1 You wish to invest in a risky portfolio with an $E(R)$ of 17.17% and a standard deviation of 37.37%. You decide to invest 110% of your funds in this risky asset, requiring you to borrow at the risk-free rate, or have a weight of negative 10% in T-bills that yield 2.60%. What is the (a) $E(R)$ and (b) Sharpe of this COMPLETE portfolio? How do you know without doing any calculations what your Sharpe ratio is if you decided to hold 74% in the risky asset?

$ER = 18.6270\%$, $S = 0.3899$
 0.0000

Question 2 There is a 31% chance of a recession, 50% chance of normal growth, and 19% chance of an expansion. A fund returns -7%, 11%, and 18%, respectively, in each of these scenarios. Calculate the Sharpe ratio for the COMPLETE portfolio, given you put 58% of your investing dollars in the risky asset, and the risk free rate is 2%. Show four decimal places and do not round intermediate calculations.

$Sharpe = 0.4961$

For the complete port., must consider weight in risky and rf.

Question 3 What is the (a) current NAV of a mutual fund consisting of 2400 shares of Halliburton Co trading at \$32, 1600 shares of Cincinnati Financial trading at \$27, and 140 shares of McCormick & Co trading at \$20? The fund has \$12,392 in outstanding liabilities and 8000 shares outstanding. (b) What would be an investor's return if the NAV is \$17.29 next year assuming no dividends are paid by these stocks?

$NAV = 13.801$ $Return = 0.253$

Question 4 The price for DED Co. shares at the beginning of 2018 is \$90. The price at the end of 2018, 2019, and 2020 are \$108, \$106, and \$104, respectively. The firm paid per share dividends at the end of 2018, 2019, and 2020 of \$5, \$6, and \$4, respectively. What is (a) the arithmetic and (b) the geometric mean of the HPRs over these three years? Do not round intermediate calculations, and show 4 decimal places (i.e., 1.2345%) for each answer.

$$\text{Arith} = 10.382\%, \text{GEO} = 9.879\%$$

0

Question 5 You wish to invest in a risky portfolio with an E(R) of 15.24% and a standard deviation of 33.70%. You decide to invest 67% of your funds in this risky asset and the remainder in T-bills that yield 2.90%. What is the (a) E(R) and (b) Sharpe of this COMPLETE portfolio? How do you know without doing any calculations what your Sharpe ratio is if you decided to hold 44% in the risky asset?

$$\text{ER} = 11.1678\%, \text{S} = 0.3662$$

0

Question 6 There is a 36% chance of a recession, 54% chance of normal growth, and 10% chance of an expansion. A fund returns -7%, 8%, and 17%, respectively, in each of these scenarios. Calculate the standard deviation of this fund, expressing as a decimal with 4 significant digits (i.e., 0.1234). Do not round intermediate calculations.

$$\text{STDV} = 0.08298$$

$$\text{Var} = \text{SUM}[p \cdot (r - \text{ER})^2]; \text{SD} = \text{SQRT}(\text{VAR})$$

Question 7 The capital gains yield for Alliant Energy Corp shares for 2018, 2019, and 2020 are 1.8%, 2.5%, and 10.5%, respectively. The dividend yields for 2018, 2019, and 2020 are 0.0%, 2.0%, and 0.0%, respectively. What is (a) the arithmetic mean and (b) the geometric mean of the holding period returns over these years? Show 4 decimal places (i.e., 1.2345%) for each.

$$\text{Arith} = 5.600\%, \text{GEO} = 5.538\%$$

Add cap. gain and div yields, then compute (a) average and (b) $\pi(1+r)^{(1/n)}$

Rate this homework from 1 to 5, with 1 being "very easy" and 5 being "very difficult." (circle one)

1 2 3 4 5

About how many minutes did you spend on this homework? (circle one)

<45 45 60 75 >75