Midterm exam

Investments (FIN 423), Fall 2021

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Please print your name on the line below:

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- This test has 25 questions. Each question counts for four points (100 points total).
- You have 75 minutes to take the test (3 minutes per question).
- There are 15 multiple choice questions. These have only one answer.
  Mark your answer clearly in the box next to the question.
- There are 10 computation questions. For these, I am just asking for a number, not for the calculations behind the number. Write it in the line under the question.
- You can bring one page of notes, front and back.
- You should bring a calculator, but it should not have wireless capability.

I. Stock returns, portfolios, and indexes

Question 1: Which of the following is *not* true about a value-weighted strategy?

- ☐ A) Every investor could follow it.
- ☐ B) It weights stocks according to their total available supply.
- ☐ C) It forces you to buy stocks whenever their prices increase.
- ☐ D) It requires regular rebalancing.

For questions 2 through 6, use the table below, which describes the prices and dividends of two stocks during a year. Note that their share counts do not change during the year.

Symbol	Shares outstanding, start *and* end of year	Price per share, start of year	Dividend per share, during year	Price per share, end of year
ABC	50m	$10	$3	$13
XYZ	2m	$50	$3	$53

Question 2: What is the return on an **equal-weighted portfolio** of the two stocks?

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Question 3: If you rebalance an equal-weighted portfolio at the end of the year, what trades will you make? (Hint: You can answer this just by comparing the stocks' returns.)

- ☐ A) Shifting the portfolio allocation away from ABC, towards XYZ.
- ☐ B) Shifting the portfolio allocation away from XYZ, towards ABC.
- ☐ C) Decreasing the overall invested amount by selling some of each stock.
- ☐ D) No rebalancing will be required.

Question 4: What is the return on a **value-weighted portfolio** of the two stocks?

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Question 5: What is the return on a **value-weighted index** of the two stocks? Assume this index is constructed like the examples we have done in class and in your homework. (*Hint*: You **do not** need to calculate a divisor change for this question.)

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Question 6: In one of the scenarios below, you **would** need to calculate a divisor change as part of the previous question. Which scenario is it?

- ☐ A) One of the stocks cancels its dividend.
- ☐ B) One of the stocks doubles in price.
- ☐ C) One of the stocks' share counts changes.
- ☐ D) One of the stocks changes from a value stock to a growth stock.

II. Funds

Here again is the data from the last few questions. Use it for questions 7, 8, and 9.

Symbol	Shares outstanding, start *and* end of year	Price per share, start of year	Dividend per share, during year	Price per share, end of year
ABC	50m	$10	$3	$13
XYZ	2m	$50	$3	$53

Suppose that at the start of the year, you set up a closed-end fund with 100 shares outstanding. Its investment portfolio is 10 shares of ABC, and 10 shares of XYZ. It starts with no liabilities. During the year, the fund receives $60 of dividend income, which it pays out as a distribution. At the end of the year, the fund holds the same 20 shares of stock that it started with, and it has accrued liabilities of $50.

Question 7: What is the fund's NAV at the start of the year?

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Question 8: What is the fund's NAV at the end of the year?

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Question 9: Suppose the fund is a closed-end fund, and its price begins the year *and* ends the year at $6.00. What is the return to investing in the fund during the year?

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Question 10: Which type of fund has the greatest need to hold cash along with its investment portfolio?

- □ A) Open end fund (mutual fund)
- □ B) Closed-end fund
- □ C) Exchange-traded fund (ETF)
- □ D) Unit investment trust

Question 11: Which of the following is a difference between an ETF and a closed-end fund (CEF)?

- □ A) ETF shares are exchange-traded, while CEF shares are not.
- □ B) ETFs frequently grow and shrink in size, while CEFs do not.
- □ C) ETFs allow all investors to obtain or redeem shares, while CEFs do not.
- □ D) ETF shares always sell for exactly their NAV, while CEF shares do not.

Question 12: Suppose a gold ETF has a balance sheet that consists only of 1000 ounces of gold, and 1000 shares outstanding. The market price of an ounce of gold is $2000. Suppose an authorized participant (AP) wants to create 1 new share of the ETF. What must it provide to the fund in exchange for this new share?

- □ A) $1000 in cash
- □ B) $2000 in cash
- □ C) 1 ounce of gold
- □ D) 2 ounces of gold

Question 13: Suppose the price of the gold ETF falls far below its NAV, presenting an arbitrage opportunity for an authorized participant (AP). Which of the following things would be part of the AP's strategy to profit from this difference?

- □ A) Sell shares of the ETF on the exchange where they trade.
- □ B) Buy shares of the ETF on the exchange where they trade.
- □ C) Deliver gold to the ETF, in exchange for new ETF shares.
- □ D) Deliver cash to the ETF, in exchange for new ETF shares.

III.Value investing and mutual fund performance

Question 14: A *small-cap growth* strategy tries to invest in growth stocks with a small market capitalization. Which of these stocks would be most attractive to this strategy?

	Company	Share price	Shares outstanding	Book value of equity
□ A)	A	$60	100m	$12b
□ B)	B	$20	200m	$8b
□ C)	C	$20	300m	$3b
□ D)	D	$10	400m	$2b

Question 15: Suppose a stock will pay a dividend of $5.00 during the next year (Div_1 = $5.00), and its price-dividend ratio is 20 ($P / Div_1 = 20$). You judge that the right discount rate for the dividends is 10% (r_E = 10%). What annual dividend growth rate (g) is necessary to explain the stock's price, according to a dividend-discount model?

Question 16: Which of these could *not* cause a stock price to rise?

□ A) Higher discount rate for future dividends.
□ B) Lower discount rate for future dividends.
□ C) Higher dividends in the upcoming year.
□ D) Higher growth rate of dividends in the future.

Question 17: Based on the evidence we saw, what kind of return would you expect today, from a strategy of always investing in the actively-managed equity mutual funds that the best recent performance out of all the funds in the industry?

□ A) Higher and riskier returns than a passive strategy.
□ B) Higher but less-risky returns than a passive strategy.
□ C) Similar returns to a passive strategy, or slightly lower.
□ D) Approximately the risk-free rate of return.

Question 18: We discussed two possible interpretations of the evidence on mutual fund performance. One was that active fund managers do not have any investment skill. The other interpretation was more positive. What was a key idea in this second assumption?

□ A) Investors do not "chase performance."
□ B) Investors are irrational.
□ C) All funds have the same size.
□ D) Managers cannot scale up their skill with the size of their fund.

Questions 19 through 25 were on topics that are not included in Module 1 for this year.