

## BRN 481 – Capital Markets

### Sample Exam Questions

#### I. Statistical Properties of Stock Returns

1. Why are estimates of serial correlations in the rates of return to common stock of practical and theoretical interest? Specifically, what would be implied if estimates of serial correlations were large in absolute value and their differences from zero were “statistically significant”?
2. “The random walk hypothesis says that stock prices vary randomly around their long-run averages. However, we know that there are noticeable patterns in stock prices, sometimes referred to as 'Bull' and 'Bear' markets, so the random walk hypothesis can't be true”. *Evaluate* this statement.

#### II Efficient Capital Markets

3. Evidence shows that: (a) there is a statistically significant correlation between analysts' estimates of earnings changes and the subsequent actual changes, and (b) there is also a significant correlation between earnings changes and stock price changes. Does it then follow that (c) analysts' earnings forecasts must be useful in predicting stock price changes? *Explain*.
4. Largay and West find that, “on average”, increases in margin requirements are preceded by a sequence of abnormally large increases in stock prices and followed by a sequence of “normal” changes in stock prices. This proves that increases in margin requirements have the desired effect of stopping price increases that are “unhealthy” or “unjustified by underlying economic factors”. True or False? Why?
5. “Given that the risks are the same, it is obviously better to buy the securities of firms with good prospects for long-run earnings growth than it is to buy those of stable or declining firms”. *Comment*.
6. A member of the Simon School Executive Advisory Committee recently said, “The efficient markets hypothesis must be false, because I know many people who have made a lot of money investing in the stock and bond markets.” Is this evidence against the efficient markets hypothesis? *Why or why not?* How would you design an experiment that could use evidence on investors' performance to judge efficient markets?

### III. Bond Markets & Interest Rates

7. Interest rates will be higher next year, so it pays to borrow now.” *Comment.*

### IV. Portfolio Selection - Diversification and Efficient Portfolios

8. “If you can borrow, the most efficient way to obtain a higher expected rate of return on your portfolio may not be to shift funds from stocks with low expected returns to stocks with high expected returns.” *Explain.*
9. Since a firm is only a collection of assets whose returns are uncertain, the investment decision of firms is similar to the portfolio selection problem of individuals, and portfolio theory should be the basis for capital budgeting procedures. *Comment.*

### V. The Capital Asset Pricing Model

10. Explain the relation between diversification and systematic risk,  $\beta_i$ , [ $\beta_i = \text{cov}(R_{it}, R_{mt}) / \sigma^2(R_{mt})$ ]. In terms of correlations between asset returns, when is diversification most effective? When is it least effective?
11. Recently, several papers have studied the “small firm effect” (i.e., small firm portfolios earn higher returns than predicted by the CAPM) and the “P/E ratio effect” (i.e., low P/E stocks earn higher returns than predicted by the CAPM).
- (a) Are these tests of market efficiency, or are they tests of the capital asset pricing model? Explain the rationale for your answer.
- (b) Suppose that you were managing money for a pension fund client, and you were going to be compensated according to “risk-adjusted performance” (i.e.,  $\alpha_i = R_{it} - R_{ft} - \beta_i [R_{mt} - R_{ft}]$ ). How, if at all, would you use the evidence on the small firm effect to improve your performance?
12. Suppose you were offered the choice of purchasing into a mutual fund, of say 20 randomly selected stocks, where the expected return on that portfolio was 10% and the standard deviation was 20%, or purchasing an equivalent dollar amount of ACME Chemical stock that has the same expected return and standard deviation. Which purchase would you make and *why?*

### VI. Option and Futures Pricing

13. “Writing call options on securities you already own is a great way to improve investment performance. First, you receive the proceeds from selling the option immediately. Second, if the exercise price is above the current stock price, you get the capital gain from S to X before the option would be exercised. In other words, the proceeds from the call provide a cushion if the price of the stock drops and gravy if it rises!”. *Comment.*

14. Suppose that you had reliable inside information about an upcoming announcement by a corporation that has listed stock and bonds, and put and call options traded on the stock (e.g., by Kodak), but you only a limited amount of money available to invest. *[For the purposes of this question, assume that it is not illegal to trade based on this inside information.]*
- (a) What kind of security would you buy (or sell) to get the most benefit from *favorable* information? *Why?*
  - (b) What kind of security would you buy (or sell) to get the most benefit from *unfavorable* information? *Why?*
  - (c) What kind of security would you buy (or sell) to get the most benefit from information that is likely to be important, but you are unsure of whether the stock price will rise or fall when it is announced? *Why?*
15. “The recent growth of markets in financial futures contracts provides a wonderful source of information about how people think stock and bond prices will move in the future. For example, if the futures price of the S&P 500 futures contract is much below the current level of the index, this implies mass pessimism about the returns to stocks. On the other hand, if the S&P futures price is way above the current level of the index, the market must expect a Bull Market.” Evaluate this statement. *(Hint: Is the S&P 500 futures price useful in forecasting stock prices? Why or why not?)*