

SIMON FRASER UNIVERSITY
Faculty of Business Administration

FINAL EXAM

BUS 417, Security Analysis
Prof. Geoffrey Poitras

04-3

EXAM INSTRUCTIONS: Please record all answers in the examination book provided. Calculators with enhanced capabilities such as the ability to attach external drives, whether such drives are attached or not, are prohibited. The exam is closed book, no books or other supplementary materials are permitted to be used during the examination.

EXAM DURATION: TWO HOURS

DO ALL PARTS OF ALL QUESTIONS (Each question is worth 25 total points – 10 points for part a and 15 points for part b for two part questions)

1.a) Philip Fisher makes the following observation in Developing an Investment Philosophy (1980):

“There are a relatively small number of truly outstanding companies. Their shares frequently can't be bought at attractive prices. Therefore, when favorable prices exist, full advantage should be taken of the situation. Funds should be concentrated in the most desirable opportunities. For those involved in venture capital and quite small companies, say with annual sales of under \$25,000,000, more diversification may be necessary. For larger companies, proper diversification requires investing in a variety of industries with different economic characteristics. For individuals (in possible contrast to institutions and certain types of funds), any holding of over twenty different stocks is a sign of financial incompetence. Ten or twelve is usually a better number. ... As an individual's holdings climb toward as many as twenty stocks, it nearly always is desirable to switch from the least attractive of these stocks to more of the attractive..”

Comment on the implications of this statement for the valuation and selection of common stocks. In your answer be sure to provide an assessment of the validity of the statement as well as a discussion of how security valuation would have to be conducted if the statement were correct.

b) The Fisher (1975) approach to company analysis emphasizes the importance of “four dimensions” to assess in determining the value of a company’s common stock: people factors, business factors, ‘the investment characteristics of some businesses’ and ‘the price of the investment’. Using these factors identify the **three** most outstanding common stock purchases from all of the different sectors that were examined during the in-class presentations. For each of these three companies, what elements of Fisher’s factors could not be applied?

2.a) i) What is a “classical immunization” strategy?

ii) Explain the relationship between the duration and convexity of a callable bond and the delta and gamma of the embedded call option.

b) Elton and Gruber (1995) observe:

"The search for the 'correct' way to value common stocks, or even one that works, has occupied a huge amount of effort over a long period of time....the implementation of a system to selectively value or select common stocks is a difficult task. This is a task that a valuation model purports to accomplish."

Derive the formula for three different types of discounted cash flow valuation models conventionally used to analyse common stocks. What are the limitations of each of these models?

3. Warren Buffett (1993), as quoted in Cunningham (2002, p.82), observes:

"Academics ... like to define investment 'risk' differently, averring that it is the relative volatility of a stock or portfolio of stocks – that is, their volatility as compared to a large universe of stocks. Employing data bases and statistical skills, these academics compute with precision the 'beta' of a stock – its relative volatility in the past – and then build arcane investment and capital-allocation theories around this calculation. In their hunger for a single statistic to measure risk, however, they forget a fundamental principle: It is better to be approximately right than precisely wrong."

Explain the relevance of this statement to the development of modern portfolio theory. In your answer be sure to provide an assessment of the validity of the statement as well as a discussion of how security valuation would have to be conducted if the statement were correct.

4. a) An important drawback of "traditional yield spread analysis" is the failure to take into account future interest rate volatility that would affect the expected cash flow of a fixed income security. What is option adjusted spread analysis and how does this technique correct for this limitation of traditional yield spread analysis in the analysis of bonds with embedded option features? Once the option adjusted spread has been determined, how can the cost of option be calculated?

b) "Whether the bond market moves up or down, high-convexity portfolios will always outperform low-convexity portfolios of equal duration and yield." Explain the argument supporting this statement. What factors would tend to undermine this position?

BONUS QUESTIONS: (5 points each)

B1. You are in the market for a house. Your effective all-in market borrowing rate for a house mortgage from a bank is 6%. One of the houses you are considering purchasing has an assumable \$300,000, 4 year mortgage at 3.5%, with a 24 year amortization. The asking price on the house is \$600,000. What is the value of the concessionary financing for this house?

B2. Assuming arithmetically declining death rates and an interest rate of 5%, what is the modified duration of a life annuity for a 25 year old person that cannot live beyond 80 years.