SIMON FRASER UNIVERSITY
Faculty of Business Administration

FINAL EXAM

BUS 417 Security Analysis 12-1
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EXAM INSTRUCTIONS: Please record all answers in the examination book provided. Calculators with enhanced capabilities such as the ability to input executable programs or attach external drives, whether such drives are attached or not, are prohibited. Use of devices with communications abilities, such as cell phones, is 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 – for questions with two parts, 10 points for part a and 15 points for part b)

1. The Graham and Dodd 'value investing' approach to security analysis emphasizes the importance of calculating an *intrinsic value* and comparing this value to the observed market price. A security is eligible for purchase if the difference between intrinsic value and market price exceeds the *margin of safety.* Finally, value investing requires an acceptable level of *diversification*. Using this approach, identify the best value investing portfolio of **FIVE** common stocks selected from all of the different sectors that were examined during the in-class presentations. (Hint: Be sure to explain the value investing rationale for each stock selected.)

2.a) Contrast the solutions to the life annuity valuation problem developed by de Witt and de Moivre. Be sure to identify relevant assumptions used to obtain the solutions and to explain the connection of each life annuity pricing formula to pricing using discounted expected value.

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 and the connection to the classical immunization strategy. What factors would tend to undermine the validity of the statement? What are the implications of this result for the asset/liability managers seeking to control interest rate risk for the fixed income portfolio of a life insurance company? Is it true that "the cost of a higher convexity is a lower yield"?

3.a) 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 **MOST** outstanding common stock purchase from all of the different sectors that were examined during the in-class presentations. Where there any elements of Fisher's factors that could not be directly applied to this company?

b) Philip Fisher makes the following observation in Developing an Investment Philosophy (1980):

> “For those primarily seeking major appreciation of their capital, de-emphasize the importance of dividends. The most attractive opportunities are most likely to occur in the profitable, but low or no dividend payout groups. Unusual opportunities are much less likely to be found in situations where a high percentage of profits is paid to stockholders.”

Comment on the implications of this statement for the 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 the potential bias in the security selection process that adhering to this observation could produce.

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? Once the option adjusted spread has been determined, how can the cost of the option component of the price be calculated? What are some important pitfalls of using option adjusted spread analysis to value mortgage backed securities and other collateralized debt obligations?

b) Ben Graham made the following observation in the *Intelligent Investor*:

> "The distinction between investment and speculation in common stocks has always been a useful one and its disappearance is a cause for concern. We have often said that Wall Street as an institution would be well advised to reinstate this distinction and to emphasize it in all dealings with the public. Otherwise the stock exchanges may some day be blamed for heavy speculative losses, which those who suffered them had not been properly warned against".

Comment on the implications of this statement for the valuation of equity securities. In your answer be sure to provide an assessment of the validity of the statement as well as a discussion of how this statement relates to: the downturn in equity markets from late 2008 to March 2009; and, the purchase of commodities as an ‘asset class’.

BONUS QUESTIONS: (5 points each)

B1. You are in the market for a house. Your effective all-in market borrowing rate for a second mortgage with a five year term from a bank is 7.25%. The vendor of one of the houses you are considering purchasing is willing to undertake a $500,000 second mortgage, with a 5 year term at 4.25%, and a 25 year amortization period. The asking price on the house is $800,000. What adjustment to the sales price of the house is warranted if, as part of the purchase, you take up the vendor’s second mortgage offer?

B2. You are given the following information about a (fictional) Government of Canada yield curve: 1 year treasury bill 0.25%; 2 year par bond 2.0%; 3 year par bond 2.75%; 4 year par bond 3.25%. Calculate all possible implied forward interest rates. (Hint: You will need to calculate the implied zero coupon interest rates to do this.)