

**SIMON FRASER UNIVERSITY**  
*Faculty of Business Administration*

**FINAL EXAM**

BUS 417- D100 Security Analysis  
Prof. Geoffrey Poitras

20-2

**Academic Honesty:** This assignment is individual work. Students are required to follow requirements of S10.01, especially Appendix A (see class web page for link).

**Rules for Submitting Final Exam:** Answers to questions are to be typed (except for equations and question 4B), single spaced, of length 1 page *each* for all questions, 8"x11" standard paper, with 1" margin and type point not less than 12. (This assignment is typed in 12 point.) For questions with multiple parts, answer all parts of the question. Violations will be subject to deductions. Assignment is due in my email ([poitras7@sfu.ca](mailto:poitras7@sfu.ca)) no later than 3:30PM on Sun. Aug. 16, 2020.

**EXAM DURATION:** FORTY-EIGHT HOURS

**DO ALL PARTS OF ALL QUESTIONS:** Each question is worth 25 total points – for questions with two parts 10 points for part i) and 15 points for part ii)

1. The relative value or ‘Wall Street’ approach to security analysis ignores the importance of calculating an *intrinsic value* and comparing this value to the observed market price to identify if the security is eligible for purchase. Instead, relative value security selection aims to determine the ‘best’ stock to purchase in a given sector, without evaluating whether securities in the sector are fairly priced. Using this approach, identify the ‘best’ security in any **THREE OF THE SEVEN** different sectors that were examined during the in-class presentations. (Hint: Be sure to explain the relative value rationale for each of the stocks selected.)

2a) 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 **seven** different sectors that were examined during the in-class presentations. Were 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):

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 management of a portfolio common stocks. In your answer be sure to provide an assessment of the validity of the statement as well as a discussion of the minimum possible time period a stock would have to be held after purchase if the statement were correct.

3a) "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."

Describe the discounted dividend cash flow valuation models conventionally used to analyze common stocks. What are the implications of using alternative definitions of dividends? How do these models differ from valuation models that discount variables other than dividends?

b) Describe the evolution of equity capital organization and trading from 1800 to the present. In your answer be sure to identify: different approaches to equity capital organization; the time line of important legal and related market developments; and, differing approaches to regulating the equity security market.

#### **4. CHOICE QUESTION: DO EITHER A) or B)**

**4A)** "Human beings act, not on the basis of fact and reality as such, but on the basis of opinions and beliefs about facts, and what is called knowledge, but which at best falls notoriously short of the implications of that term. From a logical point of view therefore, one who aspires to explain or understand human behavior must be, not finally but first of all, an epistemologist."

Comment on the implications of this statement for the analysis and valuation of securities. In your answer be sure to provide an assessment of the validity of the statement as well as a discussion of how investment strategy would have to be formulated if the statement were correct.

#### **4B) (Show Calculations, attach spreadsheet if used to solve the problem; no page constraint)**

The Canada Pension Plan (Canada Pension Plan, RSC 1985, c. C-8) is a complicated defined benefit plan that has a number of provisions, such as adjustments for 'drop-out years', that impact the required number of contribution years, and the difference between amounts contributed and the maximum contributions required to receive the maximum pension payment. In addition, the plan allows for pension payments to be started at any time between age 60 and age 70, with appropriate adjustment in the payment amount. The most favorable scenario for a female eligible for both the child rearing and low income drop-out years reduces the number of maximum contribution years to receive the full benefit starting at age 65 to approximately 33 years (reduced from 44).

Using the maximum contribution amounts from the following Table and assuming investment returns applicable for each of the following intervals:

1986-1990	10.5%
1991-2000	7.5%
2001-2010	4.5%
2011-2019	2.5%

a) Calculate the amount that would have been earned (from 1986 to 2019) if the CPP contributions given in the Table below had been invested instead of being paid into CPP. (Hint: The calculation involves starting from 1986 and accumulating investment in a fund to arrive at a final total in 2019.)

Using the calculation from a), for an individual that has made the maximum contributions detailed in the Table, with applicable drop-out allowances that reduced the number of years to receive the maximum benefit at age 65 to 34 years:

b) Assuming arithmetically declining survival rates and a maximum possible age of 95, calculate the implied interest for this individual electing to receive the maximum CPP pension payment at age 65 of \$14,110 per year (\$1,175.83/mo.) (Hint: This is the same type of calculation as that for Assignment #1, 2b)

c) If this individual opts to defer taking the CPP until age 70 when the annual payment would be \$20,036 (no further CPP contributions are required or made), calculate the implied interest rate assuming arithmetically declining survival rates and a maximum possible age of 95.

d) At a current interest rate of 2.5% what is the breakeven age at which deferring CPP until age 70 has the same present value as taking CPP at age 65. (Hint: This involves using the cash flows from b) and c) above and doing a present value calculation for age 65.)

**Table**  
**Maximum Canada**  
**Plan Contributions**  
**1986-2019**

1986	\$419.40
1987	\$444.60
1988	\$478.00
1989	\$525.00
1990	\$574.20
1991	\$632.50
1992	\$696.00
1993	\$752.50
1994	\$806.00
1995	\$850.50
1996	\$925.82
1997	\$993.22
1998	\$1,068.80
1999	\$1,186.50

2000	\$1,329.90
2001	\$1,496.40
2002	\$1,673.20
2003	\$1,801.80
2004	\$1,831.50
2005	\$1,861.20
2006	\$1,910.70
2007	\$1,989.90
2008	\$2,049.30
2009	\$2,118.60
2010	\$2,163.15
2011	\$2,217.60
2012	\$2,306.70
2013	\$2,356.20
2014	\$2,425.50
2015	\$2,479.95
2016	\$2,544.30
2017	\$2,564.10
2018	\$2,593.80
2019	\$2,668.05

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**BONUS (5 points)**

You are in the market for a house. Your effective all-in market borrowing rate for a second mortgage with a 4 year term from a bank is 4.69%. The vendor of one of the houses you are considering purchasing is willing to undertake a \$500,000 second mortgage, with a 4 year term at 2.25%, and a 30 year amortization period. The asking price on the house is \$900,000. 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?