NATIONAL UNIVERSITY OF SINGAPORE
NUS Business School
Department of Finance

FIN3102C/3702C INVESTMENT ANALYSIS & PORTFOLIO MANAGEMENT

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Course Objective

This is an introductory course in investments. It provides a comprehensive coverage of basic concepts, theories, applications and decision-making rules in financial investment.

Topics to be covered include fundamental security analysis on stocks, bonds, options and futures as well as modern portfolio management.

On completion, candidates should be conversant in investment management in preparation for careers in financial analysis and financial planning, investment banking, and corporate finance. Candidates should also be equipped to write the Chartered Financial Analysts (CFA) Level I examinations in quantitative analysis, equity securities analysis and portfolio management.

Basic Textbook

RBL: Reilly, Frank K., Brown, Keith C. and Leeds, Sanford J., Investment Analysis and Portfolio Management, Eleventh Edition, 2019, Cengage Learning, Inc.

Supplementary Readings

Students are expected to read financial news in *The Business Times, The Wall Street Journal, Financial Times,* and business periodicals like *The Economist, Fortune, Forbes*. Continual assessment will also be based on the student's understanding and analysis of market issues.

Prerequisite

Only students who have completed FIN2004/2704 can enrol. A strong foundation in Statistics and Finance is required to do well in this course. Students should already be familiar with the following topics:

1. Risk, Portfolio Theory & CAPM   **RBL**#6, 7
2. Discounted Cash Flow & Ratio Analysis   **RBL**#8

Course Content

1. Introduction to investments
   a. The process of portfolio management
   b. Profiling the investor
2. Investment in stocks
   a. Fundamental analysis
      i. Stock market analysis
      ii. Industry analysis
      iii. Company analysis and stock selection
   b. Technical analysis
      i. Assumptions of technical analysis
      ii. Advantages of and challenges to technical analysis
      iii. Technical rules and indicators
   c. Efficient market hypotheses
      i. Forms of market efficiency
      ii. Tests of market efficiency
      iii. Implications of efficient capital markets
   d. Challenges from behavioural finance
3. Investment in bonds
   a. Bond fundamentals
      i. Bond features and characteristics
      ii. Bond yields
   b. Bond analysis and valuation
      i. Determinants of interest rates
      ii. Term structure theories
   c. Bond volatility measures
      i. What determines bond price volatility?
      ii. Duration measures
      iii. Determinants of convexity
   d. Bond portfolio management strategies
      i. Passive portfolio strategies
      ii. Active portfolio strategies
      iii. Matched-funding techniques
      iv. Contingent procedures
4. Investment in options and futures
   a. Payoff diagrams of forwards, futures and options
   b. Hedging with forwards, futures and options
   c. Pricing of options
5. Asset allocation
   a. Active versus passive asset allocation
   b. Mutual funds, hedge funds and alternative investments
   c. Environmental, Social and Governance considerations of an investment
6. Performance evaluation
   a. What is required of a fund manager?
   b. Composite portfolio performance measures
   c. Style analysis
7. Ethical and professional conduct
   a. CFA Code Of Ethics And Standards Of Professional Conduct
   b. Illustrations from CFA Standards Of Practice Handbook

Assessment Components

1. Quizzes I & II   35%   ) 50% individual credit
2. Term paper   15%   )
3. Group written report of stock valuation project   25%   ] 50% group credit
4. Group in-class presentation of research paper   25%   ]

Assessment Approach

Students will be tested on their understanding of the prescribed body of knowledge as well as their analytical skills. The prescribed textbooks and readings are basic requirements for the body of knowledge for this course. Students who have a good understanding of the prescribed readings should be able to pass the course. Students who aspire for an A grade would need to be able to interpret financial reports, analyse issues and offer a view of the market.

Quizzes (35%)

Quiz I (5%) is on CFA Ethics and will be conducted on LumiNUS in the CFA ethics component administered by Associate Professor Lee Hon Sing.

Quiz II (30%) will be held in class on the Tuesday of week 13. Details of Quiz II will be announced later.

Term Paper (15%)

Each student is required to write a term paper in the format of an op-ed. This paper shall be about 1000 words in length. There is penalty for submitting a paper exceeding 1100 words.

Students are to state, explore and defend a position in a contemporary investments-related debate. Examples of such debates are: (a) behavioural finance; (b) retail investor protection; (c) crypto assets; (d) active vs. passive investment; (e) technical analysis; (f) efficient market hypotheses; (g) ESG investing; (h) alternative investments. Students can learn more about such debates from financial newspapers and research papers.

Students earn credit by writing clearly and concisely about their opinions of their chosen topics. Good command of the language is as critical as the substance of their arguments. Plagiarism will result in zero marks. Turnitin score should be ≤5%. The term paper is due by the Tuesday of week 14.

<u>Group Assignments (50%)</u>

Students are to organize themselves into groups of 6 or 7 members each and appoint a group coordinator who will communicate with the instructor on behalf of the group.

There are 2 group assignments:

1. Written report of stock valuation project (25%)
    The goal in this component is to practise fundamental analysis in valuing a small-cap stock in SGX/Catalist. Each group must submit a stock proposal to the instructor for approval by week 4. The final report shall be about 20 double-spaced pages, including cover page and appendices. Plagiarism will result in zero marks. Turnitin score should be ≤5%. The final report is due by the Tuesday of week 8.

2. In-class discussion of research paper – class participation (25%)
    This component will be evaluated on the amount of team learning and class interaction, besides clarity of presentation and the ability to motivate the class to learn together with the team. Therefore, having one student dominating the entire delivery is not encouraged. Splitting the research paper into segments and having each student focusing only on one segment is not an indication of team learning as well. There is generally more team learning when the class participates in interactive learning. This is the reward for class participation at the group level.

    The research papers are:
    1a. *An introduction to technical analysis (The Reuters financial training series)*. (1999). Singapore: J. Wiley & Sons (Asia).
    1b. Scott, G., Carr, M., & Cremonie, M. (2016). *Technical analysis: Modern perspectives.* CFA Institute Research Foundation.
    2. Statman, M. (2018). Behavioral finance lessons for asset managers. *Journal of Portfolio Management,* (Summer), 135-147.
    3. Elton, E. J., Gruber, M. J., & de Souza, A. (2019). Are passive funds really superior investments? An investor perspective. *Financial Analysts Journal, 75*(3), 7-19.
    4a. Chambers, D., Dimson, E., & Kaffe, C. (2020). Seventy-five years of investing for future generations. *Financial Analysts Journal, 76*(4), 5-21.
    4b. Ennis, R. M. (2021). Failure of the endowment Model. *Journal of Portfolio Management, 47*(5), 128-143.
    5. Bianchi, D. (2020). Cryptocurrencies as an asset class? An empirical assessment. *Journal of Alternative Investments, 23*(2), 162-179.
    6. Giese, G., Lee, L., Melas, D., Nagy, Z., & Nishikawa, L. (2019). Foundations of ESG investing: how ESG affects equity valuation, risk, and performance. *Journal of Portfolio Management, 45*(5), 69-83.
    7. Elton, E. J., Gruber, M. J. (2020). A review of the performance measurement of long-term mutual funds. *Financial Analysts Journal, 76*(3), 22-37.

Course Schedule

Subject	Description	Reference	Group Activity
WEEK 1 [January 11]			
Introduction	Portfolio Management Process	**RBL#2**	Form groups of ≤4 members; email names to instructor
Fundamental Analysis	Fundamental Analysis • Stock Market Analysis • Industry Analysis • Company Analysis	**RBL#9**	
WEEK 2 [January 18]			
Fundamental Analysis	Fundamental Analysis (cont'd) • Stock Valuation	**RBL#8**	
Technical Analysis	Technical Analysis • Assumptions • Advantages and Challenges • Technical Rules and Indicators	**RBL#5**	
WEEK 3 [January 25]			
Efficient Market Hypotheses	Efficient Market Hypotheses • Forms of Market Efficiency • Tests of Market Efficiency • Implications of Efficient Capital Markets	**RBL#5**	
Behavioural Finance	Behavioural Finance • Forms of Biases • Criticisms of Behavioural Finance	**RBL#5**	
WEEK 4 [February 1]			
Chinese New Year Stock Proposal Due			All groups email proposed company names and listing dates to instructor
WEEK 5 [February 8]			
Equity Portfolio Management Strategies	Equity Portfolio Management • Passive Strategies • Active Strategies • Style Investing	**RBL#11**	
Research Paper 1		Research Paper 1. Technical Analysis	Group 1 presents (20%) Group 5 reviews (5%)
Tutorial 1			Tutorial 1 All groups submit to LumiNUS by 2359hrs
WEEK 6 [February 15]			
Bond Valuation & Term Structure of Interest Rates	Bond Fundamentals • Bond Yields • Bond Valuations • Determinants of Interest Rates • Term Structure Theories	**RBL#12**	
Research Paper 2		Research Paper 2. Behavioural Finance	Group 2 presents (20%) Group 6 reviews (5%)
Tutorial 2			Tutorial 2 All groups submit to LumiNUS by 2359hrs
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Subject	Description	Reference	Group Activity
WEEK 7 [March 1]			
Bond Volatility Measures	Bond Volatility • What Determines Bond Price Volatility? • Duration measures • Convexity measures	**RBL**#13	
Research Paper 3		Research Paper 3. Active vs Passive	Group 3 presents (20%) Group 7 reviews (5%)
Tutorial 3			Tutorial 3 All groups submit to LumiNUS by 2359hrs
WEEK 8 [March 8]			
Bond Portfolio Management	Bond Portfolio Management • Passive Portfolio Strategies • Active Portfolio Strategies • Contingent Procedures	**RBL**#13	
Valuation Report (25%) Due			All groups submit to LumiNUS by 2359hrs • 20 pages, double-spaced • MS Word, no encryption • Plagiarism zero marks
WEEK 9 [March 15]			
Evaluation of Portfolio Performance	Portfolio Performance • Composite Performance Measures	**RBL**#18	
Research Paper 4		Research Paper 4. Endowment Model	Group 4 presents (20%) Group 1 reviews (5%)
WEEK 10 [March 22]			
Forward & Futures	Hedging with Forwards and Futures	**RBL**#14, 15	
Research Paper 5		Research Paper 5. Crypto	Group 5 presents (20%) Group 2 reviews (5%)
Tutorial 4			Tutorial 4 All groups submit to LumiNUS by 2359hrs
WEEK 11 [March 29]			
Options	Option Payoff Diagrams Option Pricing • Black-Scholes Valuation Model	**RBL**#16	
Research Paper 6		Research Paper 6. ESG	Group 6 presents (20%) Group 3 reviews (5%)
Tutorial 5			Tutorial 5 All groups submit to LumiNUS by 2359hrs
WEEK 12 [April 5]			
Option Pricing	Option Pricing (cont'd) • Binomial Option Pricing Model	**RBL**#16	
Review	Stocks, Bonds, Derivatives, Performance		
Research Paper 7		Research Paper 7. Performance Measurement	Group 7 presents (20%) Group 4 reviews (5%)
Tutorial 6			Tutorial 6 All groups submit to LumiNUS by 2359hrs
Tutorial 7			Tutorial 7 Solutions to be discussed in class

Subject	Description	Reference	Group Activity
WEEK 13 [April 12]			
Quiz II (30%)			All students attend class • Paper & pen test • 2 hrs • Details tba
READING WEEK 14 [April 19]			
Term Paper (15%) Due			All students submit op-ed to LumiNUS by 2359 hrs • 1000 words • MS Word, no encryption • Plagiarism zero marks