



DIVISION OF ECONOMIC AND FINANCIAL STUDIES

ACCG352 — Applied Portfolio Management

Unit Outline, Semester 2, 2004

1 Unit Objectives and Description

The purpose of this unit is to provide students with the analytical skills and techniques required to effectively manage diversified portfolios of securities. The first section of the unit prepares students for asset allocation management and performance assessment of diversified portfolios. Section two reviews theoretical and practical issues relating to the management of portfolios containing options, futures and other derivatives. Material presented has relevance for students interested in careers as security analysts, portfolio managers, corporate treasurers and risk managers.

The unit also aims to help students develop their generic skills, such as interpersonal, communication, critical analysis, problem solving, and creative thinking skills, in the effective accomplishment of finance related tasks. Foundation skills of numeracy and information technology will also be enhanced by the use of specialised, derivatives software.

In the first section, the major topics are

1. Introduction and asset allocation
2. Bond portfolio management
3. Passive management of equity portfolios
4. Active management of equity portfolios
5. International diversification
6. Portfolio performance assessment

Major topics covered in the second part of the unit are

1. Managing portfolio risks and returns using derivatives
2. Managing risks in derivatives positions
3. Implementing option pricing models in practice
4. Understanding credit risk and credit derivatives
5. Avoiding derivatives disasters

2 Prerequisites

ACCG329 (P) or corequisite ACST305(P)

3 Textbooks and References

For section one of the unit, the *prescribed* textbook is E. J. Elton, M. J. Gruber, S. J. Brown and W. N. Goetzmann, **Modern Portfolio Theory and Investment Analysis**, 6th Edition, Wiley. Readings will also be assigned from Z. Bodie, A. Kane and A.J. Marcus, *Investments*, 6th Edition, Irwin McGraw-Hill and F. Fabozzi (1999), *Investment Management*, 2nd Edition, Prentice-Hall.

For section two of the unit, the *prescribed* textbook is J. C. Hull, **Options, futures and other derivatives**, 5th edition, Prentice Hall. Students will need to use the software that comes with this textbook, i.e. DerivaGem for Excel, including The Applications Builder contained within the Excel worksheet DG-functions.xls. Students may wish to also purchase J. C. Hull, *Options, futures and other derivatives: solutions manual*, 5th edition, Prentice Hall.

4 Teaching Format

The weekly three hour class time for this unit consists of a two hour lecture and a one hour tutorial. Lectures will explain and illustrate major ideas, and disseminate information about the operation and administration of the unit. Tutorials will reinforce the ideas introduced in the lectures, primarily through discussion and numerical exercises.

5 Learning Strategy

To help achieve the aims of the unit, you should

1. read the assigned references for the current week's lecture
2. attend the weekly lecture and review the lecture notes
3. prepare answers to the weekly assignment questions and problems in advance of the tutorial
4. identify any problems in relation to the lectures or tutorial problems and discuss these issues during the tutorial
5. develop reasoning skills and not only rely on the reproduction of textbook material.

6 Teaching Staff

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** Lecturer for weeks 1-3

*** Lecturer for weeks 4-6

7 Assessment

Mid-semester examination	40%
Final examination	40%
Major project	20%

To pass the unit students must

- obtain at least 40 marks out of the aggregate 80 marks allocated to mid-semester and final examinations, plus
- obtain at least 50 marks out of the total 100 marks for all assessment

Cheating and plagiarism carry heavy penalties and must be avoided. For more details on this issue refer <http://www.student.mq.edu.au/plagiarism/>

Special consideration. Students who suffer unavoidable disruption or misadventure during the examination period, or consider their overall performance in this unit has been affected by misadventure or unavoidable disruption, must lodge the Request For Special Consideration In Exams form together with A Professional Declaration Form at the Student Enquiry Service by the due date. Although all properly completed requests are considered, they are not automatically granted. Consideration is only given to students whose previous work in the unit is satisfactory.

Dictionaries and calculators. No dictionaries of any kind are allowed in either the mid-semester or final examinations. Non-programmable calculators are allowed in both examinations, provided that they are not capable of storing text.

7.1 Mid-semester examination

A ninety minute mid-semester examination will be held during normal lecture hours in week 8. This examination will cover the material from the first six weeks of the semester with questions relating to the lecture material, articles reviewed in the lectures and assigned chapters from the texts.

7.2 Final examination

The final examination will cover the material studied from weeks 7 and 9–13 (inclusive). The format of the final examination will be provided at a later date.

7.2.1 Interpreting your SNG

Students receive a standardised numerical grade (SNG), with their final exam result. To interpret this number, it should be noted that

- SNGs are not computed by simply adding up the marks given for each component of assessment, but provide a ranking of students based on marks obtained from all facets of the unit assessment
- The SNGs awarded in a particular unit are designed to indicate that the students in each performance band, from HD to PC, have satisfied the criteria for inclusion in that band and ranks them by their performance within that band
- Since the ranges of SNGs differ from band to band the relationship between raw marks and SNGs may differ from band to band even within the same unit
- The relationship between raw marks and SNGs almost always differ between units

7.3 Major project

7.3.1 Project components

For the major project, you are *required* to

1. Select one of the articles listed from sections 8.7 – 8.9. If you prefer, you may select any other academic finance journal article on these topics, provided your choice is approved by the unit instructor BEFORE commencing your project.
2. Prepare a written report, based on your reading and discussion of the selected article, plus related literature. The report should EITHER
 - (a) critically evaluate the *academic contribution* of the article, OR
 - (b) carefully develop the *practical implications* of the article.
3. Present an oral summary of the written report during the tutorials in the last week of classes. The written report is to be submitted at the time of the tutorial presentation.

15 marks are available for the written submission and 5 marks are available for the oral presentation.

7.3.2 Project guidelines

Written submission: If you choose to evaluate the *academic contribution* of the article, your submission may include, but need not be limited to, coverage of the following points

1. Identify the research question(s) asked in the paper
2. Assess the motivation for the paper, i.e. why is the question interesting from an academic viewpoint?
3. Evaluate the appropriateness of the design of the study and its execution
4. Explain the key results of the paper
5. Critique the conclusions, e.g. comment on the strength (or otherwise) of evidence in favour of the conclusions; offer [valid] alternative interpretations of the evidence, etc.

If you choose to develop the *practical implications* of the article, your submission may include, but need not be limited to, coverage of the following points

1. Explain the key results of the paper
2. Propose real world scenarios for which the results of the paper are relevant
3. Develop effective strategies for implementing the results in practical situations
4. Suggest potential, practical difficulties in implementation and how these might be overcome
5. Identify possible problems with the results, e.g. are there important real world factors ignored by the authors that might restrict the application and usefulness of their conclusions?

Oral presentation: Ensure that your presentation is clear, easy to follow and makes appropriate use of visual aids, etc. Time management is most important — make sure you cover all the key points and that adequate time is allocated to each one.

7.3.3 Project rules

1. This project **MUST** be conducted by groups of four or five members. Form your groups as quickly as possible. Groups do not have to be made up of students in the same tutorial class.
2. The written report **MUST NOT** exceed ten typed, double-spaced pages (i.e. about 3000 words). Submissions that merely reproduce or paraphrase large sections of the article will receive a failing grade. You must properly acknowledge all source documents and include a full bibliography. Plagiarism will result in a zero mark and potential disciplinary action by the University.
3. Your written report **MUST** include a statement, signed by all members, that sets out the percentage contribution of each member. It is expected that groups will allocate tasks so that each member makes a similar level of contribution. Marks may be adjusted where unequal contributions can be proved from individual log-books or other identifiable evidence.
4. The oral presentation **MUST NOT** exceed ten minutes in total. To maintain equity across groups, this time limit will be strictly enforced. There is to be only one presentation per group, however, more than one group member can take part in the presentation.
5. Given the time constraint, the maximum number of possible presentations per tutorial class is five. You **MUST** book a presentation slot with your tutor. Do this as soon as possible since groups who attempt to book after all time slots are taken, will have to fill an available slot in a different tutorial class or in the final week's lecture.

8 Lecture Topics, Readings and Assignment Questions

8.1 Introduction and asset allocation

Readings: Lecture for week 1

- Fabozzi, Chapter 31
- Elton, Gruber, Brown and Goetzmann, Chapter 11

Assignment Questions: Tutorial in week 2 [Note: there are no tutorials during first week]

1. Fabozzi, Chapter 31, Questions 1-3
2. Elton, Gruber, Brown and Goetzmann, Chapter 11, Questions 1 and 5

8.2 Bond portfolio management

Readings: Lecture for week 2

- Elton, Gruber, Brown and Goetzmann, Chapter 21
- Fabozzi, Chapter 27

Assignment Questions: Tutorial in week 3

1. Elton, Gruber, Brown and Goetzmann, Chapter 21, Questions 1-3
2. Fabozzi, Chapter 27, Questions 1, 4 and 6

8.3 Passive management of equity portfolios

Readings: Lecture for week 3

- Fabozzi, Chapter 14

Assignment Questions: Tutorial in week 4

1. Fabozzi, Chapter 14, Questions 1–6

8.4 Active management of equity portfolios

Readings: Lecture for week 4

- Bodie, Kane and Marcus, Chapter 27

Assignment Questions: Tutorial in week 5

1. Bodie, Kane and Marcus, Chapter 27, Problems 1 and 4

8.5 International diversification

Readings: Lecture for week 5

- Elton, Gruber, Brown and Goetzmann, Chapter 12

Assignment Questions: Tutorial in week 6

1. Elton, Gruber, Brown and Goetzmann, Chapter 12, Questions and Problems 1–4, 6–7

8.6 Portfolio performance assessment

Readings: Lecture for week 6

- Elton, Gruber, Brown and Goetzmann, Chapter 24

Assignment Questions: Tutorial in week 7

1. Elton, Gruber, Brown and Goetzmann, Chapter 24, Questions and Problems 1–6

8.7 Managing portfolio risks and returns using derivatives

Readings: Lecture for week 7. For the remaining topics, copies of the supplementary readings can be photocopied in ERIC. The lecture notes and assignment questions define the unit content. Material in the textbook that is not mentioned in lectures, nor covered in assignment questions, is not examinable.

- Hull, Chapter 4, Sections 4.4, 5
- Hull, Chapter 5, Sections 5.13, 14
- Hull, Chapter 9, Section 9.1
- Hull, Chapter 13, Section 13.3
- Hull, Chapter 14, Section 14.12
- T. Brailsford, K. Corrigan and R. Heaney, 2001, A comparison of measures of hedging effectiveness: a case study using the Australian All Ordinaries Share Price Index Futures contract, *Journal of Multinational Financial Management* 11, 465-481
- B.H. Do, 2002, Relative performance of dynamic portfolio insurance strategies: Australian evidence, *Accounting and Finance* 42, 279-296

Assignment Questions: Tutorial in week 9 [Note: As the mid-semester examination is held in week 8, there are no tutorials in week 8]. For the remaining assignments, you are encouraged to use the software for numerical calculations, wherever possible, provided that you have an understanding of what's happening inside the "black box".

1. Hull, Chapter 4, Questions and Problems 4.7, 18; Assignment Questions 4.25 [*Hint:* Use a spreadsheet to answer 4.15].
2. Hull, Chapter 5, Questions and Problems 5.23, 25, 26
3. Hull, Chapter 9, Questions and Problems 9.1
4. Hull, Chapter 13, Questions and Problems 13.23, 24
5. Hull, Chapter 14, Questions and Problems 14.16

8.8 Managing risks in derivatives positions

Readings: Lecture for week 9

- Hull, Chapter 14, Sections 14.1-11
- Hull, Chapter 19, Sections 19.6, 8, 10, 13, 14
- T.C. Green and S. Figlewski, 1999, Market risk and model risk for a financial institution writing options, *Journal of Finance* 54, 1465-1499.
- R.G. Tompkins, 2002, Static versus dynamic hedging of exotic options: an evaluation of hedge performance via simulation, *Journal of Risk Finance* 3, 6-34.

Assignment Questions: Tutorial in week 10

1. Hull, Chapter 14, Questions and Problems 14.9, 20; Assignment Questions 14.30.
2. Hull, Chapter 19, Questions and Problems 19.2, 11, 16; Assignment Questions 19.26, 28. [*Hint:* For 19.26, use the following portfolio of vanilla, European options to replicate the exotic — (a) a call with strike price 1.00, maturing in 2 years; (b) a put with strike price 0.80, maturing in 2 years; (c) a put with strike price 0.80, maturing in 1.5 years; (d) a put with strike price 0.80, maturing in 1 year; (e) a put with strike price 0.80, maturing in 0.5 years].