SCHOOL OF ECONOMICS AND FINANCE

BAFI3157 / BAFI3178
STRATEGIC ASSET ALLOCATION

Semester 2, 2009

MELBOURNE

LECTURER SEMESTER 2, 2009

Lecturer Richard Heaney  
(Course Coordinator)  
TEL: (03) 9925 5905  
FAX: (03) 9925 5986  
EMAIL: Richard.Heaney@rmit.edu.au

Lecture time  
Monday, 17.30-20.30

Contact hours  
Tuesday, 13.00-16.00

Lecture location  
Room, 108.10.27

You are requested to ensure that you are correctly enrolled in this course by checking that it appears on your enrolment confirmation. If the course code does not appear, you will not have a result recorded for this course. Please see your Program Administrator at once if you are not correctly enrolled in this course.
Welcome

Welcome to BAFI3158 / BAFI3178, Strategic asset allocation. The objective of this unit is to introduce students to more advanced issues in asset allocation and investment generally. The course focuses on the key concepts underlying investment choice and the importance of the investment horizon choice. A key part of the course is the development and application of investment theory in the solution of strategic allocation problems. This is an advanced course and it deals with some of the key research papers in the area.

Contacting RMIT Staff

It is recommended that students use email as the preferred method for contacting lecturing staff in this course. Lecturers will attempt to reply to your emails within 24 hours of receiving a question or request. Lecturing staff will not see students unless they have a prior appointment.

Course identification

Course Code: BAFI 3157 / BAFI3178  
Course Name: Strategic asset allocation  
Credit Points: 12

Course description

This course introduces students to the seminal and contemporary literature on selected topics in the area of strategic asset allocation. The course is designed to provide students with an understanding of investment decision-making and the impact of investment horizon on investment decisions. The course is directed at post-graduate and honours students and is designed for students wishing to pursue higher level studies or a career relating to investment analysis and decision-making.

The course builds on under-graduate studies in investments and it is oriented to finance theory and its practical application. Students are assumed to have a prior working knowledge of key concepts such as expected return, risk, portfolio theory, asset pricing, bond and bill
valuation, derivatives pricing, financial mathematics and statistics, though most of the basics will be reviewed during the course prior to their application.

**Course objectives**

At the conclusion of this course, you should be able to:

- Critically evaluate the key concepts in strategic asset allocation;
- Review the literature in the area;
- Apply advanced techniques to practical portfolio construction problems;

To achieve the objectives listed above, this course requires you to participate in learning activities. These activities comprise the following:

- Attendance at, and note taking during, scheduled lectures
- Reading of, and note taking from, lecture notes and references
- Completion of one group assignment and individual assignments
- Completion of final examination

**Assessment**

The assessment tasks you are required to complete are:

- Group project: 25%
- Group presentation (15 minutes): 10%
- Final examination (take home paper): 65%

All students are required to read the set papers and they should be prepared to discuss the papers in class.

The group project report consists of a one page executive summary (appearing at the front of the report), a maximum of 10 pages of discussion followed by whatever appendices are deemed necessary. The last page of the report will include a list of references. Harvard style referencing must be used throughout the document and there should be evidence of reading beyond the papers set for discussion in the course. It is important that you develop some skill in the use of the Microsoft WORD equation editor. Do not attach an excel spreadsheet or a dump of an excel spreadsheet as part of the appendices. This project is worth 25% of the final grade.

The group project presentation is a formal 20 minute presentation to the class supporting the project findings. While the written report will focus on the detailed calculations and justification of these calculations, the presentation is essentially a well argued sales pitch to a client concerning future investment in the portfolio. The arguments put forward in the paper should be theory based and well supported. This is worth 10% of the final grade.

The final examination focuses on theory and applications covered in the course. This will be a take home open book examination. This is worth 65% of the final grade.
Assessment review

See the RMIT web site for further information.

Report Writing

Reports are to be well written and students are expected to follow the guidelines set out in the document entitled “Written Reports and Essays: Guidelines for Referencing and Presentation in RMIT Business”. This can be found at the web site: [http://mams.rmit.edu.au/s9sx559hurvc.rtf](http://mams.rmit.edu.au/s9sx559hurvc.rtf). There is considerable information in this document and it is well worth reading.

Dictionaries

See the RMIT web site for further information

Plagiarism

Plagiarism is the presentation of the work, idea or creation of another person without appropriate referencing as though it is one’s own. Plagiarism is not permitted in this course. The use of another person’s work or ideas must be acknowledged. Failure to do so may result in charges of academic misconduct that carry a range of penalties including cancellation of results and exclusion from this course.

Subject grading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>HD</td>
<td>High Destination</td>
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<tr>
<td>D</td>
<td>Distinction</td>
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<tr>
<td>C</td>
<td>Credit</td>
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<tr>
<td>P</td>
<td>Pass</td>
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<tr>
<td>N</td>
<td>Fail</td>
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</table>

Prescribed texts


Journal Articles

All the journals that are referred to below can be obtained from the RMIT Library, e-journals selection on the RMIT web address: [http://www.rmit.edu.au/browse;ID=okb9dtswo9v1](http://www.rmit.edu.au/browse;ID=okb9dtswo9v1)

**Useful texts**


## Timetable

<table>
<thead>
<tr>
<th>Week No.</th>
<th>Topic No.</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>20 July 2009</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>27 July 2009</td>
<td>Basics: returns, risk and investor preferences</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>3 August 2009</td>
<td>Basics: returns, risk and investor preferences (cont.)</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>10 August 2009</td>
<td>One period portfolio decision</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>17 August 2009</td>
<td>Issues in estimation of portfolio expected return and variance</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>24 August 2009</td>
<td>Common investment asset classes – debt, equity, property, private investment, hedge funds, other classifications</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>7 September 2009</td>
<td>Derivatives – futures, options, swaps and other derivatives</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>14 September 2009</td>
<td>Multi-period portfolio decision making</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>21 September 2009</td>
<td>Groups present the results of their research and submits their final project report</td>
</tr>
<tr>
<td>10</td>
<td>Case studies</td>
<td>28 September 2009</td>
<td>Class discussion of two cases with a view to strategic asset allocation issues</td>
</tr>
<tr>
<td>11</td>
<td>8</td>
<td>5 October 2009</td>
<td>Alternative asset allocation approaches</td>
</tr>
<tr>
<td>12</td>
<td>Case study and review</td>
<td>12 October 2009</td>
<td>Final case study with summary and review of the course</td>
</tr>
<tr>
<td>13</td>
<td>No lecture</td>
<td>16 October 2009 to 19 October 2009</td>
<td>Take home examination paper - emailed at 5.00pm on Friday and returned by Monday 9.00am</td>
</tr>
</tbody>
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## Topic Details

<table>
<thead>
<tr>
<th>Topic No</th>
<th>Description</th>
<th>Text book chapters</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Basics: returns, risk and investor preferences</td>
<td>(Swensen 2000) Ch 1-4, 11, (Bernatzi &amp; Thaler 1995; Bliss &amp; Panigirtzoglou 2004)</td>
<td>Discuss return, risk, risk aversion, measures of risk aversion and introduce alternative preference functions. Discuss the impact and limits of behavioural biases in decisions concerning the trade off between risk and return.</td>
</tr>
<tr>
<td>2</td>
<td>One period portfolio decision</td>
<td>(Swensen 2000) Ch 5, (Michaud 1989; Ibbotson &amp; Kaplan 2000)</td>
<td>Derive the one period risk averse investor portfolio choice given expected return and variance for two through n risky assets. Identify the impact of introducing a risk free asset. Review the Markowitz model for portfolio optimisation using excel solver and critique this method.</td>
</tr>
<tr>
<td>3</td>
<td>Issues in estimation of portfolio expected return and variance</td>
<td>(Jacquier &amp; Marcus 2001; Jagannathan &amp; Ma 2003)</td>
<td>Define and estimate expected return, variance and covariance. Introduce the traditional estimators, single and multifactor model based estimators and shrinkage adjusted estimators. Introduce the time changing estimators such as the ARCH based estimators.</td>
</tr>
<tr>
<td>4</td>
<td>Common investment asset classes</td>
<td>(Swensen 2000) Ch 5, 7, 8, (Byrne &amp; Lee 1995; Sinquefield 1996; Kothari &amp; Shanken 2004; Barton Waring &amp; Siegel 2006; Erb &amp; Harvey 2006; Hillier et al. 2006; Bader &amp; Gold 2007; Eun et al. 2008)</td>
<td>Discuss the common asset classes commonly included in portfolios (bonds and money market securities, shares, property, commodities, total return investments).</td>
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<td>5</td>
<td>Derivatives</td>
<td>(Gagnon et al. 1998; Koski &amp; Pontiff 1999; Hentschel &amp; Kothari 2001)</td>
<td>Provide examples of the use of derivative positions in portfolio construction and management. The part of the course will focus on simple graphical approaches to analysis of combinations of assets and derivatives.</td>
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<tr>
<td>6</td>
<td>Multi-period portfolio decision making</td>
<td>(Bodie et al. 1992; Samuelson 1994; Van Eaton &amp; Conover 1998; Hansson &amp; Persson 2000)</td>
<td>Introduce the Merton continuous time model. Highlight the time varying nature of the optimal portfolio in continuous time. Review more recent work in the area, with reference to modelling the need for changes in the portfolio as the investor ages.</td>
</tr>
<tr>
<td>7</td>
<td>Case studies</td>
<td></td>
<td>The Australian Future Fund, asset allocation in Japan and asset allocation in the UK.</td>
</tr>
<tr>
<td>8</td>
<td>Alternative asset allocation approaches</td>
<td>(Swensen 2000) Ch4, 6, (Thaler 1999; Dimson et al. 2004; Statman 2004; Grinold 2005; Barton Waring &amp; Siegel 2007)</td>
<td>Discuss alternative approaches to portfolio construction and management including tactical asset allocation.</td>
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Group Project

The BAFI Pension fund is a specialised fund designed to meet the needs of small individual investors who are interested in investing shares traded on the Australian stock exchange. As professional analysts you are required to identify the most appropriate shares to include in the portfolio and the most appropriate weightings to be applied to the shares. Your report must justify your choice of shares and weightings and you will be required to take note of the special needs that small Australian investors might have. At most 10% of the portfolio should be held as cash to provide flexibility to meet the inevitable exit and entry of investors over time.

Data: Each group must collect monthly total return data from Datastream for the period 31 January 1990 to 30 June 2009 for these shares.

Required

A. Each team must choose a final list of at most 20 shares, but no less than 10 shares. This choice must be carefully defended both in the project report and in the class presentation. You need to convince the audience as to why an investor would be attracted to your portfolio. Supportive arguments should be based on the characteristics of the investors that you want to attract to the fund as well as the current market conditions and expectations about future economic conditions. The submitted written project should include a carefully reasoned summary with the formal presentation to class designed to flesh out these arguments. (20 marks)

B. The BAFI Pension fund managers are aware of the problems that exist with estimation of covariance matrices and expected returns but, regardless of the problems, the managers require a set of covariance and expected return estimates for the portfolio. It is expected that the groups will use various methods of estimating covariance matrix and expected return estimates. Further, the BAFI Pension fund managers argue that it is important that the estimates are stable over time.
   a. Using a rolling window of 60 days estimate the change in the portfolio variance and correlations over the period, 31 January 1990 to 30 June 2009.
   b. Comment on the variation in these estimates. Suggest possible reasons for this variation and select one set of estimates for submission to World Fund with supporting arguments. (20 marks)

C. The BAFI Pension fund has an objective of earning 6% per annum in real AUD terms on average and so the group must identify two or more portfolios that could earn this return over the period. Base your portfolio weightings on the period, 31 January 1990 to 31 December 2000, and calculate the covariance and expected return estimates and portfolio return and variance based on these weightings for the following 31 January 2001 to 30 June 2009 period to see whether the required 6% could actually be achieved in this out of sample period (don’t forget that you want to focus on real returns). The portfolios should include at least the following alternatives:
   a. a combination of cash and global minimum variance portfolio of the shares,
   b. a combination of cash and an equally weighted portfolio of the shares and,
   c. the Markowitz optimal portfolio that is expected to return 6% real. (20 marks)

D. Discuss the problems faced by small investors in practise and critique the investment alternatives that small investors have available to them. (40 marks)

(Harvard referencing must be used throughout and a list of references must be included at the back of the group report.)

(Total Marks: 20+20+20+40= 100)
References


