

Bocconi University  
1<sup>st</sup> semester, Academic Year 2008-2009

## 8188 – Asset Management

*Instructors: Professors Marco Navone and Barbara Alemanni*

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## **Course Description**

This course aims at analyzing recent theoretical and empirical developments in portfolio management putting strong emphasis on tactical asset allocation, quantitative stock selection models and the evaluation of investment performance.

This is an intermediate to advanced course in asset management, and we will devote a relevant portion of our time to the practical implementation of portfolio management strategies with the help of very flexible software tools.

## **Prerequisites**

Even if there is no formal requirements for this course you should be familiar with the basic concepts of theoretical finance as, for example, Capital Asset Pricing Model and Market Efficiency. Students are expected to understand the fundamentals of statistics and multiple regression analysis. We will also take for granted the knowledge of basic calculus and matrix algebra.

## **Matlab<sup>®</sup>**

The aim of this course is to give a “hands on” knowledge of a number of instruments and techniques used in the asset management industry. In order to achieve this goal you have to be able to implement analytical models with real market data using some flexible software more powerful than the traditional Microsoft Excel. We chose Matlab because in our opinion it is a good mid-point in the complexity-power tradeoff.

In the first computer based lessons we will cover the basics of the software so no prior knowledge is required. A good reference book for the use of Matlab is

Paolo Brandimarte, *Numerical Methods in Finance, a Matlab-based Introduction*, John Wiley & Sons, 2002.

In order to speed up your learning and make yourself confident with the software we strongly suggest that, before the first Matlab lesson, you run the on-line Matlab Tutorial available at the following address

[http://www.mathworks.com/academia/student\\_center/tutorials/launchpad.html](http://www.mathworks.com/academia/student_center/tutorials/launchpad.html)

## Help Outside of Class

You are welcome to stop by our offices if you have any questions. If it is not convenient for you to come during our office hours, feel free to e-mail or call to set up an appointment. You are also encouraged to share with prof. Navone any comments you might have on the course.

## Group Assignments

You will be handed two group assignments. These projects will ask you to apply the course material on real data, using Matlab.

These assignments should help you better understand how the class material can be applied, as well as prepare you for solving practical investments problems commonly encountered in the world of finance. No late assignments will be accepted.

N°	Topic	Deadline
1	Strategic Asset Allocation	13/11
2	Stock Selection Models	16/12

Groups will be made by 4-5 people. Each group will submit a paper copy of the project, clearly listing the names of all group members on the cover page, and a cd-rom with the data and the Matlab codes used. All group members will earn the same grade on the project. Remember that graders like clear and concise answers.

## Grading

Your course grade will reflect your performance on a final exam, and three group assignments, with weights determined as follows:

Final Exam	50%
Average Assignment Grade	50%

Average Assignment Grade is a function defined as follows:

$$\text{Average Assignment Grade} = \frac{3}{2} \times \text{Min} \left[ 21, \sum_{i=1}^2 \text{Assignment Grade}_i \right]$$

Every group assignment will receive a grade from 1 to 12, with grades above 10 requiring a truly exceptional and outstanding job.

The final exam will be strictly closed-book and closed-notes. Calculators are permitted, except those with word-processing capabilities. No cell-phones and dictionaries, please. A minimum grade of 16/30 in the final exam is required in order to pass the course.

**Students who cannot attend the course** must get in touch with prof. Navone before the chosen exam date. They will have to complete a set of assignments (knowledge of Microsoft Excel is required). For these students the grading policy is:

Final Exam	70%
Average Assignment Grade	30%

A minimum grade of 18/30 in the final exam is required in order to pass the course.

## **Course Material**

There is no book for this course. Teaching material is based on slides and a number of journal articles.

The following book covers roughly 50% of course topics and is very well written and compelling. It's a very interesting reading and a definite must-read if you want to work in this field but is by no means required for this course.

Ludwig B Chincarini, Daehwan Kim, 2006, *Quantitative Equity Portfolio Management*, McGraw-Hill Library of Investment and Finance.

## Required Readings

- Alford, A., 2006, Demystifying the Newest Equity Long-Short Strategies: Making the Unconventional Conventional, *Goldman Sachs Perspectives*.
- Amenc, N., W. Gehin, L. Martellini, and J.-M. Meyfredi, 2007, The Myths and Limits of passive Hedge Fund Replication, *Working Paper, EDHEC Risk and Asset Management Research Centre*.
- Cavaglia, S. and V. Moroz, 2002, Cross-Industry, Cross-Country Allocation, *Financial Analysts Journal*, 58(6), pp. 1-20.
- Deutsche bank (2006), Currency: pensions saviors? *Global Market Research*.
- Drobetz, W., 2001, How to Avoid the Pitfalls in Portfolio Optimization? Putting the Black-Litterman Approach at Work, *Swiss Society for Financial Market Research*, 15(1), pp. 59-75.
- Greer, R. (1997), What is an Asset Class, Anyway? *Journal of Portfolio Management*, 23(2), pp. 86-91
- Harvey C., D. Achour, G. Hopkins and C. Lang, 1999, Stock Selection in Mexico, *Emerging Markets Quarterly* 3, Fall, pp. 38-75.
- Ibbotson, R. and P. Chen, 2003, Long-Run Stock Returns: Participating in the Real Economy, *Financial Analysts Journal*, 59(1), pp. 89-98.
- Idzorek, T., 2006, Strategic Asset Allocation and Commodities, *PIMCO Research Paper*
- Lazzari, V. and M. Navone, 2004, The Selection Ability of Italian Mutual Fund Managers, *SDA WP N° 100*.
- Lioudakis, M., 2005, The Smith Barney European Risk Attribute Model (ERAM) , *Citigroup Smith Barney Quantitative Research*.
- McKinsey & Co. 2006, The Asset Management Industry in 2010, *mimeo*.
- Miller, K., 2005a, S&P 500 Industry Group Rotation Model, *Citigroup Smith Barney Quantitative Research*.
- Miller, K., 2005b, The Smith Barney U.S. Equity Risk Attribute Model (RAM), *Citigroup Smith Barney Quantitative Research*.
- Pain, D. and J. Rand, 2008, Recent Developments in Portfolio Insurance, *Bank of England Quarterly Bulletin*.
- Scherer, B., 2002, Portfolio Resampling: Review and Critique, *Financial Analysts Journal*, 58(6), pp. 98-109.

## Course Outline

N°	Date	Room	Instr.	Topic	Readings
<b><i>A Framework for Strategic Asset Allocation</i></b>					
1	Tue 16/09	2	MN	Course Introduction. The framework for Asset Management	McKinsey&Co (2006) Ibbotson and Chen (2003)
2	Thu 18/09	Azzurra	MN	Matlab Session: Introduction to Matlab	
3	Tue 23/09	Azzurra	MN	Matlab Session: Strategic Asset Allocation	
4	Thu 25/09	N21	MN	Improving Strategic Asset Allocation (1)	Scherer (2002)
5	Tue 30/09	2	MN	Improving Strategic Asset Allocation (2)	Drobetz (2001)
6	Thu 02/10	Azzurra	MN	Matlab Session: Improving SAA	
<b><i>Quantitative Equity Portfolio Management</i></b>					
7	Tue 07/10	2	MN	Introduction to Quantitative Equity Portfolio Management	Slides
8	Thu 09/10	N21	MN	Stock Screening Models	Harvey at al. (1999) Miller (2005a)
9	Tue 14/10	2	MN	Fundamental Models	Cavaglia and Moroz (2002)
10	Thu 16/10	Azzurra	MN	Matlab Session: Screening and fundamental models	
11	Tue 21/10	2	MN	Economic Models	Miller (2005b) Liodakis (2005)
12	Thu 23/10	Azzurra	MN	Matlab Session: Economic Models Estimation	
<b><i>Hot Trends in Portfolio Management</i></b>					
13	Tue 28/10	2	BA	Portfolio Insurance	Pain and Rand (2008)
14	Tue 11/11	Azzurra	MN	Matlab Session: Exercise on Portfolio Insurance	
15	Thu 13/11	N21	MN	Long-Short Investing (130/30 portfolios)	Alford (2006)
16	Tue 18/11	Azzurra	MN	Matlab Session: Exercise on Long-Short Investing	
17	Thu 20/11	N21	BA	Hedge Fund Replication	Amenc et al. (2007)
18	Tue 25/11	Azzurra	BA	Matlab Session: Exercise on HF replication	
19	Thu 27/11	N21	MN	Performance Measurement: stock selection ability, market timing and portfolio polarization	Lazzari and Navone (2004)
20	Tue 02/12	Azzurra	MN	Matlab Session: Performance Measurement	
<b><i>Investing in Alternative Asset Classes</i></b>					
21	Thu 04/12	N21	BA	What is an asset class?	Greer (1997)
22	Tue 09/12	2	BA	Investing in commodities	Idzorek (2006)
23	Thu 11/12	N21	BA	Investing in currencies	Deutsche bank (2006)
24	Tue 16/12	2	MN	Revision	