

**THE GEORGE WASHINGTON UNIVERSITY  
M.S.F. PROGRAM**

**Syllabus for FIN 282: Directed Research in Finance  
Summer 2006**

**Thursday May 25<sup>th</sup> – August 3<sup>rd</sup>, 2006: Duques Hall 552**

<b>Instructors:</b> Michael Haigh U.S. CFTC 1155 21 <sup>st</sup> St NW (202) 418-5063 (202) 418-5660 (fax) michaelshaigh@yahoo.com	Fred Joutz Dept. of Economics Old Main Hall, #215 (202) 994-4899 (202) 994-6147 (fax) bmark@gwu.edu
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**Objective:** The goal of this course is to give the student an opportunity to test several types of applied financial econometric models typically used in practice. This is accomplished by introducing students to important econometric modeling techniques and issues used in financial and economic research. Students then implement these techniques on real world data. Examples will include data on equity returns, exchange rates, and interest rates.

**Course**

**Description:** This course will cover issues regarding the methodology, practice, and implementation of econometric modeling with economic cross-section and time series data. Model building is an attempt to characterize the properties of observed data using simple parametric relationships which remain reasonably constant over time, account for the findings of previous models, and are interpretable in a financial or economic sense. The lectures will approach applied econometric issues. In-class empirical presentations will demonstrate the approach and econometric questions as they arise.

The course focuses on three key aspects of empirical model building: *data properties*, including integration and cointegration; *dynamic specification*, incorporating volatility and including the appropriate choice of lags and the use of error correction models; and *model evaluation and design*. Lecture titles and brief descriptions appear below, and are followed by a selected course bibliography.

## **Course**

**Materials:** The required textbook is: Applied Econometric Time Series, second edition, by Walter Enders, John Wiley & Sons, Inc., New York, NY, 2004. However, please note that this will be used almost exclusively for the second half of the class.

Other materials for the course -- such as handouts, datasets, and sample programs -- will be distributed in class and through the MSF Lab.

**Evaluation:** Students are given short, directed empirical exercises most weeks, and have one week to accomplish the exercise. Students will also have to make a presentation to the class in groups. Details to be discussed. These focus on practicing techniques used by financial economists. Students may work together in groups of 2-3 on the exercises and turn in one write-up for the entire group. Results of the assignment will be reviewed briefly in class, so no late assignments will be accepted. Any assignment not turned in on time will receive an F.

There will be nine assignments; four from Professor Haigh and five from Professor Joutz. These assignments are each graded on an A, B, C, or F scale, and receive equal weight in averaging to obtain a grade from each instructor. Students receiving an F for an assignment which was turned in are strongly encouraged to rewrite the assignment. The course grade is ultimately Pass/Fail, so students must receive a passing grade from each section of the course in order to pass the entire course. The two instructors will submit separate grades to the MSF office, as is custom.

## **Course Outline**

**Lecture 1    Thursday May 25    Guest Speaker**

**Lecture 2      Thursday June 1      Professor Haigh**

Volatility Estimation ARCH/GARCH: Applications to Corporate Risk Management

Campbell, Lo, and MacKinlay, “Volatility Models,” Chapter 7 of *The Econometrics of Financial Markets*, Princeton University Press, 1997.

Handouts

*Assignment 1 passed out.*

**Lecture 3      Thursday June 8      Professor Haigh**

*Assignment 1 due*

Time Series Models: Introduction to Linkages between Time Series: e.g., Vector AutoRegressions, Error Correction Models, and Causality Testing

Handouts

*Assignment 2 passed out.*

**Lecture 4      Thursday June 15      Professor Haigh**

*Assignment 2 due*

Event Studies and Behavioral Finance

Campbell, Lo, and MacKinlay, “Event-Study Analysis,” Chapter 4 of *The Econometrics of Financial Markets*, Princeton University Press, 1997.

Handouts

*Assignment 3 passed out*

**Lecture 5      Thursday June 22      Professor Haigh**

*Assignment 3 due*

*Group Presentations (Assignment 4)*

**Lecture 6      Thursday July 6      Professor Joutz**

Common Factors: An Introduction to Dynamics

DRAFT OF MAY 19, 2006

SUBJECT TO CHANGE

Time Series Dynamics: The ADL(1,1) Model and Specification:  
*An Examination of the Term Structure of Interest Rates*  
Handouts and AETS  
*Assignment 5 passed out*

**Lecture 7      Thursday July 13      Professor Joutz**

*Assignment 5 due*  
Introduction to Panel or Pool Time Series Cross-Section  
*Example with the Term Structure of Interest Rates and Risk Premia*  
Handouts and Readings  
*Assignment 6 passed out*

**Lecture 8      Thursday July 20      Professor Joutz**

*Assignment 6 due*  
Unit Roots and Integration in Financial Data  
AETS, Chapter 4, “Testing for Trends and Unit Roots” and Handouts  
*Assignment 7 passed out*

**Lecture 9      Thursday July 27      Professor Joutz**

*Assignment 7 due*  
Cointegration and Long-Run Relations in Finance  
*An Examination of the Foreign Exchange Market Efficiency Hypothesis*  
*An Examination of the Term Structure of Interest Rates*  
AETS Chapter 6 and Handouts  
*Assignment 8 passed out*

**Lecture 10      Thursday August 3      Professor Joutz**

*Assignment 8 due*  
Cointegration and Long-Run Relations in Finance (continued)  
*An Examination of the Foreign Exchange Market Efficiency Hypothesis*  
*An Examination of the Term Structure of Interest Rates*  
AETS Chapter 6 and Handouts  
\* *Time Permitting* \*  
Stochastic Volatility: Part II Trends and  
Kalman Filters Applied to Term Structure Models (time permitting)  
AETS Chapter 4 and Handouts  
*Assignment 9 passed out*