CZECH FINANCIAL ACADEMY

Featured Seminars::

FINANCIAL TIME SERIES

ANALYSIS, MODELLING AND APPLICATIONS

September 7–8, 2010

ECONOMIC INDICATORS AND THEIR IMPACTS ON FINANCIAL MARKETS

September 9 – 10, 2010

Knowledge Leads the Way ...

2+2

CZECH FINANCIAL ACADEMY

FINANCIAL TIME SERIES – ANALYSIS, MODELLING AND APPLICATIONS

DATES: **September 7 – 8, 2010** • PRICE: **€ 1,500** • LOCATION: **Prague, Mövenpick Hotel**

NEW

- **Trends, Cyclical and Seasonal Variations**
- **Linear Time Series Analysis**
- **Forecasting Economic and Financial Variables**
- **Using Autoregressive Models for Financial Forecasting**
- **Testing and Correcting for Seasonality in Financial Time Series**
- **Using ARCH Models to Predict Variance**
- **Analyzing High-Frequency Data**
- **Using Time Series Analysis in Financial Management**

2+2

The purpose of this course are to give you a good understanding of financial time series, of the statistical tools used for analyzing these series, and of the practical applications of various econometric methods.

We start with a general introduction to time series analysis, and we explain how dynamic behavior of economic or financial variables (such as trends, cyclical variations, and seasonal variations) can be modelled and forecasted and how relationships between the time series of different financial variables and economic indicators can be detected.

We introduce and explain the concept of linear time series analysis. We describe linear models for handling serial dependencies and we discuss regression models with time series errors, seasonality, unit-root non-stationarity, and long-memory processes. We discuss the structure of an autoregressive model of order p, and we calculate one- and multiple-period ahead forecasts given the estimated coefficients, and we explain how autocorrelations of the residuals can be used to test whether the auto regressive model fits the time series. We describe the characteristics of random walk processes, and contrast them to covariance stationary processes. We also discuss how to test and correct for seasonality in a time-series model.

We then turn to the modelling of conditional heteroscedasticity. We introduce various econometric models (such as ARCH and GARCH), that describe the evolution of asset returns over time, and we demonstrate the use of these models to forecast volatility/variance over short and long horizons.

Further, we address the non-linearity in financial time series, introduce test statistics that can discriminate linear from non-linear series, and we present and discuss several non-linear models.

We explain how "high-frequency" financial data can be analysed and we show how serial correlations in e.g. stock returns can result from non-synchronous trading and "bid-ask" bounce. We also look at the dynamics of time duration between trades and at econometric models for analyzing transaction data.

We conclude with a complete practical case study of the use of time series analysis to improve portfolio management decision-making in a real-life investment setting.

TUESDAY, SEPTEMBER 7

09.00–09.15

Welcome and Introduction

09.15–12.00

General Introduction to Time Series Analysis

- Financial Time Series and their Characteristics
  - Asset returns
  - Dynamics of time series
  - Trends, cyclical and seasonal variations and irregular variations
- Overview of Applications in Finance

Linear Time Series Analysis

- Stationarity
- Random Walk Processes
- Correlation and Autocorrelation Functions
- White Noise and Linear Time Series
- Linear and Log-linear Trend Models
  - Structure
  - In-sample and out-of-sample forecasts
  - Calculating predicted trend values given the estimated coefficients
- Small Exercises

12.00–13.00

Lunch

13.00–16.30

Linear Time Series Analysis (Continued)

- Mean Reversion
- Autoregressive Models
- Moving Average Models
- ARMA Models
- Unit-Root Non-Stationarity
- Seasonal Models
  - Testing and correcting for seasonality in a time-series model
  - Examples: Seasonal adjustment of economic time series
- Regression Models with Time Series Errors
- Long-Memory Models
- Small Exercises

WEDNESDAY, SEPTEMBER 8

09.00–09.15

Recap

09.15–12.00

Conditional Heteroscedastic Models

- Volatility and Its Characteristics
- Analyzing Time Series for Nonstationarity
- Testing for Cointegration
- The ARCH Model
- The GARCH Model
- Random Coefficient Autoregressive Models
- Long-Memory Stochastic Model
- Examples of Applications
  - Predicting variance with ARCH and GACH models

Non-Linear Models and their Applications

- Non-Linear Models
- Non-Linear Forecasting
- Example of Applications

12.00–13.00

Lunch

13.00–16.30

High-Frequency Data Analysis

- Non-Synchronous Trading
- Bid-Ask Spread
- Duration Models
- Non-Linear Duration Models
- Bivariate Models for Price Change and Duration

Case Study: Using Time Series Analysis to Improve Portfolio Decisions

- Forecasting Stock and Commodity Prices
- Quantitative Trading Strategies

Evaluation and Termination of the Seminar

2+2

ECONOMIC INDICATORS AND THEIR IMPACTS ON FINANCIAL MARKETS

DATES: **September 9 – 10, 2010** • PRICE: **€ 1,500** • LOCATION: **Prague, Mövenpick Hotel**

- **Macroeconomics and Financial Markets**
- **Importance of Fiscal and Monetary Policy for Financial Markets**
- **Overview of Economic Indicators and their Uses**
- **Leading Economic Indicators and their Effects on Financial Markets**
- **Coincident Economic Indicators and their Effects on Financial Markets**
- **Lagging Economic Indicators and their Effects on Financial Markets**
- **Economic Integration and Global Financial Markets**

2+2

The purpose of this seminar is to give you a good understanding of the practical uses of economic indicators for investment analysis and other investment management purposes.

We start with a review and analysis of modern macroeconomics from the perspective of the financial community, focusing on important issues such as growth, business cycles, inflation expectations, interest rates, trade and balance of payments deficits, government deficits etc. We also explain how fiscal and monetary policies are used as stabilization tools and discuss how these policies can affect the broad financial markets and market values of different asset classes.

We then take a closer look at how trends and cyclical behaviour of economic variables are reflected in various economic indicators. We give an overview of the different types of economic indicators and explain how they are classified according to direction (procyclical, countercyclical or acyclical) and timing (leading, coincident or lagging variable). Further, we look in more detail at examples of the various types of indicators, including "hours of production workers in manufacturing", "new claims for unemployment insurance" (leading indicators), "index of industrial production", "personal income", and "value of new orders for consumer goods" (coincidental indicators), and "unemployment rate" (lagging indicator). We will go LIVE to follow the release of some of these indicators during the seminar!

In each case, we explain how the indicators should be interpreted, and we discuss how the release of new economic data can impact the value of financial instruments and investment projects. We also demonstrate how regression analysis can be used as a practical tool in conjunction with economic indicators and modelling to forecast industrial production, consumer spending and other important variables, and to identify linkages between various indicators. Further, we show how factor models can be used to estimate the effect on stock prices, interest rates and exchange rates of changes in these economic variables. We also give practical examples of possible profitable investment strategies based on the effects of forecasted/expected changes in economic indicators.

THURSDAY, SEPTEMBER 9

09.^{00}–09.^{15}

Welcome and Introduction

09.^{15}–12.^{00}

A Review of Modern Macroeconomics

- Overview of Important Macroeconomic Variables
- Alternative Measures for Output and Income
- Economic Fluctuations, Unemployment and Inflation
- Government Deficits and Interest Rates
- Balance of Payments and Exchange Rates
- Fiscal and Monetary Policies and their Impacts on the Financial Markets
- Small Exercises

Introduction to Economic Indicators

- What Is an Economic Indicator, and Why Are they Important?
- Types of Economic Indicators
  - Leading, Lagging, Coincident
  - Procyclical, Countercyclical, Acyclical
  - Composite and Diffusion Indexes
- Overview of Domestic and International Indicator Indexes
- Linkages between Economic Indicators
- Overview of the Practical Uses of Economic Indicators

12.^{00}–13.^{00}

Lunch

13.^{00}–16.^{30}

Leading Indicators and their Importance to Financial Markets

- Important Indexes of Leading Indicators
  - The Conference Board (US)
  - OECD's Composite Leading Indicator for the G7 Economies
  - The ECRI Index
- A Closer look at the Individual Leading Indicators
  - Stock Prices and Stock Market Returns
  - Average Weekly Hours
  - New Orders
  - Money Supply
  - Housing Permits
  - Consumer Spending and Confidence
  - Interest Rate Spreads (Yield Curve)
- Other Leading Indicators
- Forecasting Recessions Using Leading Economic Indicators
- Interpreting Declines in the Leading Index: The Three D's
- Investment Implications
  - How the Release of New Economic Data Can Impact the Value of Financial Instruments and Investment Projects
  - Estimating the Effect on Stock Prices and Interest Rates
- Cautions and Conclusions about Leading Indicators
- Small Exercises

FRIDAY, SEPTEMBER 10

09.^{00}–09.^{15}

Brief recap

09.^{15}–12.^{00}

Coincident Indicators and their Importance to Financial Markets

- Industrial Production
  - Real and Nominal GDP, Volume of Sales of the Manufacturing and Wholesale-Retail Sectors, Durable Goods Orders, Factory Orders
  - Practical Investment Implications of Industrial Production Indicators
  - Examples of Investment Strategies of (Changing) Industrial Production Indicators
- Employment
  - Employment Situation, Weekly Claims for Unemployment Insurance, Help-Wanted Advertising Index, Corporate Layoff Announcements, Mass Layoff Statistics (MLS)
  - Practical Investment Implications of Employment Indicators
  - Examples of Investment Strategies to Exploit (Changing) Employment Indicators
- Other Coincident Indicators
  - Personal Income and Spending
  - New and Existing Home Sales
  - Practical Investment Implications and Examples of Investment Strategies
- Small Exercises

12.^{00}–13.^{00}

Lunch

13.^{00}–16.^{00}

Lagging Indicators and their Importance to Financial Markets

- Unemployment
- Cost of Doing Business
  - Inventory-Sales Ratios
  - Prices, Productivity, Wages, Employment Cost Index
- Consumer and Social Costs
  - Ratio of Installment Credit Outstanding to Personal Income
  - Percentage Change in CPI
  - Average Duration of Unemployment
- Other Lagging Indicators
- Practical Investment Implications of Changing Lagging Indicators
  - Understanding the Behavior of the Economy
  - Examples of Investment Strategies that Are Based Upon the Analysis of Lagging Indicators
- Small Exercises

Outlook: Economic Integration and Global Financial Markets

- Where is the Global Economy Heading?
- What will be the Impact on Global and Local Financial Markets?
- Taking the Pulse of the Global Economy by Looking at Economic Indicators

Summary, evaluation and termination of the Seminar

Terms and Policies of the Czech Financial Academy

CZECH FINANCIAL ACADEMY
The Czech Financial Academy is a joint venture between the consultancy companies MONECO and BASISPOINT that offers a comprehensive programme of English-language seminars, trainings and practical workshops lectured by qualified tutors. Our objective is to provide the industry professionals with advanced financial know-how and up-to-date analytical methods and skills.

SEMINAR VENUE
All Czech Financial Academy seminars are held at the international four-star Mövenpick Hotel in Prague at Mozartova 1 (Mozart Street). Accommodation is not included in the seminar price, but we are happy to offer hotel reservations at discounted prices for our clients.

TUITION LANGUAGE
Seminar tuition is in English language, as are all manuals, training software etc. Therefore, in order to benefit from participation, at least a passive knowledge of English, including common financial phrases and related terminology, is required.

REGISTRATION
Clients who decided to participate, should submit us in advance a registration for a particular seminar (letter, fax, internet etc.). Subject to availability, the participant will then receive a confirmation of participation. The number of participants is always strictly limited in order to secure an effective and focused learning environment.

SEMINAR PRICES
The quoted seminar prices are per person and include all the training manuals, lunches and refreshments, certification diploma in English and selected software solutions used at the seminar. The price does not include hotel accommodation. Quoted prices are exclusive of local V.A.T. "Bundle" prices represent the total fee for participation in mutually related seminars (i.e. "Models 3+2, 2+3, 2+2, 1+3, 3+1, 1+2+2 and 2+2+1"). "Bundle" prices are provided in the Calendar of the Czech Financial Academy Seminars.

DISCOUNTS
Bulk discounts are offered when submitting an application for the participation of more than one person. A 10% discount is offered when at least two participants from one company register for a seminar or one participant registers at once for two or more seminars. The discounts do not apply for "bundle" prices, as these already represent discounted prices.

INVOICING AND PAYMENT
An invoice for the seminar price will be sent to the participants no later than 3 weeks prior to the beginning of the seminar. Full payment of the invoice must be made before the start of the seminar as a precondition of participation.

TERMS OF CANCELLATION
If for whatever reasons a registered participant is unable to attend, a substitute delegate may be appointed to participate instead. For cancellations received 20 days or more before the beginning of the seminar, a 10% cancellation fee of the full price will be invoiced i.e. 90% of the price is refunded. For cancellations received less than 20 days prior to the beginning of the seminar, the full price is payable i.e. no refund will be provided. All cancellations must be in writing. The organizers of the Czech Financial Academy reserve the right to cancel the individual participation or cancel the entire seminar or part of it for whatever unspecified reasons, including possible force majeure. In this case, the price paid will be refunded in full or in part, accordingly.

REGISTRATION FORM

• Financial Time Series – Analysis, Modelling and Applications	☐	September 7 – 8, 2010	€ 1,500	€ 2,500	2+2 ☐
• Economic Indicators and their Impacts on Financial Market	☐	September 9 – 10, 2010	€ 1,500		

COMPANY

Name:

Approving Manager:

Person responsible for training:

Address:

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