

BUS 810: Fixed Income Security Analysis and Portfolio Management

MBA in Global Asset Wealth Management

MA in Financial Risk Management

Simon Fraser University

Spring 2008

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Lectures: Wednesday's 4pm to 7pm.

Office Hours: Monday 3:30-5:30 (Burnaby)

Wednesday 12:30-2:00 Segal.

Outline: (Subject to change)

- Lecture 1 (Jan. 9): Introduction and Bond Mathematics Review. Fabozzi Ch 1+2.
- Lecture 2 (Jan. 16): HW1 & Bond Pricing Relationships. Fabozzi Ch 3.
- Lecture 3 (Jan. 30): HW2 & Price-Yield Relationships and Duration. Fabozzi Ch 4.
- Lecture 4 (Feb. 6): HW3 & Measuring Yields. Fabozzi Ch 5.
- Lecture 5 (Feb. 14): HW4 & Forward Rates. Fabozzi Ch 5 and Diebold and Li (2006 JOE).
- Lecture 6 (Feb. 27): MT Review & Term Structure Models. Fabozzi Ch 16. CKLS (1994 JF), Smith (2002 JBES).
- Lecture 7 (March 5): Immunization. Fabozzi Ch 4.
- Lecture 8 (March 12): HW5 & Principal Component Analysis. Litterman and Scheinkman (1991 JFixedIncome) Perignon and Smith (2007 JBF), Perignon, Smith and Villa (2007 JIMF).
- Lecture 9 (March 19): Active Bond Trading Strategies. Fabozzi Ch 22.
- Lecture 10 (March 25): HW6 & Credit Risk Management. Fabozzi Ch 20+21.
- Lecture 11 (April 2): HW7 & Swaps and Credit Derivatives. Fabozzi Ch 28+29.

Grading Policy:

Midterm Exam: (Feb. 20). 30 percent.

Final Exam: (April 9). 35 percent.

The final exam is cumulative (i.e. will cover all material from the entire semester), though it will place more emphasis on the material covered after the midterm.

Projects: 15 percent each

1. Bootstrapping the Yield Curve. Due: Feb 27.
2. PCA-based Hedging. Due: March 19.

The projects will require proficiency in MATLAB so please brush up on these skills.

Homework Exercises: (5 percent)

You will be required to submit your solutions to the assigned homework exercises no later than 2 hours prior to the start of class. The exercises will not be graded in detail, but you will receive credit for an honest attempt.

Description: BUS 810 is a course on fixed income security analysis and portfolio management. The goal of the course is to develop a conceptual framework for fixed income valuation and risk management. To achieve this goal, we focus on a narrow set of fixed income security types with risk-less and deterministic cash flows. The framework will serve as the foundation built on by subsequent courses.

Text: Frank J. Fabozzi (2006) *Bond Markets, Analysis, and Strategies*, 6th Edition

Extra references. (Some of these are quite technical but the economic content is important.)

We will also look at some results from some projects by last years FRM class.

Bolder, D. and D. Streliski. (1999), Yield Curve Modelling at the Bank of Canada, *Technical Report No. 84*, Bank of Canada Technical Reports.

Chan, K.C., G. Karolyi, F. Longstaff, and A. Sanders (1992) The Volatility of Short-term Interest Rates: An Empirical Comparison of Alternative Models of the Term Structure of Interest Rates, *Journal of Finance*, 47, 1209-1227

Diebold and Li (2006) Forecasting the Term Structure of Government Bond Yields, *Journal of Econometrics*, 130, 337-364.

Falkenstein, E. and J. Hanweck (1996), Minimizing Risk from Nonparallel Shifts in the Yield Curve, *Journal of Fixed Income*, Volume 6, Number 1.

Grieves, R. and A. Marcus (1992) Riding the Yield Curve: Reprise, *Journal of Portfolio Management*, Volume 18, 67-76.

Harvey, C (1989) Forecasting Economic Growth with the Bond and Stock Markets, *Financial Analysts Journal*, September/October, 38-45.

Litterman, R. and J. Scheinkman (1991) Common Factors Affecting Bond Returns, *Journal of Fixed Income*, June, 54-61.

Perignon, C. and D. Smith (2007) Yield Factor Volatility Models, *Journal of Banking and Finance*, 31, 3125-3144.

Perignon, C., D. Smith and C. Villa (2007) Why Common Factors in International Bond Returns are Not So Common, *Journal International Money and Finance*, 26, 284-304.

Smith, D. (2002) Markov-Switching and Stochastic Volatility in Short-Term Interest Rates, *Journal of Business and Economic Statistics*, 20, 183-197.

Vasicek, O. (1977) An Equilibrium Characterization of the Term Structure, *Journal of Financial Economics*, 5, 177-188.

Academic Honesty:

Academic integrity is central to the university and it is expected that all students act honestly on all assessment. Students should be familiar with the definition of academic honesty <http://www2.sfu.ca/policies/teaching/t10-02.htm>. Included in the definition of academic dishonesty is plagiarism which involves the copying of any material without giving explicit credit (reference) to the author. No excuses (including ignorance) will be accepted.

Potentially useful websites

<http://finance.yahoo.com/bonds>

Note in particular the bond rates, the bond screener, and the economic calendar.

Economic and Financial Data for a decade:

http://www.newyorkfed.org/research/directors_charts/econ_fin.pdf

Note in particular

http://www.newyorkfed.org/research/directors_charts/ipage19.pdf

International long-term rates:

http://www.newyorkfed.org/research/directors_charts/long.pdf

International short-term rates:

http://www.newyorkfed.org/research/directors_charts/short.pdf

Yield Data

<http://www.bloomberg.com/markets/rates/index.html>

http://finance.yahoo.com/bonds/composite_bond_rates

<http://www.federalreserve.gov/releases/H15/data.htm>

<http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/yield.shtml>

Methodology used by the Treasury department to calculate the yield curve

<http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/yieldmethod.html>