

Fixed Income Securities

https://docs.google.com/document/d/113SjKle13cpmBgo_QfX05ARvn-Y5LBNjsciGCoSSM/edit?usp=sharing

- 이 과목은 중간고사 기말고사 등 시험이 없습니다.
- 팀 프로젝트도 없습니다.

Course Requirements and Assignments

- **There is no ordinary midterm, final or any exam.** I do not want to test you with the knowledge readily available in wikipedia or textbook.
- Your term papers and homeworks will determine your grade.
- Midterm and final exams are also about the progress and quality of your individual project.
- You should write a term paper about fixed income securities.
- You are expected to master excel vba and R.

Term paper format

- * [Use this storyline and format](#)
- * Please use APA format for your references. See the following example.
- * Kang, H. G., Joo, H. H., & Cho, J. (2014). Brand-size complementarity in the choice of retail stores. *Applied Economics Letters*, 21(6), 413-416.
- * The other part of your paper should follow the guideline below.
- * <http://aom.org/publications/amj/styleguide/>
- * If you cite a paper in the body of the text like (Kang, Joo and Cho, 2014), this should be specified in the reference list at the end of the paper.
- * If an article is in the reference list, it should be mentioned at least once in the main body.
- * [Sample and further guideline](#)
- * If you do not follow this format guideline correctly, your grade will be downgraded by two.

- 이 수업은 아주 쉽습니다.
- 연습 및 선행학습 불필요. 쓸데없이 시간 낭비 하지 마세요.
- 중학교 수준의 수학으로도 충분합니다.
- 재무에 관한 사전지식 전혀 필요 없습니다.

- 중요한 사항은 한국어로 복습합니다.

If you take following lecture beforehand, your life would be easier.

- You can also learn R at MOOC as follows (by the order of easiness)
- <https://www.codeschool.com/courses/try-r>
- <http://www.rstudio.com/resources/training/online-learning/#R>
- <https://www.coursera.org/course/rprog>
- <https://www.edx.org/course/kix/kix-kiexplorx-explore-statistics-r-1524>
- Or find manuals at <http://cran.r-project.org/manuals.html>
- [Data for practice](#)

Class materials

- [Fixed Income Securities: Valuation, Risk, and Risk Management](#), Pietro Veronesi (University of Chicago, Booth School of Business), January 2010, ©2011. [PPT slides](#)
- <https://class.coursera.org/fe1-001/lecture>
- <https://class.coursera.org/fe2-001/lecture>

Course Requirements and Assignments

- Attendance, attitude and class participation: We will discuss a lot. This class should be very interactive.
- We have students presentations every week. I will assign presentation topics.
 - If necessary, students can use presentation materials at: <https://drive.google.com/folderview?id=0B9soGjgURHI7bjFGbFZTZJ5U0U&usp=sharing&tid=0B9soGjgURHI7RFo0SEJ6ZEI4Unc>
- Students may want to type their homework and submit. In particular, neither handwritten figures nor equations will be accepted.

Important papers

* Fama, E. F., & Bliss, R. R. (1987). The information in long-maturity forward rates. *The American Economic Review*, 680-692.

* Cochrane, J. H., & Piazzesi, M. (2005). Bond Risk Premia. *The American Economic Review*, 95(1), 138-160.

Notes

- [Honor Code](#)
- [Re-grading Policy](#)
- [Teaching statement](#)
- Office hour: send an email to detail the issues you plan to discuss and make appointment

1. Class introduction

Presentation assignment

Getting started with excel vba

Black Scholes Model

Cronqvist, H., & Siegel, S. (2014). The genetics of investment biases. Journal of Financial Economics, 113(2), 215-234.

Mathematical constant; natural logarithm

Check this term paper format

2. Veronesi ch01

Convertible bond

3. Veronesi ch02 (2.1-2.3)

Binomial interest rate models

Ch09: One Step Binomial Trees (excel)

Ch10: Multi-Step Binomial Trees

Binomial tree example for interest rate derivatives

Ch11: Risk neutral trees and derivative pricing

Google spreadsheet for Ho-Lee and BDT

Model calibration and Black-Derman-Toy model

VBA Optimization

4. Veronesi ch02 (2.4-2.5)

* Bond forward, bond futures, caplets, floorlets, swap, swaption (google spreadsheet)

* Model calibration and Black-Derman-Toy model

* Credit default swaps

5. Veronesi ch02 (2.8)

Credit default swaps

<https://www.dropbox.com/s/gh0pw5lb6ohqfb3/commodity130224.docx>

Chap08: Mortgage backed securities

6. Veronesi ch03 (3.2)

Duration and convexity

7. Veronesi ch03 (3.3-3.4)

8. Veronesi ch03 (3.7)

9. Veronesi ch04 (4.1)

10. Veronesi ch05 (5.1-5.2)

11. Veronesi ch06 (6.1)

12. Veronesi ch05 (5.3-5.4)

13. Veronesi ch06 (6.2)

14. Veronesi ch08 (8.1-8.2 without example 8.2)

Pass-through securities

15. Veronesi ch08 Example 8.2 (p.298)
16. Veronesi ch08 (8.3 without example 8.3)
17. Veronesi ch08 Example 8.3 and Effective Duration (p.301)
18. Veronesi ch08 Example 8.4

Binomial tree example for interest rate derivatives

VBA for binomial tree model

Arrow Debreu Securities @Binomial Model (option and futures)

Berkman, H., Koch, P. D., & Westerholm, P. J. (2014). Informed trading through the accounts of children. The Journal of Finance, 69(1), 363-404.

Simplico; Real option note

No arbitrage

Black Model and Black Scholes Model (VBA Practice)

CDS and moral hazards: Amherst Holdings at Austin ([link1](#), [link2](#)): How to solve the moral hazard problems in CDS market?

Tactical asset allocation and investors' sentiments

<http://www.utstat.utoronto.ca/sjaimung/courses/mmf1928/main.htm>