

Course ID Reduced-form Credit Risk Pricing & Topics in Sovereign Credit Risk

1. Course details

Semester:	1
Credit rating:	1 ECTS /15TU
Pre-requisite(s):	This course is a PhD elective. Students will benefit from having prior exposure to a course on theoretical and empirical asset pricing. It is strongly recommended to read chapter 6 in the book ``Financial Decisions and Markets: A course in Asset Pricing," by John Campbell, and Chapters 1-2 in the book ``Asset Pricing," by John Cochrane.
Lecturer(s):	Patrick Augustin
Administrator:	Roswitha Glorieux
Tutor(s):	TBD
Seminar times and rooms:	22, 25 April 2022 (schedule TBA)
Tutorial times and rooms:	TBA
Communications	It is important that students should regularly read their University e-mails, as important information will normally be communicated this way.
Mode of assessment:	Students will have to write 2 referee reports on unpublished scientific papers. A list of papers with subjects related to the course material will be provided.
Examination Periods:	Spring 2022
Course WebPage:	Moodle.uni.lu

2. Aims and objectives

Aims

This course is an applied course in empirical asset pricing focused on the modeling of credit risk using the reduced-form approach. While the applications are geared towards topics on sovereign credit risk, the insights are applicable to corporate credit risk as well. The objective is to provide students with a toolbox in empirical asset pricing that can be used to get started with research projects involving sovereign and corporate default risk. The course starts with an overview of credit risk and credit risk models. After reviewing the literature on empirical models of credit risk, the course will cover reduced form credit risk pricing models. Then, several tools in empirical asset pricing are illustrated using two research papers, including the functioning of recursive utility preferences, log-linearization methods, the modeling of volatility using discrete time square-root (ARG) processes, and the pricing of fixed income securities using recursive solution techniques. Finally, the course discusses topics on sovereign credit risk, including the nexus between sovereign and both corporate and financial credit risk.

Learning Objectives

1. The purpose of this course is to expose students to applied research in empirical asset pricing. After the lectures, students should have a working knowledge of solution techniques to value fixed income securities subject to default risk and consumption-based equilibrium asset pricing models, including the specification of utility functions, endowment economies, and the pricing of fixed income securities.

3. Plan of semester

Day 1 (morning): 4 TU

Day 1 (afternoon): 4 TU

Day 2 (morning): 4 TU

Day 2 (afternoon): 3 TU

Course details (by topics)

- . Introduction to Credit Risk and Credit Derivatives

- . Empirical Models of Credit Risk

- . Reduced-Form Models of Credit Risk

- empirical Models and Reduced-Form Credit Risk Pricing in General Equilibrium Models

- . A Macro_finance Model of the Term Structure of Sovereign CDS Spreads (based on Augustin JME 2018)

 - { Epstein-Zin Preferences

 - { Preference for Early Resolution of Uncertainty

 - { Derivation of the SDF

 - { Log-Linearizations

 - { ARG Gamma Processes

 - { CDS Pricing

- Benchmark Interest Rates when the Government is Risky (based on Augustin, Chernov, Schmid, & Song JFE 2021)

 - { Alternative Log-Linearization Methods

 - { IRS, OIS, Treasury, and CDS Pricing

- Topics on Sovereign credit risk

 - { Determinants of Sovereign Credit Risk

 - { Nexus between Sovereign & Financial Credit Risk

 - { Nexus between Sovereign & Corporate Credit Risk

- . Conclusion

4. Reference list/ Bibliography

. Acharya, V. V., Drechsler, I. and Schnabl, P. (2014). A pyrrhic victory? - bank bailouts and sovereign credit risk, *The Journal of Finance*, 69(6): 2689-2739.

. Augustin P., M. Chernov, L. Schmid, D. Song (2021), Benchmark interest rates when the government is risky, *Journal of Financial Economics*, 140(1):220-249.

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. Augustin P. (2018), The Term Structure of CDS Spreads and Sovereign Credit Risk, *Journal of Monetary Economics*, Vol. 96(1):53-76.

. Augustin, P., Subrahmanyam, M. G., Tang, D. Y. and Wang, S. Q. (2015). Credit default swaps: Past, present, and future, *Annual Review of Financial Economics*, 8(1):1-25.

. Campbell, John Y., *Financial Decisions and Markets: A course in Asset Pricing*, Princeton University Press, Chapter 6.

. Cochrane, John H., *Asset Pricing*, Princeton University Press, Chapters 1{2.

. Lee, J., A. Naranjo and S. Sirmans, (2016). Exodus from Sovereign Risk: Global Asset and Information Networks in the Pricing of Corporate Credit Risk, *Review of Financial Studies*, 71(4): 1813-1856.

. Longsta_, F. A., Pan, J., Pedersen, L. H. and Singleton, K. J. (2011). How sovereign is sovereign credit risk?, *American Economic Journal: Macroeconomics*, 3(2): 75-103.

5. Further information about assessment

Examination(s)	1	
Weighting:	50%	50%
Date:	TBD	TBD
Length:	Referee Report (3-10 pages)	Referee Report (3-10 pages)s
Structure:	Pass/Fail	Pass/Fail