

## **KfK CF/IV: Seminar on Credit Risk Modeling**

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**Schedule:** Monday 4-8pm, starting Dec 15

Credit risk modeling is an important tool for banks, financial regulators, and credit rating agencies. I expect that the current turmoil in the financial markets will lead to an even bigger demand for experts in this field. If you attend this seminar, you might become one of these sought-after experts.

**Content:** The seminar is based on the 2007 book “Credit Risk Modeling using Excel and VBA” written by Loeffler and Posch and published by Wiley. The seminar has three parts. In the first part, we will discuss statistical methods for modeling credit risk. Such methods are used by every bank, regulatory authorities, as well as credit rating agencies. In the second part, the students will gather some experience in practical credit risk modeling. If time permits, the seminar will conclude with a discussion of the economics of credit rating.

**Format:** We will form teams consisting of two students per team. Each team will read, summarize, and present one of the chapters of the book mentioned above. Moreover, each team has to work through one application exercise in order to apply the methods presented. To stimulate the discussion in class, each team will however try to apply a method that has been presented by another team.

The format is as follows. We first assign chapters to the teams. Then, we switch back and forth between discussing the chapters, and applying what we discussed. In the first week, the two chapters will be presented by the first two teams, and discussed in class. At the end of the class, we will randomly select two other teams who will try to apply the methods that have been discussed. The latter teams will present their results at the start of the following class. After this presentation, the next chapters will be presented and discussed, and we will again select teams who will try to apply the methods we’ve heard about. We continue in this format until every team has done one presentation, and worked on one application exercise.

We will assign the chapters to the teams in advance, but we will **not** have an advance assignment of the application exercises. I will announce and assign these exercises as we go along. I expect that this format of the seminar will be conducive to in-class discussions. (I've sat through too many seminars that were boring as hell because there was no in-class discussion. I trust you know what I mean – let's not have another one of these seminars.)

Your grade will be based on your presentation (40%), application exercise (30%), and participation in the discussion in class (30%).

**Materials:** We will cover chapters of the book “Credit Risk Modeling using Excel and VBA”, 2007, Wiley. The chapter titles do sound a quite technical, but I'm sure that you will be able to understand everything.

- Chapter 1 - Estimating Credit Scores with Logit
- Chapter 3 - [Credit Rating] Transition Matrices
- Chapter 4 - Prediction of Default and Transition Rates
- Chapter 5 - Modeling and Estimating Default Correlations with the Asset Value Approach
- Chapter 6 - Measuring Credit Portfolio Risk with the Asset Value Approach
- Chapter 7 - Validation of Rating Systems
- Chapter 8 - Validation of Credit Portfolio Models
- Chapter 11 - Basel II and Internal Ratings