Credit Risk

Projects

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Project 1
Sensitivity to transition risk

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Description of the project: This project aims at building an index of sensitivity to climate risk (e.g. opinion polls, forward prices of CO_2 per ton, number of academic publication on climate risk) and test its correlation with equity or CDS indexes.

Target: Definition of the index, correlation tests.

Project 2
Impact of inflation on credit risk

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Description of the project: This project aims at assessing the impact of inflation on a retail banking portfolio. Making hypotheses on the imapact of inflation on expenses and revenues, you will have to analyze the impact on the average probability of default, while changing the inflation parameter, with differentiated impacts on revenues and expenses (inflation is usually not reflected in salaries immediately). To be noted, we expect you to take into account that households with lower credit quality tend to spend a larger part of their revenues, thus being more affected by a differentiated impact of inflation.

Suggested dataset:
https://www.kaggle.com/competitions/home-credit-default-risk/data

Target: List of hypotheses, statistical analyses of the restults.

Project 3
Climate Risk: Transition risk and energy supply

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Description of the project: This project aims at assessing the impact of transition risk arising from the risk of higher energy costs and its impact on the credit quality of counterparts. Selecting three firms, from three different sectors, which publish their scope 2 emissions or the energy consumption, while stressing energy prices in a adapted structural model (as presented in Lectures 2 and 3 or as can be calibrated on Kaggle Data), the purpose is to better understand the the magnitude of this risk. The impact of such a risk on a portfolio of corporate loans could be studied too, to broaden the perspectives.

Suggested dataset:
https://www.kaggle.com/competitions/home-credit-default-risk/data

Target: Presentation of the three selected firms, suggested adapted structural model, anticipated areas of extensions for a portfolio approach of transition risk through energy prices stress.