IRP 15: Individual Research Project

Topic

Deep Generation of Financial Time Series

Involvement

- IRP belongs to WP1 (Financial Data Space)
- WP Leader: BBU (Cluj)
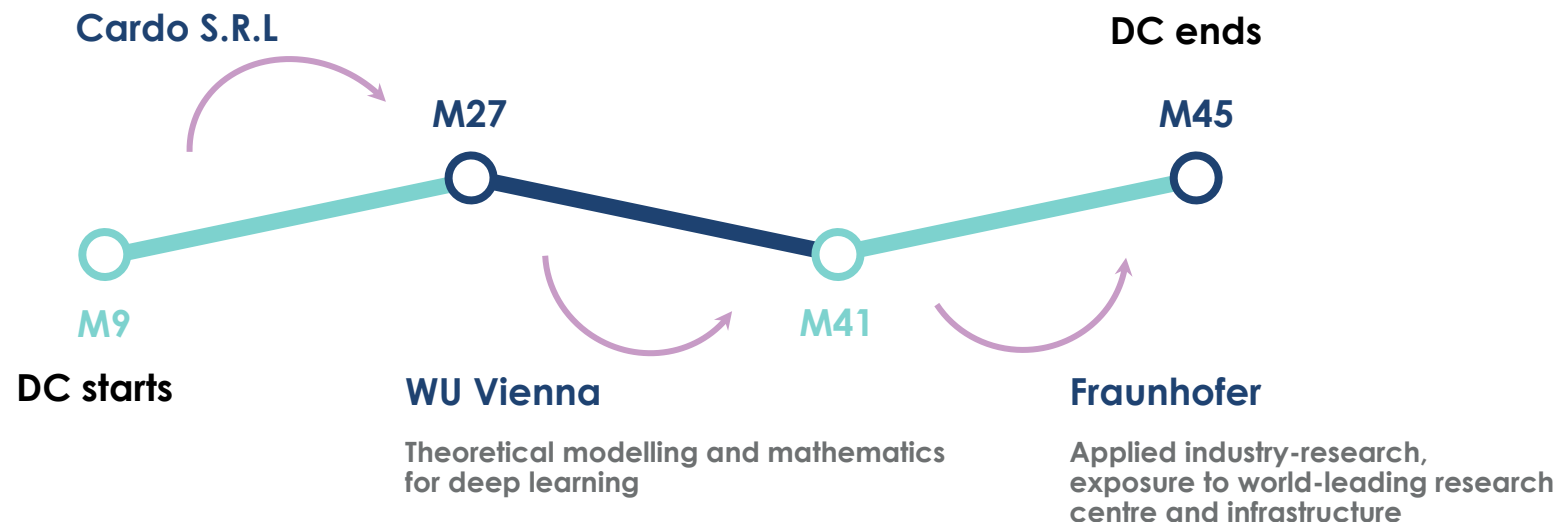- Two supervisors from secondments: WWU, and FRA

Objectives

Macroeconomics factors such as central banks' interest rates, inflation, unemployment rate, house price indices, to name a few, are of foremost importance in Financial Markets. The aim of this project is to **benchmark various methods** from classical statistical learning and modern machine learning in order **to predict their point value in the future**. As a second step the student will be using the above predictions to **forecast future market scenarios in a what-if fashion**.

Deliverables

Expected Results The project's outcomes will contribute to the expanding body of knowledge concerning the applications of cutting-edge machine learning and artificial intelligence techniques to traditional financial problems. We will **apply recent findings** from the ML literature **on time series forecasting** in the first step. In the second phase of the project, the DC will be able to conduct **research** in the field of **causal inference in finance**, which also appears to be an extremely promising area of study. The anticipated outcome will be three research/conference papers describing the data analysis, modelling approaches, and experimental results.

IRP 15 **TIMELINE**

Cardo S.R.L

M27

DC ends

M45

M9

M41

DC starts

WU Vienna

Theoretical modelling and mathematics for deep learning

Fraunhofer

Applied industry-research, exposure to world-leading research centre and infrastructure

DIGITAL