# Missing data, anomalies and structural breaks

## **Final Project**

Goal: compare models

• Pre-process data.

Goal: compare models

- Pre-process data.
- Choose models (e.g. ARIMA, ETS, Theta, OLS etc.).

#### Goal: compare models

- Pre-process data.
- Choose models (e.g. ARIMA, ETS, Theta, OLS etc.).
- Choose parameters (or predictors). Select a winning model in each class.

#### Goal: compare models

- Pre-process data.
- Choose models (e.g. ARIMA, ETS, Theta, OLS etc.).
- Choose parameters (or predictors). Select a winning model in each class.
- Compare models by their predicting power.

## Intro

#### **INTRO**

- Industries like finance, retail, and economics frequently use time series analysis because currency and sales are always changing.
- This course covers modern methods for time series analysis and forecasting.
- Outline: Time series decomposition, ARIMA, Forecasting and model comparison, Pre-processing data Choose models (e.g. ARIMA, ETS, Theta, OLS etc.).
- In addition to mathematical foundations of time series, students get hands-on experience building predictive models in cases of both stationary and non-stationary time series using R.
- Compare models by their predicting power.

• Time series decomposition

- Time series decomposition
- ARIMA

- Time series decomposition
- ARIMA
- Forecasting and model comparison

- Time series decomposition
- ARIMA
- Forecasting and model comparison
- Pre-processing data

- Time series decomposition
- ARIMA
- Forecasting and model comparison
- Pre-processing data

- Time series decomposition
- ARIMA
- Forecasting and model comparison
- Pre-processing data

Prerequisites: Statistics, Econometrics (I), basic R knowledge