Assignment 7: ARMA Models

Using the French Databases introduced in the lectures

1. Estimate an first order autoregressive model for PR15 and produce forecasts at different horizons form thi s model

2. Evaluate the presence of seasonality in the market returns and in the returns of portfolio 15

3. Estimate a AR with the appropriate seasonality for PR15 produce forecasts at different horizons and compare them with those generated from the model without seasonality

4. Generate the VaR at risk for investing in portfolio 15 based on the following specification:

$$\begin{aligned} PR15_t &= \beta_0 + \beta_1 PR15_{t-1} + \beta_2 Jan_t + \beta_3 r_t^{mkt} + u_{1t} \\ r_t^{mkt} &= \gamma_0 + u_{2t} \end{aligned}$$

   where u_{1t} and u_{2t} are two independent processes.