

GROUP WORK INSTRUCTIONS

Group work is mandatory and will constitute **30% of the final grade**. It should be sent by **May 6th** by e-mail do the instructor and to the *assigned discussant group*. A printed copy should be handed in before or at the actual group presentation. Each group should have three to five members.

The work will be **graded** both by the *paper content*, its final *written form*, and the *oral presentation and discussion*. In case presenters' performances at the presentation are very uneven, different grades can be assigned to the different members of the same group. The depth and content of discussant's questions to the presenting group and subsequent discussion will also be taken into consideration for each group grade.

The presenting group will have *exactly 10 minutes* for the presentation, and we will reserve up to 10 additional minutes for the discussion. The discussant group should start the discussion with approximately three minutes of questions and comments.

The written report should have a maximum of **10 pages**, including cover, appendices, tables, figures, references, and possible table of contents. It should be written in standard format, with minimum font size 11 and minimum line spacing of 1.5.

We are sure that no form of plagiarism will be committed, and you know that it would result in group work cancelation and severe inquiry according to the law and to ISEG's regulations.

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Choose one time series to study – preferably a macroeconomic one. You must include detailed information about your source. The time series *should preferably have some form of seasonality* and a *reasonable data length* (at least 50 or more observations, preferably 150 or more). Leave out of the analysis and of the estimation sample a small number of final observations to perform an *ex-post forecasting* of these observations (for instance, 4 to 8 data points for quarterly series, 12 to 24 points for monthly series and so on).

Perform standard analysis of your series, including discussion of its main characteristics (trend, stationarity, seasonality, autocorrelation, volatility...). Operate the necessary and adequate transformations (Box-Cox, smoothing, differencing, trend-fitting...). Select at least two reasonable competing models for estimation and forecasting.

Perform standard ARIMA Box-Jenkins analysis with the estimation sample used. With two final models selected, predict the observations you have left for out-of-sample for ex-post forecasting and compare models' predicting accuracy, by using adequate measures.

Justify each step of your operations and analysis. Explain the choices you made at each step and the reasons for choosing the models you have chosen. Present the necessary tables, graphs and formulas, and explain what they display. Add all the necessary references.