ECO374 Essay: Main Task

- You will be given a part of a time series data.
  - Time periods $1, 2, \cdots, T$.
  - It is real monthly data.

- You are asked to write a small essay in which you
  1. Identify the pattern of the data.
  2. Find the model that you believe capture the pattern best.
  3. Estimate the model.
  4. Make forecasting for 12 periods.

- Imagine that you work at a consulting firm or the research department at Bank of Canada...

- Deadline: end of August 23rd

- Submission through Quercus, link will disappear after the deadline.

- Data's identity will be revealed after everyone has submitted their essay.

Format Requirement

- You are required to submit three files: the essay (in PDF), and forecasts (in Excel), and your the code.

- You shall report your main results in your essay too (your estimates for the model, your 12 period forecasts...)

- The essay should in principle be no more than 10 pages
    - Including figures and tables.
    - Double space, 11pts font size.
    - Longer essay does not necessarily implies higher score

- All files must be submitted online through Quercus.

Format Requirement

- Record your 12 periods forecasts in the excel file, from cell A1 to A12 of the first sheet.

- These 12 numbers are important for the evaluation.

- A computer program will be used to extract numbers from these cells to calculate your essay score

- Name your files as "FirstName_LastName_STUDENTID", e.g. "Yuanyuan_Wan_1234567".

Grading

1. Basics: 10 points.
   - the essay shall be complete in content: contains your model, estimation and forecasting.

   - the essay shall be complete in structure: introduction, main part, and conclusion

   - Anyone who makes reasonable effort is expected to receive most of (or all of) the 10 points

2. Skills and Performance: 5 points.

Grading

2. Skills and Performance: 5 points

   - The essay shall be well structured and coherent.

   - Has strong and well supported arguments in model selection.

   - Whenever possible, carefully exams the assumptions required by the model.

   - Has clear explanation of the intermediate and final statistical results.

   - Report both interval and point forecasts.

   - You will lose skill points if you use wrong formula, or your final forecasts are inconsistent with the formula you use.

   - Your forecasting has a small forecasting error (measured by SSE) compared to the class average.

   - Other shinning points.

Grading

- Deadline: end of August 23rd
- If you submit before deadline:

$$\text{Your essay score} = \text{Basic} + \text{Skills}$$

- If you submit m days after the deadline:

$$\text{Your essay score} = (1 - 20\% \times m) \times (\text{Basic} + \text{Skills})$$

Some tips

- Avoid making claims without arguments or statistical evidences.
- You may want to include graphics to support or illustrate your points.
- You may also want to divide your essay into small sections: identification, estimation, forecasting...
- Numbers and explanations are both necessary.
- Methods: your choice. Could be any methods, as long as you provide a valid citation.
- Whenever you cite any results in literature, state the reference clearly:
  - Paper title, author name(s), journal name, issue number, Vol. number, year.
  - Only academic reference counts.

Academic Honesty

- This is **not** a team projects: work on your own.

- Suspected cases of plagiarism will be passed to university authority.
  - Outcome could be very serious.