

Collaborative Quantitative Literacy Projects

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Creating a Learning Community

- Democracy and Diplomacy Provost Series Grant Support
- EC 200 Intermediate Macroeconomics and MA 193 What the Numbers Say
- Three joint projects with different access points
- Common final presentations

EC 200 Intermediate Macroeconomics

- Main topics - understanding how a macroeconomy operates, what the goals for an economy are, how to achieve this
- Audience - mostly upper class students, mix of economics, business and math majors
- Challenges - variation in student understanding of basic economic concepts

MA 193 What the Numbers Say

- Main topics - large numbers, measurement, percentages and ratios, probability, descriptive statistics and elementary data analysis
- Audience - first year elementary education remedial students (part of a corequisite model)
- Challenges - student anxiety, lack of confidence, immaturity

Project 1: Gross Domestic Product

- What is Gross Domestic Product (GDP)? You will need to read at least two different sources. Explain why you consider your sources to be reliable. Then record your answers.
- From your research, does it appear that there are different ways to measure GDP? What are they?
- What are some online websites that have GDP data? Include at least three different ones, explaining how you found them.

Project 1: Domestic Gross Product Part 2

- Do all of your sources agree on what the US GDP is? Why do you think this is?
- Create an Google Sheets spreadsheet with the US GDP data for the past 30 years. You will have to choose which type of data you want in your spreadsheet. It is very important that you stay consistent and you label your data appropriately.

Project 1: Domestic Gross Product Part 3

- What trends in the data do you see for the past 30 years?
- Create some useful graphs to illustrate your findings. Also compute some statistical measures (e.g. mean, median, standard deviation, correlation coefficient).
- What do you think GDP tells you about a country's economy? Why do you think this is?
- Can the trend in the GDP data alert us to some economic developments? Why?

Project 2: Unemployment

- Define the unemployment rate, using at least two reliable sources. Explain how you know they are reliable.
- How does one calculate the unemployment rate? How does the government go about calculating the unemployment rate? State your supporting sources here carefully.
- Find at least two different reliable sources of data on the US unemployment rate. How do you know they are reliable? Explain. Do they agree? Why, or why not?

Project 2: Unemployment

- How are the unemployment and employment durations and rates connected?
- Record your US data for the past 10 years from one of the two sources in an Excel/Google Spreadsheet document. What trends do you see?
- Create graphs and charts to make this data easier to understand. (Here you will need to use a Scatter Plot, a line plot, averages, standard deviation, correlation coefficients.)

Project 2 Unemployment Part 2

- State the appropriate measures of center and spread. What do these measures tell you?
- Now repeat last three questions for a different country of your choice. How is the data similar to the US and different? Why do you think this is?
- What does the unemployment rate tell you about a country?

Project 3 Inflation

- Define inflation and deflation. State your sources carefully.
- What is a price index? What is a fixed weight price index? Again, state your sources and explain how you know they are reliable.
- How does one calculate the inflation rate? How does government go about calculating the rate?
- Find out some reliable statistics data on the US inflation rate for the past 30 years. Use Google Sheets to study it for averages, trends, and forecast what it would be in 2020.

Project 3 Inflation Part 2

- Choose a country and provide information about that country's inflation rate. Again, do the analysis in Google Sheets.
- Compare the US and your country's inflation rates. What are the similarities and the differences?
- Where did you find the statistical information about inflation rate? Why did you choose this source? Provide some data regarding the inflation rate.
- Does this data give you an understanding regarding the country's health?

Final Project MA 193

- Choose a country of your choice from the following list: Canada, Mexico, Brazil, Indonesia, Russia. Explain why this country is interesting for you.
- Research the educational system of your country. What levels are there (e.g. primary, secondary, post-secondary)? Which of these are free? Are there exams for post-secondary education? Are there tracks?
- How does this educational system roughly compare to the US system?

Final Project MA 193 Continued

- Find at least 2 scholarly sources (studies), and 3 other sources from the media/magazines/websites.
- Consider the impact of GDP, unemployment rate, and inflation on your country's educational system. Be as specific as you can. If you present an argument that, for instance, the country is producing too many scientists who are now unemployed, then you must provide justification for your argument.
- Create a Google Slides presentation of your findings to be shared with EC 200.

Final Project EC 200

- Of the three major economic goals(you should know these!), for a country of your choice, which of these goals would you consider to be most important at this time? Given the work you have completed on the earlier projects, this presentation should focus on your rationale for why you have chosen the goal you mention.
- You will need to provide evidence to support your rationale as well as data from recent years as supplementary information.
- Your presentation should be for a general audience

Protocol for Projects

- Students worked in groups of 2-4 students
- Students used Google sheets that they shared with the other class
- Students gave and received feedback on their first draft, then submitted a final revised draft to instructors
- Students submitted a log of meeting times and what was accomplished and were encouraged to report problems with groups by email

Challenges for students

- First-year students research abilities were stretched and expanded
- First-year students had difficulties providing detailed feedback
- Macroeconomics students had to provide intense feedback on economics topics
- Macroeconomics students had challenges working in groups
- Uneven feedback across groups from both courses

Survey for All Students

- Overall, how effectively did your team work together on projects?
Poorly Adequately Well Extremely Well
- What percentage of the team participated actively and was fully prepared most of the time?
- Give one specific example of something you learned from your other team members.

Survey for All Students

- Suggest at least one change the team could make to improve performance.
- Did you find yourself explaining your own course materials to classmates in the other class?
- Did you find yourself explaining your own course materials to classmates in your OWN class?

Results from Surveys Questions 1 and 2

Question 1

- FYS: 38% Extremely Well, 58% Well, 4% Adequately
- EC: 12% Extremely Well, 25% Well, 56% Adequately, 7% Poorly

Question 2

- FYS: 93% respondents reported 100%, 6% reported 90%, 1% --75%
- EC: percentages reported were between 10% to 100%, with the majority saving 75%

Results from Surveys Continued

- Themes in things learned: working together is beneficial, working as a team is challenging, specifics about GDP, Price index and unemployment rate
- 64% students reported more time would have improved performances
- All reported explaining material from own courses to classmates in the other course and a small percentage (about 5%) reported explaining material to classmates in own course

Lessons Learned

- Plan groups more deliberately
- Allow more time for completion of projects
- Make more groups and collaboration an integral part of EC 200
- Give more specific follow-up for first-year students

Thank you.

