Principles of Macroeconomics
Discussion Activity 3
May 6th, 7th, 8th, 9th

In the second half of the course, we are focusing on macroeconomic equilibrium. One of the more interesting aspects of this part of the course is getting a better understanding of where the economy is headed. Are we at the start of a recession? Or is this a bump in the road to economic prosperity? In this activity, you will navigate to the activity website, learn about leading economic indicators, create your own indicator, and compare the predictions from your indicator to the rest of the class and AI platforms.

Step 1: Navigate to the Activity Webpage at: https://matthewdlang18.github.io/macroeconomics-course-website/activities/activity3/index.html and learn about Leading Economic Indicators. Feel free to work in groups of 1 to 3.

Here you will see information on typical leading economic indicators. Read through each one and think critically about how the variable may predict future output (Y) and employment. There is a video you will watch on the role of a variable like New Building Permits has on future economic activity. What indicators you think will be the most accurate in forecasting future economic activity.

On the next page, historical information of the leading indicators is shown, along with recessions since 1977. You will notice that each indicator has a rule attached to it and the table associated with the indicator highlights how accurate that rule is. Get familiar with the indices before going on.

Step 2: Create your own leading indicator

Create your own leading indicator on the next page by assigning weights to the different leading indicators. Note that the indicators are transformed into Z-scores relative to their average values or benchmark values, depending on the variable.

The lead time analysis on the webpage will show you how your index and rule would have performed in predicting recessions since the 1970s. Refine your weights for each indicator until you are satisfied with your new personal Leading Indicator Index. **Answer question 1** before moving on to the next page.

Step 3: Use your indicator to predict what will happen in the next 6, 12, and 24 months.

With your new Leading Indicator Index, predict how you believe the US economy (GDP and unemployment) will respond over the next 2 years. Download your results and input them into the Google Sheet that your TA provides a QR code for. After everyone inputs their predictions to the Google Sheet, the TA will show the aggregated results of the class. Discuss the results with your peers and **answer question 2** below.

Step 4: Compare your results to AI

On the next tab, you will see a place to download the Z-score spreadsheet and a prompt for AI. Read the prompt, navigate to an AI platform (ChatGPT, Claude, Gemini, Mistral, Perplexity, Grok, etc.), download the data, upload the data to the AI, paste in the prompt and **answer question 3**. Your TA will provide a second Google Sheet where you will input the weights the AI used and show the aggregated values. Examine the results and **answer question 4.**

Name:

1. What weights did you assign to each indicator in your personal Leading Indicator Index, and what specific rule did you create to signal a recession? Explain your reasoning for these choices.

2. According to your Leading Indicator Index, what specific GDP growth rate and unemployment rate do you predict for the US economy in the next 6, 12, and 24 months? How confident are you in your forecast? Do your predictions align with the class as a whole? Why or why not?

3. After asking for AI to create an indicator, compare it to your own. Does the AI appear to understand how to examine the data in a meaningful way, or does it appear to be throwing out random weights? Did your interaction with the AI make you reconsider your own indicator? (Bonus activity: ask different AI platforms to create an indicator and see how they differ.)

4. After reviewing the aggregated class predictions are you surprised with the class results or do they align closely with your own personal prediction? How do the AI results compare to the class results? Does any AI platform seem drastically different than others? Why might this be the case?