Week 7 Recitation

Practice Problems

This week we are going to explore the components of Aggregate Demand, aiming to understand how they contribute to GDP in the short-run—which is the focus of the Keynesian Perspective. We'll start with some theoretical definitions, then we'll move to the analysis of some real-world data for the United States.

1. How do we define Aggregate Demand (AD) and what are its components? What's the relationship between AD, Real GDP, and Potential GDP?

2. What are recessionary gaps and why does the Keynesian perspective postulate that economies tend to stay in a recessionary gap for a long period of time (explain the coordination argument and the concept of menu costs in your answer)? What's the key policy suggestion to reduce that gap?

3. Describe what is meant by the Keynesian expenditure multiplier. To calculate the multiplier, we need the marginal propensity to consume (MPC) of our economy, how do we define MPC? Finally, assume MPC is 0.7, what is the expenditure multiplier and how much will GDP rise from an initial demand shock of $10 million?

4. Now let's take a look at some recessionary gaps throughout the United States recent history, and which AD component influenced the Real GDP changes the most. We'll be using data from FRED – Federal Reserve Economic Data. To download it, follow the steps below:

Step 1: Go to the FRED website (https://fred.stlouisfed.org/) and type "Contributions to percentage change in real gross domestic product: Personal consumption expenditures" in the search box. Click at that series, and you'll see a graph of that variable across time.

Step 2: At the right corner of the graph, click on "Edit Graph" and, under the tab "Add Line", look for the following variables (click "Add data series" after selecting them):

- "Contributions to percentage change in real gross domestic product: Gross private domestic investment"
- "Contributions to percentage change in real gross domestic product: Government consumption expenditures and gross investment"
- "Contributions to percentage change in real gross domestic product: Net exports of goods and services"

Step 3: Now that we have all the components of our Real GDP, let's add the data for the total Real GDP variation. Click on "Edit Graph" again and, under the tab "Add Line", look for the "Real Gross Domestic Product" variable. Make sure that all the GDP components are in Percentage Points at Annual Rate Units, and the Real GDP is in Compounded Annual Rate of Change Units; all variables must be in Quarterly Frequency (check all that information under the "Edit Lines" tab).

Step 4: Once you have all five variables in the graph, click on "Download" at the top of the graph, and open the document at Excel or Google Sheets.

Step 5: Rename the consumption variable column as "C", private investment as "I", government consumption and investment as "G", net exports as "X-M", and the Real GDP as "GDP".

In a new column, sum the four components of GDP. Remember our definition of AD in Question 1. Can we observe that relationship in the data? (Tip: remember that the AD expression can also be written in terms of percent variation).

5. Let's see how those variables behaved during the 2008 crisis. Describe the contributions to US GDP growth in the recession (2008 Q1 to 2009 Q2) and in the recovery phase (2009 Q3 to 2010 Q4). What might explain the differences seen in the role of consumption and investment during the recession and recovery phases of the business cycle? From the contribution to GDP growth of government consumption, what can you infer about the US government's policy during the crisis?

6. Now, let's perform the same analysis for the COVID crisis. Describe the contributions to US GDP growth in the recession (2020 Q1 to 2020 Q2) and in the recovery phase (2020 Q3 to 2021 Q4). What might explain the differences seen in the role of consumption and investment during the recession and recovery phases of the business cycle? From the contribution to GDP growth of government consumption, what can you infer about the US government's policy during the crisis?