EXERCISE 3

To examine the macroeconomic performance of your country, there are two policy measures we want to examine, one that demonstrates its fiscal policy and one that demonstrates its monetary policy. We then want to relate those policy choices to international and domestic constraints and pressures.

1. Fiscal policy

Express the government budget deficit as a share of GDP. (In the IMF data note that the government finance code ends in 80. Nominal GDP is 99B. These appear toward the very end of the data set.)

Save these two series as an Excel spreadsheet, and in it create a new line showing the ratio of the deficit to GDP. Be careful to note whether your two series are measured in the same units. In the case of Mexico, the deficit is reported in millions of pesos, and GDP is reported in billions of pesos. Therefore, we need to multiply GDP by 1,000. But, because we want to express the ratio as a percentage, we need to multiply the numerator by 100. Consequently, the formula shown is “=(H2/H3)/10.”
If you have chosen a member of the European Union, you will find that the IMF already reports this ratio for you.

Save this information as an Excel spreadsheet.

Governments often choose a more expansionary fiscal policy (a larger deficit as a share of GDP) when they are in an economic recession and want to stimulate aggregate demand. To demonstrate a country's position in the business cycle, retrieve the data series for GDP in prices given for a base year, such as 1995.
Save these data as an Excel spreadsheet, plot real GDP, and then click on “Chart” and choose “Add a trendline.”

On the “Type” tab choose “Exponential” because we want to show the trend rate of growth in the economy. Then on the “Options” tab check that you want to display the equation and the R-squared values on the chart.
The coefficient on the exponential term in the equation, $0.0308x$, indicates that the annual growth rate is 3.08 percent. Note that the 1995 financial crisis resulted in a major recession in Mexico, as real GDP is well below the trend line that year.

Finally, plot the budget deficit as a share of GDP on the same chart, allowing for a secondary axis to label this fiscal policy series.
2. Monetary Policy

The Central Bank can change the monetary base to achieve a target rate of growth of the money supply or to achieve a target interest rate. Note that it will have these choices to conduct an independent monetary policy when it has a flexible exchange rate and need not defend a particular value of its currency internationally. If the exchange rate is fixed then the country's balance of payments position will be an important determinant of changes in its money supply and interest rates. In that case, the changes you observe may not reflect an independent policy choice.

We are particularly interested in how the real interest rate has changed. In exercise 2 you calculated the real interest rate and assessed whether the years in which it was negative were years in which the financial account of its balance of payments worsened. Some of you found that even though the real interest rate rose, the financial account worsened, presumably because a higher real return was available elsewhere or because investors felt the country became more risky and demanded a higher premium to offset that risk.

Here we are interested in whether monetary policy was used in a counter-cyclical way to promote economic growth. Did the monetary authorities allow the real interest rate to fall when the economy was in a recession, and increase the real interest rate when the economy was booming? To show those effects, combined your earlier calculation of the real interest rate with your projection above of real output compared to trend output. After you have created your chart, remember to create a secondary axis to show the real interest rate, by right clicking on that data series, choosing the “Format Data Series” tab, clicking on the “Axis” tab, and then choosing “Plot Series on Secondary Axis.” Also, calculate the average value of the real interest rate over time, so that you can characterize policy as imposing an above-average or below-average real interest rate.

![Mexican Monetary Policy Graph](image-url)
3. Interpretation

a) When the IMF makes loans to member countries, the recipients often agree to reduce the government budget deficit as a share of GDP. Current letters of intent signed with the IMF generally refer to the primary budget surplus (which represents government revenues minus expenditures before considering interest payments); in the debt crises of the 1980s, however, goals often were stated in terms of the ratio you calculated above (which includes interest payments). As part of the 1992 Maastricht Treaty agreement to establish the European Monetary Union, European countries agreed to maintain that ratio at less than 3 percent, although several large countries exceeded that standard in 2002 and 2003. How would you characterize your country's performance relative to such a standard? Does a smaller deficit coincide with a smaller rate of inflation, under the implicit assumption that expansionary fiscal policy will result in expansionary monetary policy?

Did your country use fiscal policy in a counter-cyclical way, allowing a larger deficit as a share of GDP in years when GDP was depressed? Interpret the chart you created on page 4 by indicating the number of years in which fiscal policy was counter cyclical. If your country had an outstanding loan from the IMF (see the Use of Fund Credit line on the balance of payments to indicate whether the country is either receiving or repaying a loan), does that seem to have resulted in a more restrictive fiscal policy?

b) Explain whether the real interest rate in your country ever becomes negative. Are years of negative real interest rates also years of below-average economic growth? Did the country have higher real interest rates when the economy was booming? Was the real interest rate above average in years when GDP was above its trend value? Or, did the country rely on a high real interest rate to defend the value of its currency, even though GDP was well below its trend value?