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. We are particularly interested in whether the country tried to use its macro policy to achieve domestic goals and whether it was successful in stabilizing production.

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)

You will eventually save these series as an Excel spreadsheet, and then will 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.”
For a member of the European Union, you will find that the IMF already reports this ratio for you.

In your Excel spreadsheet you should see a series like line 2.

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 2000, which controls for the effect of inflation on the nominal GDP figure you used above.
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.
From Mexico’s experience you can see that the government ran a surplus during the years of above average output in 1991 and 1992, but with a Presidential election in 1994, the budget slipped into deficit. With the financial crisis of 1995, and a major economic slowdown, tax collections fell and the deficit became larger. Aside from the political push to spend more in an election year, fiscal policy seems to be largely countercyclical: the government takes action to slow down the economy when its performance is above average and to stimulate output when it is below average. During the later years of the decade, however, the economy’s output was above average, but the government did not try to dampen that performance.

2. Monetary Policy

The Central Bank may attempt to alter the real interest rate in order to control inflation. Keeping inflation under control is desirable to encourage residents to hold the country’s currency rather than convert into a more stable currency. Also, keeping inflation close to the rate in other major trading partners may allow the country’s exporters to remain competitive without having the currency depreciate, as purchasing power parity otherwise would require. To carry out a policy of inflation targeting, the Central Bank will raise the real interest rate when inflation is greater than its target. That will reduce the demand for output in the economy, as consumption and investment are discouraged by the higher real interest rate. If the cause of the inflation was too much demand, then this policy eventually will bring the actual inflation rate down. When inflation is below its target, the central bank can let the real interest rate decline, which will result in greater output as consumption and investment increase. The inflation rate will rise toward the target.

To see whether the Central Bank follows such a rule over this period, we will use some of the information you collected in exercise #2. You already calculated the real interest rate, and that is one variable we want to plot. The second variable we want to create is the difference between the country’s inflation rate and the inflation rate in the United States. (If you made your purchasing power parity comparison with respect to inflation in France or Germany, use that rate in place of the U.S. inflation rate.) Thus, we are implying that the U.S. inflation rate is the Central Bank’s target, and we want to create a series that shows how much the country’s inflation rate deviates from that target. Recall that you will want to show the real interest rate as $100 \times \frac{I3-I17}{100+I17}$, where I3 is the value of the country’s interest rate and I17 is the value of its inflation rate.

Create a chart to plot these latter two series, the inflation gap and the real interest rate.
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 the 2002-2005 period. In 2005 the members of the EMU rewrote the pact in a way that is likely to allow many more exceptions. How would you characterize your country's performance relative to such a standard?

Does a smaller deficit coincide with a smaller rate of inflation? That might be especially true if expansionary fiscal policy is financed by printing more money, in other words in combination with 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? You might interpret the chart you created on page 4 by indicating the proportion 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? That would occur if the IMF conditionality called for a lower budget deficit and that provision was enforced.

b) Does the Central Bank appear to adjust the real interest rate to control inflation? In that case, the two series you plotted in Chart 2 should move together.

Some complications may enter into your interpretation, however. If the riskiness of investing in this country rises, for example, the real interest will have to rise to compensate investors for larger potential losses, even if the inflation rate is not further above its target value. Implicitly, the Central Bank acts as if it has a target for its exchange rate, too, and it may be willing to raise the real interest rate to achieve that target, in spite of the lower output that will result. Or, the Central Bank may have an output target and be willing to accept higher inflation in order to achieve it. Worldwide, however, there has been a decline in inflation, which suggests that Central Banks have paid particular attention to fighting inflation. Does your country fall in that category?