Week 8 Recitation

This week, we are going to talk about the relationship between inflation and unemployment, so we are going to study the Phillip's curve. We will start understanding the theory behind the Phillips Curve, and then move on to some real world data for the United States, exploring both the short-term and the long-term trends.

1) Draw the typical AD/AS model, identifying the Keynesian zone, the intermediate zone and the neoclassical zone. Your graph should clearly show: the label of the X-axis, the label of the Y-axis, the LRAS curve, the SRAS, and three demand curves—one for the Keyensian zone (AD_K), one for the intermediate zone (AD_I), and one for the neoclassical zone (AD_N). How can we see the relationship between inflation and unemployment in this model?

This is a good opportunity to review the content of Week 6. The important part of this exercise is for students to understand that the unemployment level is given by the distance between the equilibrium (meaning that point where AD and SRAS intersect) and the LRAS curve. Inflation, on the other hand, refers to the changes on the price level, so the Y-axis does not measure inflation *per ser*.

It is important to notice that the graph doesn't state that, for Keynesian economists, unemployment is always high, while for neoclassical economists, unemployment is always low. The name of the zones refer to the steepness of the SRAS and the tradeoff that it implies: since the SRAS is relatively flat at the Keynesian zone, the economy can get a lot closer to full-employment (meaning a lot closer to the LRAS curve) without just a mild increase on the price level (meaning without a lot of inflation); since the SRAS is relatively steep at the neoclassical zone, no changes on employment can be achieved (it is already at the full-employment point), and all policies only generate fluctuations on the price level (inflation). It is useful to remember that the full-employment level at the LRAS only measures cyclical unemployment, so an economy with a 10% unemployment rate may be considered at full-employment in this model, since all that can be structural or natural unemployment (i. e. a result of political, cultural and overall structural institutions of a country/place).

2) From the AD/AS model above, derive the Keynesian and the neoclassical Phillips Curve. Your graph should clearly show: the label of the X-axis, the label of the Y-axis, the neoclassical Phillips Curve and the Keynesian Phillips Curve.

The main point here is that the Keynesian Phillips Curve is downward sloped: there's a trade-off between unemployment and inflation, so a country can decide their policy having those choices in mind. For the neoclassical perspective, as showed in the AD/AS model, no changes in unemployment can be achieved through changes on AD, because the economy runs close to the potential GDP (LRAS) in the long-run. Therefore, the inflation level can be higher or lower, but the cyclical unemployment will tend to zero.

3) What policy prescriptions are implied by the Neoclassical perspective? What about the Keynesian perspective? Can an economist believe in both perspectives?

   The neoclassical perspective is focused on shifting LRAS. This means policies are geared towards lowering the natural rate of unemployment (promoting changes in labor hiring process) and/or raising potential GDP (boost productivity). Shifts in AD create inflationary pressures on the economy. The Keynesian perspective is focused on raising aggregate demand through expansionary fiscal policies so the economy can reach potential output. Shifts in AD will not cause too much inflation because the economy is well below potential output. Most economists believe in a combination of the Neoclassical and Keynesian perspectives. The Keynesian model works well in describing the short-run because of economic instability. The neoclassical perspective makes more sense in the long-run because the economy will tend towards, and is constrained, by potential output.

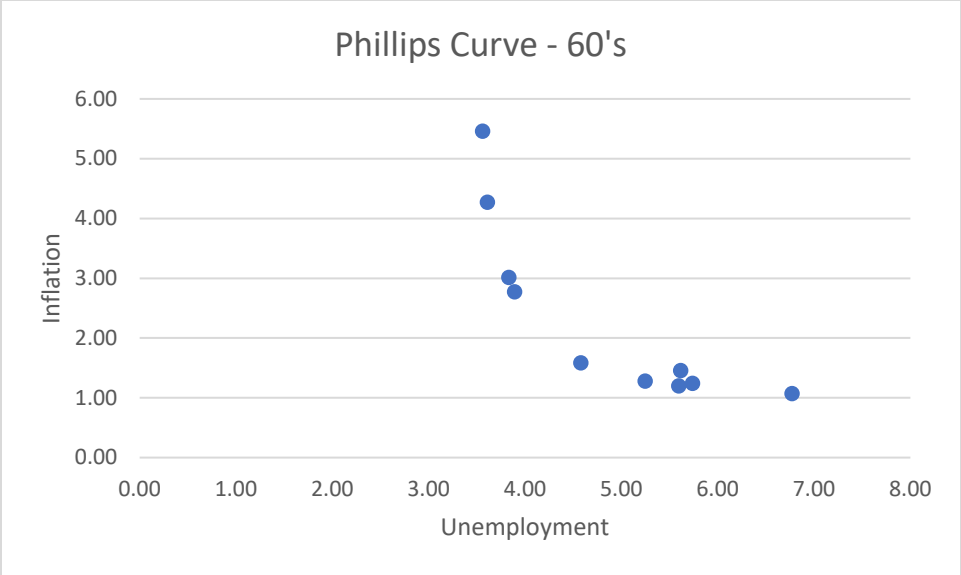
4) The speed of adjustment is how long the economy takes to adjusts it prices and return to potential GDP after a demand shock. What are the two theories that describe how long this process will take?

   1) **Rational expectation – people are accurate at predicting the future, so the process will happen quickly or automatically.**
   2) **Adaptive expectation – people are not perfect with their predictions and must learn from past behaviors. The process is will not be automatic and might take some time.**

5) Now let's see how well this model can describe the US economy. Go to the Federal Reserve Economic Data (FRED) and follow the following steps:

Step 1: Type "inflation consumer prices" in the search box and select the first series available ("Inflation, consumer prices for the Unites States"). Select this series—a graph will open.
Step 2: At the upper right corner of the graph, click on "Edit Graph" and, under the tab "Add Line", look for "unemployment rate". Choose the "Unemployment Rate" variable and check that the Frequency is Annual for both of your series (under the "Edit Lines" tab).
Step 3: Download the Excel file of this series and open it either on Excel or Google Sheets. Rename the columns as "Inflation" and "Unemployment".
Step 4: Build a dispersion graph (scatter plot) for the United States economy from 1960 to 1969, using the unemployment rate and the inflation rate on the appropriate axis so that your graph is a Phillips Curve.

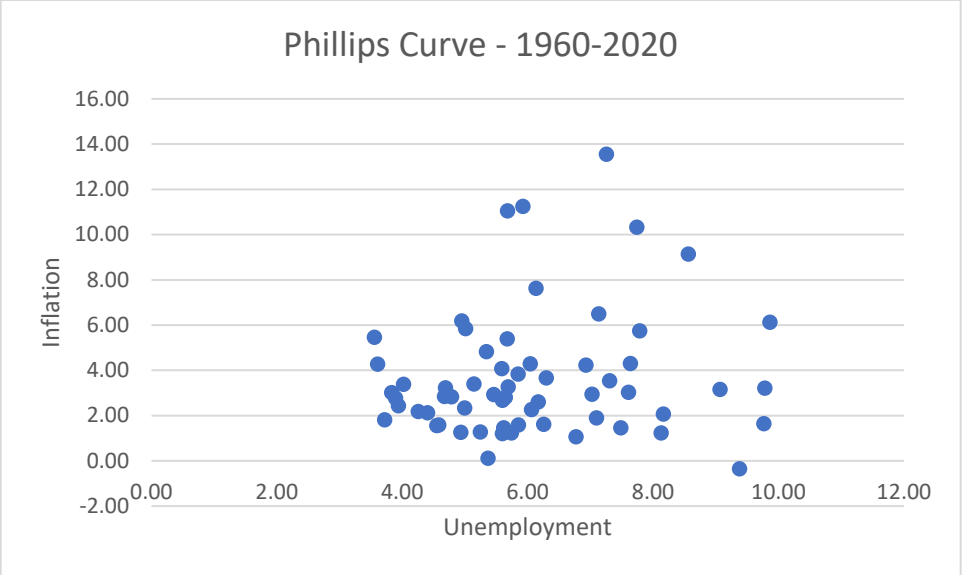
How does this Phillips Curve look like? Is it closer to the Keynesian curve, the neoclassical curve or none of them?



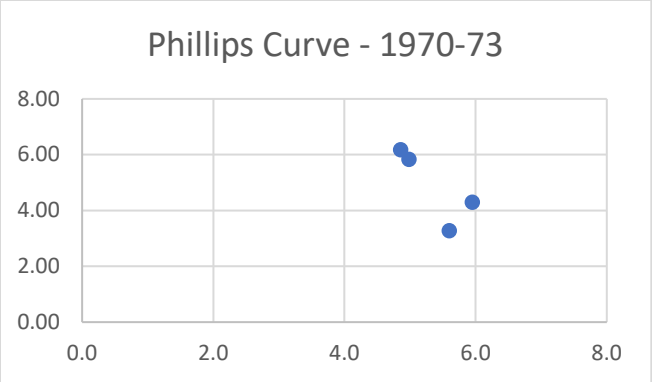
To show the students how to use the spreadsheet, use Google Sheets instead of Excel, because that's something that everyone can access. It's important to choose a dispersion graph (scatter plot), not a line one, and make sure that Unemployment is in the X-axis and the inflation rate on the Y-axis. This chart shows the negative relationship between unemployment and inflation, so it's the Keynesian perspective. The curve is not that clear for any of the other isolated decades, but this helps us show the students why the Phillips curve had such an influence in economics and policy in general.

6) Now, using the same data, plot the Phillips curve for the whole series (1960-2020). What does the graph look like? Is it closer to the Keynesian curve, the neoclassical curve or none of them?

7) Now try plotting the data by the following years: 1970-73, 1974-83, 1984-94, and 1995-2020. What do these plots tell us about the Phillips curve?



Over this longer period of time, the Phillips Curve can shift around, so the trade-off relationship is not as straight-forward anymore. For the case of the US during this period, the tradeoff between unemployment and inflation appeared to break down during the 1970s as the Phillips Curve shifted out to the right. If you have time, you can ask students to see the curve for different decades, and they will find that, for some decades—like the 00's—you can see the Keynesian Phillips curve relationship still present (mostly driven by the 2008 crisis in this case), but for others—like the 70's—there's no apparent relationship between those two variables. However, if you look at more specific periods of time, you can see the short run Phillips curve reemerge.


Phillips Curve - 1970-73
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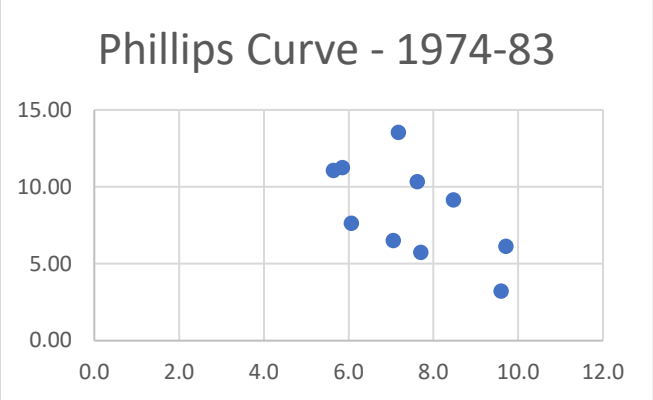
Phillips Curve - 1974-83
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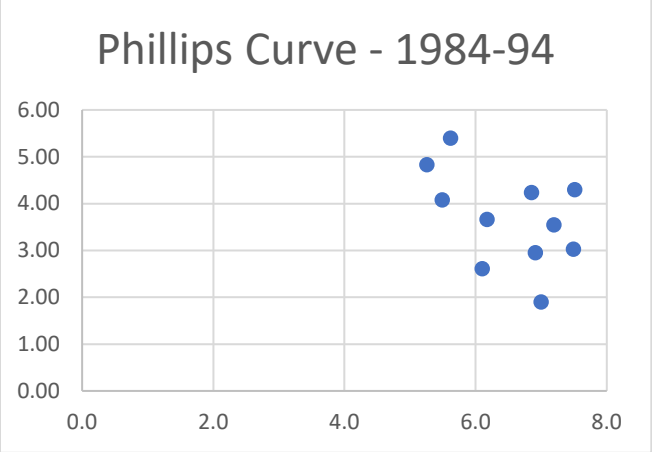
Phillips Curve - 1984-94
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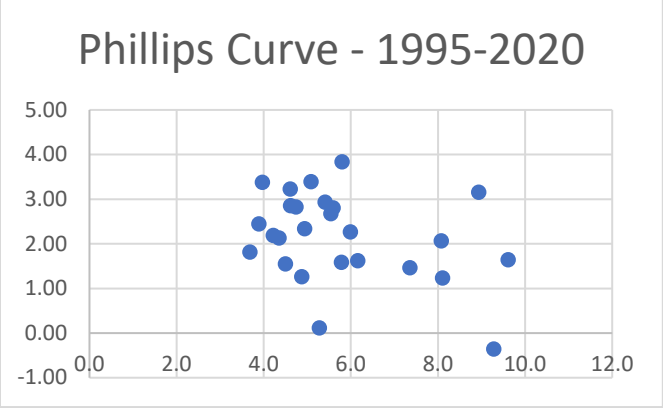
Phillips Curve - 1995-2020
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