JHU ECON 602
MACROECONOMIC THEORY AND POLICY
(Fall 2022)
Group Assignment 1

Group 1 Session 52
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1. In our opinion, President Biden's claims are partially correct.

   First, Okun's law clearly shows the relationship between the unemployment rate and the country's production is negative, which means a lower unemployment rate, and a higher change in GDP growth. Biden contributed to the reduction in unemployment by creating more jobs, so GDP would also be affected by unemployment and would go up during 2022. However, we do need to be aware of the difference between real GDP and nominal GDP. Low unemployment also indicates that the inflation rate would be high, and further affect the real GDP. It is possible that after creating new jobs, nominal GDP will exhibit higher growth, while real GDP, which is adjusted by deflator, would be lower than expected. And it might against what Biden said in the statement.

   Second, the U.S. GDP growth rate for 2021 was 5.67%, a 9.08% increase from 2020. U.S. GDP growth rate for 2020 was -3.40%. Due to the low base caused by the growth of -3.4% in 2020, it is normal for the economy to have a higher growth rate under the slowdown of Covid-19 and the strong rebound in demand.

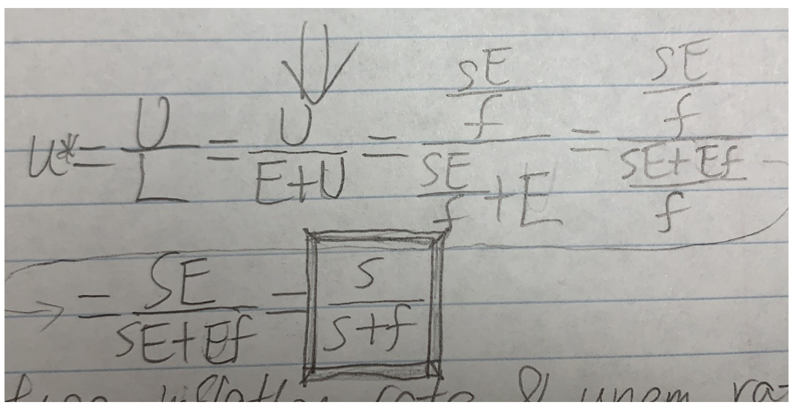
   Third, President Biden's government stimulates the economy with various policy combinations. In simple words, it kept the interest rates low, reduced general taxes, and increased government spending on infrastructure. It is estimated that the injection of funds from the $1.9 trillion fiscal package alone would be enough to boost real U.S. GDP by 4% and 2% in 2021 and 2022, respectively. The fiscal stimulus and quantitative easing drove U.S. inflation up to 7% in 2021. Such aggressively loose monetary policy and fiscal policy help the U.S. economy recover from the pandemic drawback. It is reasonably expected that the U.S. economy will possess a high growth rate since the economy is injected with high aggregate demand and active investment behavior.

   Last but not the least, the claim Biden made on the comparison between the U.S. and China's growth rates is not completely fair. China's stimulation package has been issued in 2020 and 2021, whereas the U.S' are issued more recently. Therefore, the U.S. economy's higher growth rate is a result of not only the aggressive stimulation policy but also the recovering position within the business cycle. Furthermore, with the expected tighter and tighter monetary policy coming ahead, the effect on the economic stimulation package remains uncertain.

2.

$$\mathbf{sE = fU \rightarrow U = sE/f}$$

$$\mathbf{u^* = U/L = U/(E+U) = (sE/f)/[(sE/f)+E] = (sE/f)/[(sE+Ef)/f] = sE/(sE+EF) = s/(s+f)}$$



3.

Based on the equation given in question 2, the natural unemployment rate is solely determined by the separation rate and job finding rate. By taking the limit and derivative of the two variables, we find: (1) a higher separation rate and a lower job finding rate will theoretically raise the natural unemployment rate; (2) when the separation rate goes 0, the natural unemployment rate will be 0, and when the job finding rate go 0, the unemployment rate will be 1. Therefore, from a theoretical standpoint, the high unemployment rate in Europe might be caused by an increase in the separation rate and a decrease in the job finding rate.

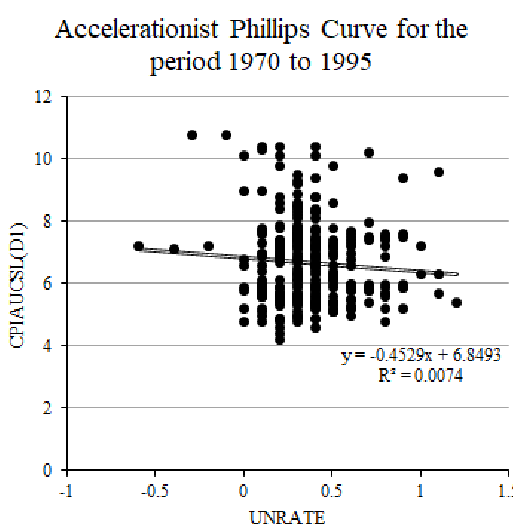
$$\frac{\partial U}{\partial s} = \frac{s+f-s}{(s+f)^2} = \frac{f}{(s+f)^2} > 0 \qquad \lim_{s \to 1} \frac{s}{s+f} = \frac{1}{1+f}$$

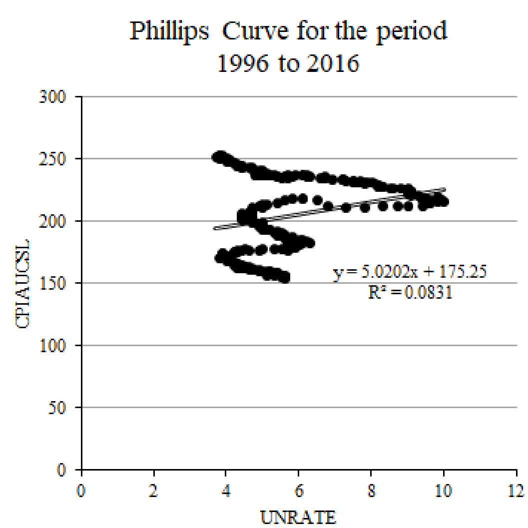
$$\frac{\partial U}{\partial f} = \frac{-s}{(s+f)^2} < 0 \qquad \lim_{f \to 1} \frac{s}{s+f} = \frac{s}{s+1}$$

$$\lim_{f \to 0} = 1 ; \lim_{s \to 0} \frac{s}{s+f} = 0$$

There are two potential empirical explanations for the high unemployment in EU countries. First, the hyperinflation caused during the 1973 OPEC shock seriously hit the economy badly and caused job opportunities to vanish, consequently raising the separation rate and lowering the job finding rate. The unemployment of EU countries has risen significantly and continuously since then. Second, EU countries generally offered better social welfare to the unemployed for political reasons. Such action provided motivation for people not to find a job and lowered the job-finding rate, thus causing the inertia for unemployment to be high, which is similar to what had happened in the U.S. labor market after COVID occurred.

4. (10 points): Download data from FRED (https://fred.stlouisfed.org/) on the U.S. inflation rate (CPIAUCSL) and the unemployment rate (UNRATE). Estimate the accelerationist Phillips Curve for the period 1970 to 1995 and the Phillips Curve from 1996 to 2018. Please copy the two charts into the Word documents (and attach a separate EXCEL sheet to show your work).





5.

Recent personal consumption expenditure remains constant, while the unemployment rate has remained low and steady. Inflation decreases insignificantly from 8.5% to 8.3%. GDP growth rate rises again to -0.6%. Government still faces severe situation of budget deficit. All of those reflects the gradual recovery in employment, the increase of overall output due to increasing productivity and increasing expense of government.

Russia's war against Ukraine is causing tremendous human and economic hardship. The war and related events are creating additional upward pressure on inflation and are weighing on global economic activity. The Committee is highly attentive to inflation risks.

The Committee seeks to achieve lower inflation over the longer run. In support of these goals, the Committee decided to raise the interest rate and anticipates that it would tighten the money supply in the market in order to temper demand and reduce inflationary pressures. In addition, the Committee will continue to narrow the budget gap. The yield on the 10-year U.S. Treasury note was unchanged and still remained at a 10-year high of around 3.45%. The Committee is strongly committed to returning inflation to a normal level (2%) and narrowing the budget gap.

In assessing the appropriate stance of the overall economic environment, the Committee will continue to monitor the fluctuation of the inflation rate for the economic outlook. The Committee would be prepared to adjust the monetary policy to decelerate the rise of the inflation rate and reduce it to an optimal level. The Committee's assessments will take into account a wide range of information, including readings on labor market conditions, and financial and international developments.