Problem set 3

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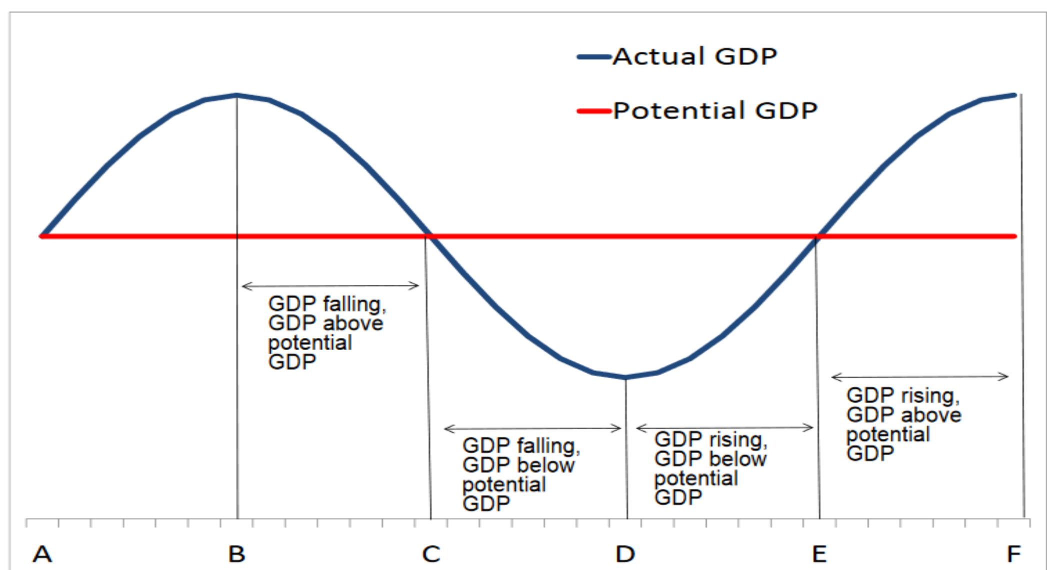
Question 1:

a)

Figure 5. Stylised Business Cycle with Zero Potential Growth



Source: Citi Research

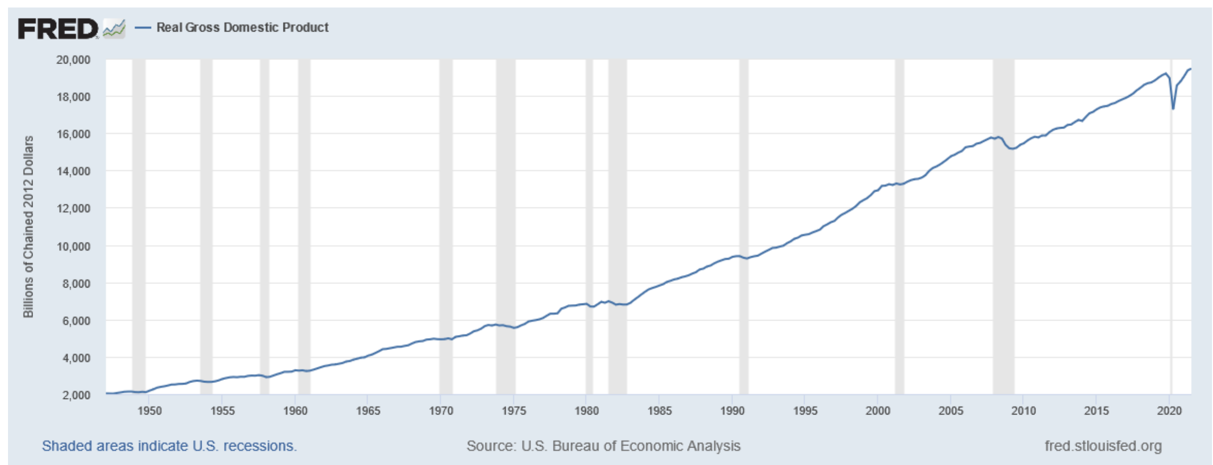
According to Figure 5 in the mentioned paper, we are currently in the period between point B and point C.

Considering first definition (negative growth), this is recession but according to the second definition, this is not a recession because actual GDP (though the growth is negative) is not below the potential growth.

b)

Yes. In a recession, the policymakers may adopt measures to stimulate economic growth (e.g. lowering tax rates, subsidies, government investments, lowering the policy rate), which would be inappropriate (e.g. potentially destabilizing) if the economy were not in a recession.

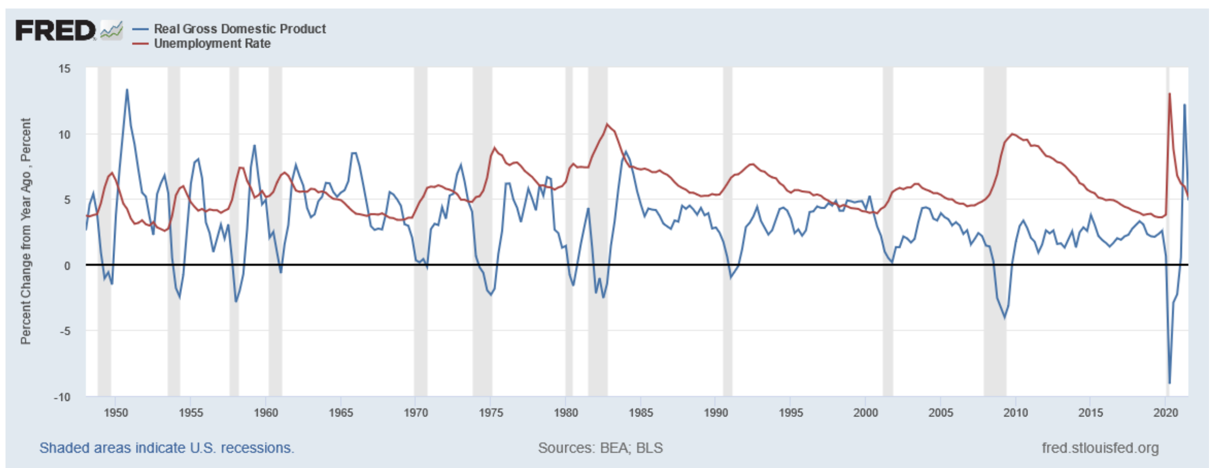
Question 2:



a) Real US GDP in 2018 is 19,469 Billion dollars

b) 12 recessions in years: 1949, 1954, 1958, 1961, 1970, 1974, 1980, 1982, 1991, 2001, 2008, 2020.

c) The biggest one is 2008 recession, which lasted for 8-9 quarters.



d) The unemployment increased during the last two recessions (2001, 2008)

e)

Recessions	2008 recession		2020 recession	
Quarters	Quarter 1, 2008	Quarter 3, 2009	Quarter 1, 2020	Quarter 2, 2020
Unemployment rate	5,3	9,6	3,8	13,1

f) According to this graph, whenever we have a recession the unemployment rate increases, and this not just specified to the last two recessions but to all of them from 1929.

Question 3:

a) A reduction in autonomous consumption.
No. We need something to compensate the effect of a decrease in investment. Reducing the autonomous consumption will decrease aggregate demand even more.

b) An increase in target wealth.
No. Decreasing the target wealth will encourage the households to save more and consume less so it will decrease the aggregate demand even further.

c) An increase in actual wealth.
Yes. Although it does not directly imply that the households will consume more, It may persuade them that there is less need to save.

d) A tightening of credit conditions.
Definitely No. It will make borrowing more difficult and it will discourage households to consume.

Question 4:

a) The initial effect is:

$$\Delta AD = -c_1 T = -0.75 * 2{,}000{,}000{,}000 = -1{,}500{,}000{,}000$$

b)

$$Y = c_0 + c_1(Y - T) + I(r) + G + X - mY \rightarrow$$

$$Y = \frac{c_0 - c_1 T + I(r) + G + X}{1 - c_1 + m}$$

so the overall effect of the tax policy would be:

$$\Delta Y = \frac{-c_1 T}{1 - c_1 + m}$$

where c_1 is the marginal propensity to consume and m is the marginal propensity to import.

c) Now consider the case where the government decreases his spending rather than the tax level. What would be the initial and overall effect?

- Initial effect would be equal to

$$\Delta AD = \Delta G = -2{,}000{,}000{,}000$$

- And the overall effect would be:

$$\Delta Y = \frac{-G}{1 - c_1 + m}$$

Assuming $0 < c_1 < 1$, we realize that decreasing the government spending would be more destructive for the GDP and the aggregate demand.

d) By increasing the supply of one specific currency in the exchange market, It's value will be decreased (lower exchange rate comparing to other currencies). As the result, the products of the country will become less expensive for the foreign countries, and this will increase the net exports.

e) Decrease in the interest rate will decrease the savings, since it will be less profitable for the firms to participate in the financial market. As the result, their investments will be increased.

Question 5:

a) **Yes**. It can increase consumption because the higher collateral would enable higher borrowing amounts.

b) **Yes**. Increase the house price would increase their net wealth (equity) and their borrowing limit, so they have more incentives to also increase their consumption.

c) **NO**. Though they are not credit constrained, it will increase their equity level.

d) **No**. because of the higher down-payments any positive and negative effects on consumption would be stronger in Germany and France.