1. Using the money creation model, explain whether the money multiplier should rise or fall to increase the level of economic activity in the real sector.

2. State a monetary policy measure that the central bank could use to lower the money multiplier and explain how that measure decreases the multiplier.

3. Indicate a fiscal policy measure that the government could use to raise the money multiplier and explain how that measure increases the multiplier.

4. Consider the cartoon on the right, dated the 18th of April, 2020 ('time to open up' refers to the relaxing of the lockdown measures adopted against the COVID-19 pandemic).

(i) What does it mean depicting the economy as a reluctant to move tortoise?

(ii) What does the cartoon suggest about the capacity of the fiscal policy (and, in general, of the public sector) to boost the economy?

(iii) Choose two variables studied in the course and explain under which conditions the values of those variables could make an economy enter into a recession (or, alternatively, what occurs to those variables when an economy is in a recession).

5. The COVID-19 pandemic is a global shock: all countries are affected. Use the fallacy of composition to address the following question: does the global nature of the coronavirus crisis make it easier or more difficult for governments to counteract the adverse economic consequences of the health crisis?

(Hint 1: do economic policy measures that are successful for a country be necessarily successful for all the countries?)

(Hint 2: to overcome the economic recession caused by the pandemic, do countries need to cooperate more or it is fine that each country chooses economic policies independently of the rest of countries?)

6. Imagine that an instructor evaluates students online, without any supervision: students handwrite their answers to the exam's questions at home and, within the time assigned to complete the exam, they send photographs of their answers to the instructor. Suppose the instructor presumes that students have cheated (have shared their analyses) if the answers sent are very similar. Explain what would follow from Goodhart's law if students knew this presumption. In particular, would it be enough to prevent cheating the instructor's presumption that students cheat?

7. Suppose that the aim of the central bank is to lower the interest rate by using some monetary policy tool, but ignores by how much it has to be decreased. What tool is more convenient to achieve this goal, the reserves requirement or the open market operations? Explain why.

8. Explain why central banks all over the world have adopted programmes consisting of massive purchases of financial assets to address both the immediate and the foreseeable economic consequences of the COVID-19 pandemic. Represent this policy measure in the liquidity market model and identify its effect on the interest rate.

9. Use the liquidity market model to explain what would happen to the interest rate and the amount of liquidity if the central bank did nothing in response to a shock like the COVID-19 pandemic in which most people is legally compelled to stay at home.
(Hint: does the pandemic stimulate or reduce the supply of liquidity? Does it encourage or cut the demand for liquidity?)

10. Consider the money creation model based on the expansion of bank deposits. Imagine that it is discovered that the coronavirus causing the COVID-19 disease remains active on coins and banknotes for several days. Suppose that, in response to that discovery, cash payments are no longer accepted in most shops. Explain how this lack of acceptance of cash would affect the money creation process and the value of the multiplier.

11. Let two countries differ essentially only in their debt-to-GDP ratios. Explain in which country it is more likely for the interest rate to be higher.

12. Let two countries differ essentially only in their GDP growth rates. Explain in which country the domestic currency has a stronger tendency to appreciate.

13. Let two countries differ essentially only in their inflation rates. Explain in which country competitiveness has a stronger tendency to improve.

14. Let two countries differ only in their inflation rate. Explain in which country the interest rate is likely to be higher.

15. What measure is more effective to increase GDP (when all the collateral effects are taken into account), an expansionary monetary policy or an expansionary fiscal policy? Motivate your answer.

16. Assume that net private savings (the difference S – I between savings and investment) remain constant. Suppose that the government budget deficit increases: the rise in government spending is larger than the rise in government revenue.

(i) Explain what happens to net exports (the difference EX – IM between exports and imports)

(ii) Is it possible that both EX and IM rise? Justify your answer.

(ii) Is it possible that both EX and IM fall? Justify your answer.

17. The dollar depreciates against the euro. At the same time, the Japanese yen appreciates against the euro. What can be inferred from just this information about the dollar/yen exchange rate? (Does the dollar appreciate against the yen? The yen appreciate against the dollar? Anything could happen?) Motivate your answer.

18. Imagine that a large proportion of firms in country A are owned by citizens of country B and that all those owners decide to close down and liquidate their firms and factories in A, and rellocate the firms and factories in their home country, B. Using the AS-AD model, analyze graphically the effects of the liquidation of firms in A and their reopening in B in the inflation rate and GDP in both A and B. Explain which functions change and why.

19. A few days ago, shortly after Chancellor Merkel and President Macron announced a post-COVID reconstruction plan for the European Union mobilizing some €500 billion, the euro appreciated against the dollar. Suggest an explanation and use a graphical representation of the currency market model to visualize the explanation.

20. The table below shows the values of certain macroeconomic variables for a certain economy in three periods: 1, 2 and 3. The currency of this economy is the euro.

period	1	2	3
unemployment rate	6	8	7
inflation rate	5	2	7
GDP	1000	750	900
exchange rate ($/€)	3	5	3
nominal interest rate	0	2	1

For each of the following claims identify a pair of periods (t, t') such that $t' > t$ and such that the claim is true between t and t' (that is, the pairs can be $(1, 2)$, or $(2, 3)$, or $(1, 3)$).

(i) Okun's law is not violated

(ii) The Fisher effect does not hold

(iii) The Phillips curve is contradicted

(iv) The figures are consistent with an expansionary open market operation

(v) The figures are consistent with a contractionary fiscal policy

(vi) The figures are inconsistent with an contractionary open market operation

(vii) The euro depreciates against the dollar

(viii) The dollar does not depreciate against the euro

21. You own €100. You can make a loan in the eurozone and obtain a 5% profit in one year. Alternatively, you could buy dollars with your euros (the current exchange rate is 1 $/€), make a loan in the US and obtain a 10% profit (in dollars) in one year. Though you do not know the exchange rate one year ahead, you expect the euro appreciate with respect to the dollar by 10% during this year.

(i) Calculate, given your expectation, which loan is more profitable in euros.

(ii) Optional: find by how much the euro should be expected to appreciate to make both options equally profitable.

22. The central bank conducts an expansionary open market policy.

(i) Explain how that policy would affect the interest rate.

(ii) Explain which component, or components, of aggregate demand will be affected by the interest rate change.

(iii) Explain the impact of the variation in aggregate demand on the inflation rate.

(iv) Explain how the modification of the interest rate is likely to alter the exchange rate.

(v) Explain how net exports are expected to react to the variation in the inflation rate.

(vi) Explain how net exports are expected to react to the change in the inflation rate.

(vii) What is the ultimate effect of the expansionary open market policy on GDP?

(viii) What is the ultimate effect of the expansionary open market policy on the unemployment rate?

23. Explain briefly, using the concepts and models presented in the course, how the confinement measures to prevent the spread of the COVID-19 pandemic have affected:

(i) aggregate demand;

(v) GDP;

(ii) unemployment;

(vi) the inflation rate;

(iii) the interest rate;

(vii) the government budget deficit;

(iv) the price of financial assets;

(viii) the GDP growth rate.

24. The cartoon on the right suggests that money is a successful tool to neutralize the COVID-19 negative effects on the economy.

(i) Explain why and how. Specifically, which economic actor throws the massive amounts of money? And how does this money reach 'the economy'?

(ii) The people waving the large scissors seem to propose another alternative to offset the COVID-19 consequences. What is that alternative? How would that alternative operate? Which economic actor implements the alternative?

https://stweetly.com/Cartoon4sale/

25. The cartoon on the right puts the blame on COVID-19 for causing the recession of the US economy. Explain, with the help of a graphical representation of the AS-AD model, why and how the pandemic may create a recession.

https://www.koreatimes.co.kr/www/opinion/2020/03/197_286945.html

26. The cartoon on the left pictures the COVID-19 as an obstacle to the world economy. Explain why (you may focus on a few significant variables and justify briefly why the impact of COVID-19 on that variable is most likely negative).

https://global.chinadaily.com.cn/a/202004/21/WS5e9e55e8a3105d50a3d17a54.html
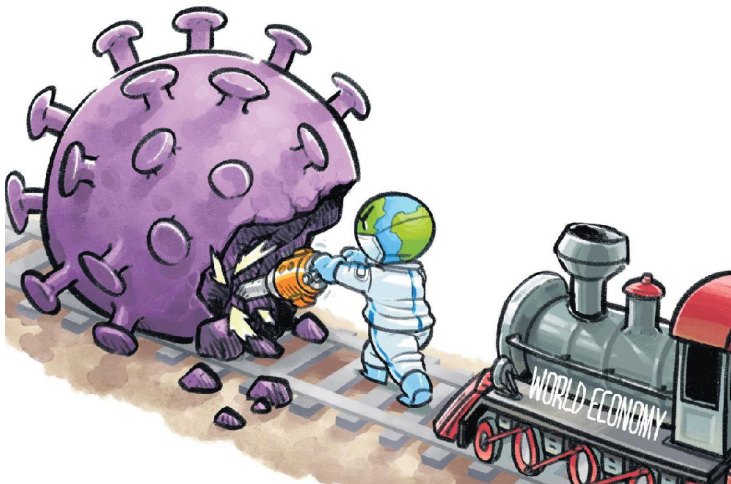
27. Let two countries differ essentially only in the fraction of GDP that tourism represents. Explain in which country the negative impact of COVID-19, and the measures taken to combat it, on GDP is more likely to be higher.

28. Let two countries differ essentially only in their volume of exports. Explain the currency of which country is more likely to depreciate as a result of COVID-19 and the measures followed to fight it.

29. Let two countries differ essentially only in that <u>one executes a more expansionary fiscal policy than the other</u>.

(i) Taking into account only the effect of the fiscal policy on the inflation rate, explain which country would be more <u>competitive</u> (in which countries exports are more encouraged).

(ii) If the fiscal policy is debt-financed, answer (i) again if it is also taken into account how the fiscal policy affects the <u>interest rate</u>.

30. Consider the savings identity states as

$$SPN = DP + XN,$$

where $SPN = S - I$, $DP = G + TR - T$ and $XN = EX - IM$.

(i) Explain <u>what justifies that governments have responded to the COVID-19 pandemic by increasing DP</u>.

(ii) Together with the rise in DP, assume that EX does not change and that IM decreases. What happens to SPN? Interpret the result.

(iii) Presuming that S is used purchasing financial assets (supply of liquidity) and that I consists of purchasing capital goods (aggregate demand), what effect would cause the change in SPN found in (ii) on the interest rate, the inflation rate and GDP?

31. Use graphical representations of the <u>AS-AD model</u> to answer the following questions.

(i) What is the impact on the inflation rate and GDP of the weeks of confinament imposed <u>to contain the spread of COVID-19</u>? Explain what functions in the models are affected and why.

(ii) State a monetary policy measure that could neutralize the effect on GDP found in (i). Explain the functions affected and why.

(iii) Explain if the measure you have proposed in (ii) could neutralize, at the same time, the change in both the inflation rate and GDP that you identified in (i).

(iv) Suggest a monetary policy measure that could offset the change in the inflation rate identified in (i). Explain what functions affected and why.

(ii) State a fiscal policy measure that could neutralize the effect on GDP found in (i). Explain the functions affected and why.

(vi) Discuss if a fiscal and monetary policy mix could cancel out all the consequences discovered in (i). If so, suggest one such policy mix. If not, add another measure that, together with the fiscal or the policy measure, could neutralize all the changes in (i).

32. Use graphical representations of the <u>currency market model</u> to answer the following questions.

(i) Imagine that the European investors believe that the economic impact of COVID-19 on the US economy will be much worse than anticipated. Find the effect on the exchange rate $/€ of the <u>sale by European investors of all the assets they bought in the US, followed by the sale of the dollars so collected, to obtain euros</u>, in the currency market. Explain what functions in the model are affected and why.

(ii) Explain what changes would produce in your analysis in (i) that American investors adopted the same belief and preferred to invest in European assets and corporations.

(iii) Suppose that the European investors choose to invest in China a fraction of the euros obtained from liquidating their US investments. How would that decision affect the exchange rate ¥/€ between the Chinese renminbi and the euro. Explain what functions would be affected and why.

33. Use graphical representations of the <u>currency market model</u> to answer the following questions.

(i) Imagine that, as a policy response to the COVID crisis, <u>all countries (except the eurozone members) ban completely the entry (and the exit) of tourists from the country</u>. In the eurozone, instead, tourists are free to enter and leave any country, without being subject to any restriction or control measure. In comparison with the pre-COVID situation, explain if these different policies would cause an appreciation, or a depreciation, of the euro against the rest of currencies.

(ii) Explain how your conclusion in (i) would be modified (if at all) in case that the eurozone members only grant freedom of circulation to foreigners, so that eurozone citizens are not allowed to go to third countries for tourism purposes.
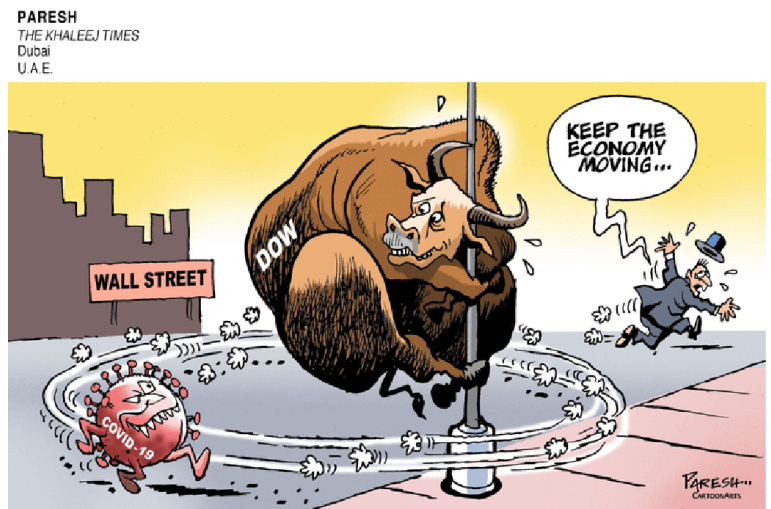
34. Use graphical representations of the <u>liquidity market model</u> to answer the following questions.

(i) As a result of the economic impact of the COVID-19, <u>the governmemt issues more debt</u> (sells T-bills in unprecedented amounts). What is the foreseeable effect of that decision on the interest rate? Explain what functions are affected and why.

(ii) Explain how your conclusion in (i) would be modified if the buyers of the public debt believed that the government would default (that is, the government will fail to repay the debt in its entirety).

(iii) Suggest a measure by the central bank that could neutralize the effect on the interest rate found in (i). Explain which function is affected and how.

35. Explain the macroeconomic meaning of the cartoon below (Dow = US stock market index Dow Jones).

https://www.pinterest.fr/pin/491877590555969658/