

DNI Number _____ 1st Surname _____ Name _____

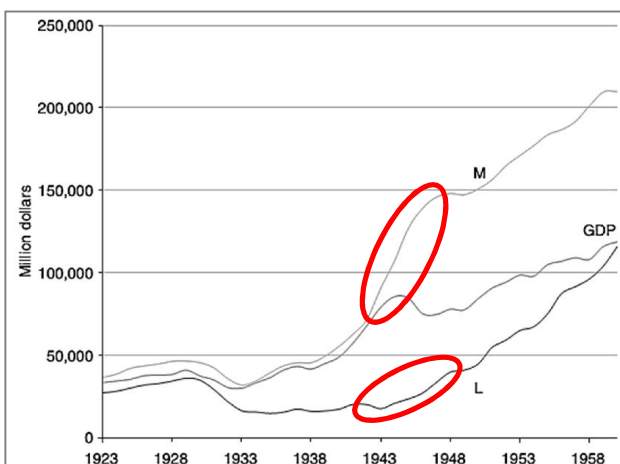
1. [2%] Indicate something that the concepts of deflation and appreciation have in common and something that differentiates them.

2. [4%] Spain seems to have surpassed Italy in GDP per capita for the first time. (i) Does this fact imply that the Spanish economy is bigger than the Italian economy? (ii) Explain the meaning of a GDP per capita going above another GDP per capita. (iii) Which changes in the variables that define GDP per capita could explain an increase in GDP per capita?

<http://www.expansion.com/economia/2016/03/25/56e16ed922601d9c238b457e.html>

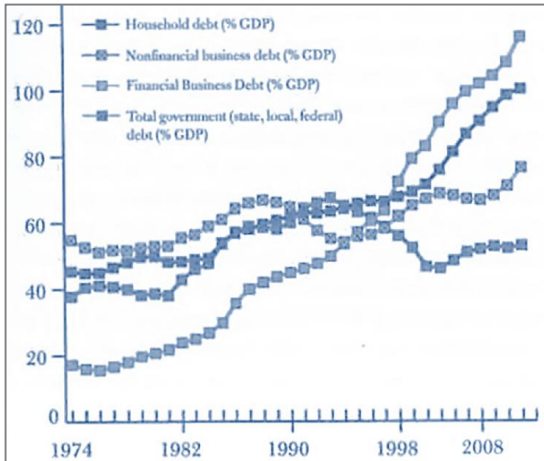
3. [3%] Define briefly the meaning of the fallacy of composition and suggest an example macroeconomically relevant.

4. [9%] The expression “Quantitative easing” (QE) refers to a policy by means of which a central bank buys assets (for instance, government bonds) mainly from non-bank financial companies (like pension funds and insurance companies). QE aims to increase private spending directly by circumventing the banking sector. (i) Is a QE programme essentially like an expansionary or a contractionary OMO? (ii) Analyze the effect of a QE programme on the interest rate using the liquidity market model.



5. [7%] The chart on the left plots the monetary aggregate **M2** (curve M) and the amount of bank loans (curve L) in the US (John H. Wood, 2014, *Central Banking in a Democracy: The Federal Reserve and its Alternatives*, p. 168). Assuming **M2** equivalent to **M1**, if you had to explain the dynamics of the sections within the ellipses in terms of the money multiplier, would you conclude that the money multiplier increased or decreased during the corresponding period? Justify the answer.

6. [5%] Explain two ways of slowing down the money multiplier process.



7. [5%] The chart on the left plots debt magnitudes in relation to GDP in the US (Fred Magdoff and Michael D Yates, 2009, *The ABCs of the Economic Crisis*, p. 77). For instance, in 2007, all US debt (by household, business and government) amounted to 350% of GDP. Considering the aggregate of the four curves, can it be concluded that the financial sector has grown to become bigger than the real sector or vice versa? Justify the answer.

8. [10%] Using the currency market model explain whether having a large and growing trade deficit tends to depreciate the domestic currency. Consider, if necessary, an economy like that of Venezuela, which exports essentially petroleum and refined products, and imports almost everything else (and that includes most food). https://en.wikipedia.org/wiki/Economy_of_Venezuela

9. [4%] Write down: (i) two eurozone members whose names in English contain the letter “o”; (ii) one eurozone member that does not belong to the European Union; and (iii) one member of the European Union sharing borders with no eurozone member.

(i) (ii) (iii)

10. [5%] Given the exchange rates 2 \$/¥ and 4 €/¥, suggest: (i) a value of the exchange rate €/¥ that prevents triangular arbitrage; and (ii) another one making that arbitrage possible. Justify the answers. In case (ii) identify the trading sequence between currencies generating a loss in the trade.

11. Assume that the relationship between the economy’s interest rate i and the price of T-bills holds. Answer one of the following options.

- [7%] **Option 1.** The face value of T-bills is 1,000. The discount factor is equal to the interest rate. Find the price of T-bills.
- [8%] **Option 2.** Find the interest rate if the price of T-bills doubles the face value of T-bills.
- [10%] **Option 3.** The interest rate is 20%. Find by how much the interest rate should change to double the price of T-bills.

12. [9%] The monetary base is 200. The liquidity ratio is equal to the reserve ratio. Deposits are 400. If possible, find **M1** and the money multiplier; if not possible, explain why.

13. [6%] The real interest rate is zero. Real GDP has decreased by 5%. Nominal GDP has decreased by 3%. If possible, find the approximate value of the nominal interest rate; if not possible, explain why.

14. [4%] List two functions and two monetary policy instruments of a central bank.

15. [3%] Explain the meaning of the sentence “the exact real interest rate between periods t and $t + 1$ is 10%”.

16. [3%] Explain the meaning of the sentence “according to the CPI, the purchasing power in period t of €1,000 is 5 baskets of goods”.

17. [5%] If you lend €1,000 in period t you get €2,000 in period $t + 1$. The CPI in t is 100. The CPI in $t + 1$ is 200. Find the real interest rate between t and $t + 1$.

18. [4%] Real GDP has decreased by 5% while the CPI inflation rate has increased by 3%. Knowing just these values, by how much has nominal GDP varied approximately?

19. [9%] Suggest events causing the shifts of the functions indicated below and specify the effect on the equilibrium interest rate (if the effect is not ambiguous).

| Events | supply of liquidity | demand for liquidity | equilibrium interest rate |
|--------|---------------------|----------------------|---------------------------|
| | → | = | |
| | → | ← | |
| | ← | ← | |

20. [9%] Suggest events causing the shifts of the functions indicated below and specify the effect on the equilibrium interest rate (if the effect is not ambiguous).

| Events | supply of euros | demand for euros | equilibrium exchange rate |
|--------|-----------------|------------------|---------------------------|
| | = | ← | |
| | ← | → | |
| | → | → | |

21. [5%] Transfers equal taxes. Government purchases equal savings. Imports equal investment. Taxes equal investment. If possible, find, using the savings macroeconomic identity, the value of exports.

22. [6%] Poland economy data are shown below (<http://www.focus-economics.com/countries/poland>).

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|--|-------|------|------|------|------|
| CPI inflation rate (annual variation, %) | 4.6 | 2.4 | 0.7 | -1.0 | -0.5 |
| Policy interest rate (%) | 4.5 | 4.25 | 2.5 | 2 | 1.5 |
| Stock market (annual variation, %) | -20.8 | 26.2 | 8.1 | 0.3 | -9.6 |
| Money (annual variation, %) | 11.5 | 4.2 | 6.7 | 8.8 | 9.7 |

(i) Is the evolution of the first two magnitudes consistent with the Fisher effect? Justify the answer.

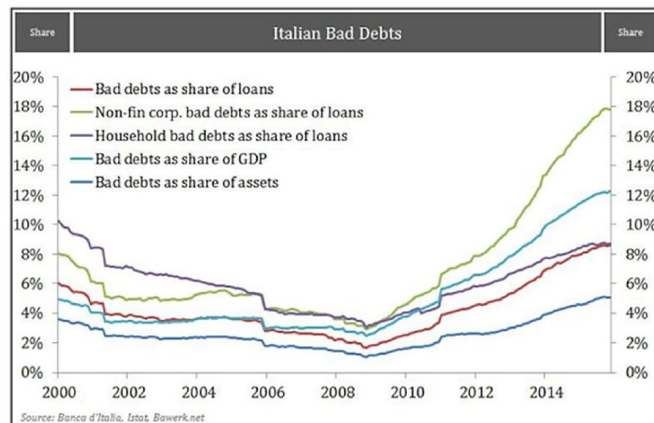
(ii) Is the evolution of the second and third magnitudes consistent with the relationship between interest rates and prices of financial assets? Justify the answer.

(iii) During which years is the evolution of the last magnitude consistent with an expansionary monetary policy and during which years consistent with a contractionary monetary policy? Justify the answer.

23. [15%] **The Italian banking crisis.** [Italy is the eighth-largest economy in the world] The chart below shows what appears to be the breaking down of the Italian banking system: the proportion of nonperforming loans with respect to the assets of the Italian banking system has been growing in the last years and is approaching 20% (during the worst of the most recent US banking crisis, that proportion did not exceed 3.5%). Some southern Italian banks reach nearly 40%.

<http://www.mauldineconomics.com/editorial/these-are-the-5-biggest-risks-that-could-break-up-the-european-union/VLW>

(i) Using the liquidity market model for the Italian economy, analyze the impact on the equilibrium interest rate of an increase in the proportion of nonperforming loans in the banking system. (ii) Suggest a monetary policy measure by the European Central Bank that could neutralize that impact and represent that measure in the model.



24. [9%] Banca Popolare and BPM have merged to create the third biggest bank in Italy. The bank merger is intended to create a “larger, stronger, and more transparent” bank. Using the liquidity market model analyze, and explain, the impact on the equilibrium interest rate of a bank merger with the above characteristics.

<http://www.lavanguardia.com/economia/20160324/40654769221/italia-banca-popolare-bpm-fusion.html>

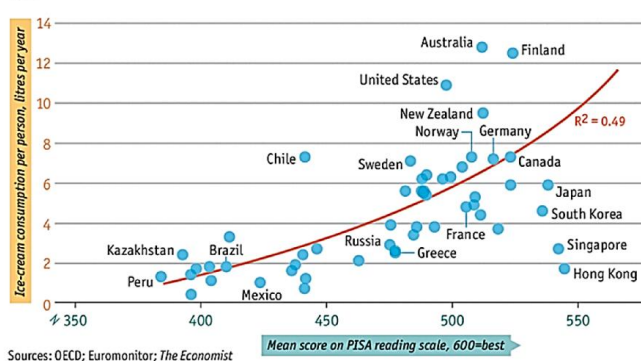


25. [3%] Which economic phenomenon is represented by the chart on the left? Justify the answer <http://www.economist.com/news/americas/21695934-venezuela-today-looks-zimbabwe-15-years-ago-spot-difference?zid=305&ah=417bd5664dc76da5d98af4f7a640fd8a>

26. **Optional** [15%] The Venezuelan government has recently reduced the four-tiered exchange rate system to two rates: a “protected” 10 bolívar rate (per dollar), reserved for vital imports, and a nominally free-floating rate. On the black market the dollar fetches 1,150 bolivares. Keeping the lower rate has been considered a source of macroeconomic distortions, as it tempts firms to acquire cheap dollars and make high returns on the black market instead of investing in production and/or essential imports. Compare this situation with a currency crisis situation (develop your explanation in a currency market model). [The new system is intended to promote national production and stimulate non-oil exports, as exporters and investors are now permitted to exchange their dollar earnings for bolivares at the floating rate. Yet the black market bolívar rate is many times greater than the highest official rate.]

<http://www.economist.com/news/americas/21695934-venezuela-today-looks-zimbabwe-15-years-ago-spot-difference?zid=305&ah=417bd5664dc76da5d98af4f7a640fd8a> | <https://venezuelanalysis.com/news/11901>

Ice-cream consumption and PISA educational performance scores
2012

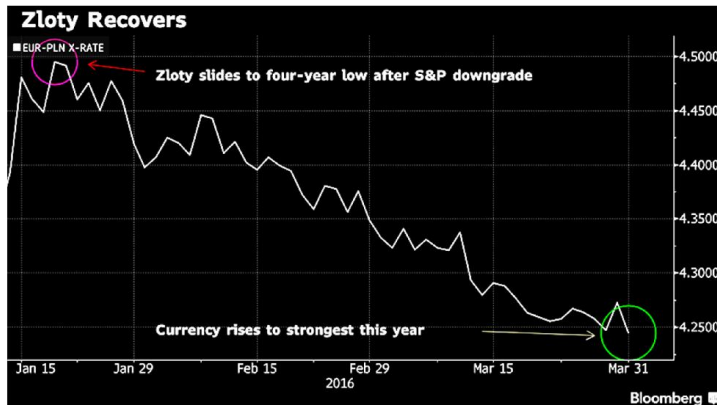


27. [5%] The chart on the left suggests a strong relationship between ice cream consumption and reading ability. On its basis, it is claimed that “Though it may seem like an odd suggestion on a brisk early-April morning, year-round subsidised ice-cream for children could improve educational attainment. And ice-cream vans should park closer to libraries to help boost reading skills too”. Which fallacy, or fallacies, presented in class is illustrated by these claims?

<http://www.economist.com/blogs/graphicdetail/2016/04/daily-chart>

28. [16%] Use the models developed in class to justify the following: “Poland’s zloty appreciated the most in 14 months in March, supported by monetary stimulus from the European Central Bank and pledges from the nation’s policy makers to keep borrowing costs on hold.”

<http://www.bloomberg.com/news/articles/2016-03-31/zloty-has-best-month-in-year-as-ecb-shifts-focus-from-s-p-cut>



Złoty sinks against the euro (EUR-PLN)



29. [12%] The chart on the left shows the evolution of the exchange rate between the Polish currency and the euro after the ratings agency S&P downgraded Poland’s foreign credit rating. The reasons given by the agency were that “The change in the rating outlook to negative reflects our view that there is potential for further erosion of the independence, credibility, and effectiveness of key institutions, especially the National Bank of Poland”. Explain by means of the currency market model the connection between the downgrading of Poland’s credit and the depreciation of the Polish currency (which felt nearly a 4% during January 2016).

<http://www.ft.com/fastft/2016/01/15/poland-downgraded-by-sp-zloty-tumbles/>