

Supervision 1

National Income Accounting and Classical Loanable Funds Model

Short questions (250 words max)

1. Identify shortcomings of real GDP per capita as a measure of a country's well-being.
2. Consider the following production functions, where Y denotes output, K capital, L labor and \bar{B} a constant positive parameter, and explain briefly whether each exhibits decreasing, constant or increasing returns to scale and features a positive, diminishing marginal product with respect to capital and labor:
 - (a) $Y = \bar{B}K + L$
 - (b) $Y = K + \bar{B}K^{1/3}L^{2/3}$
 - (c) $Y = K^{1/3}L^{2/3} - \bar{B}$
 - (d) $Y = [\alpha K^{1/2} + (1 - \alpha)L^{1/2}]^2$, with $0 < \alpha < 1$.
3. In a closed economy, an increase in lump sum taxes will stimulate investment in the long run as it raises private saving. True or false? Explain.

Problems

4. Find the UK GDP “Quarterly National Accounts” for the second quarter of 2018 on the Office for National Statistics (ONS) web site, www.ons.gov.uk. [Hint: Download ONS statistical bulletins as pdf to access an appendix with convenient tables]
 - (a) Which expenditure component of GDP is the biggest, and which the most volatile?
 - (b) What is the relationship (at current prices) between gross national income (GNI), gross domestic product (GDP) and gross value added (GVA)?
 - (c) Compute the (chained) GDP deflator in 2017 with reference year 2016 (up to three decimals) and compare it to the number published by the ONS.
 - (d) Using the GDP deflators published by the ONS, compute the percentage change in the (seasonally adjusted, chained) GDP deflator in the first quarter of 2018 at an annualized rate (up to three decimals).
 - (e) Find the latest ONS release of UK “Consumer Price Inflation”. Using the monthly CPI numbers published by the ONS, compute the percentage change in the CPI in the first quarter of 2018 at an annualized rate (up to three decimals).
 - (f) Explain why the inflation figures for the GDP deflator and the CPI could be different.

5. Suppose the government would like to increase government spending to improve the National Health Service (NHS). However, it is concerned about increasing the government budget deficit, so it is considering two policy options:

A Increase government purchases (G) by $\Delta G > 0$.

B Increase both government purchases and taxes (T) by the same amount, so $\Delta G = \Delta T > 0$.

You are asked to provide an analysis of the long run effects of the policy options on saving and investment, using the classical loanable funds model and assuming the UK is a closed economy.

- (a) Show graphically the effect of policy option A. Give an intuitive explanation.
- (b) Show graphically the effect of policy option B. How do the results differ from policy option A?
- (c) To estimate the quantitative effect of the policy options on investment, would you need to know the interest sensitivity of investment, the marginal propensity to consume, or both?
- (d) Write a brief note (250 words max) to advise the government which policy option to choose, providing intuitive economic arguments.

Main reading

- Mankiw and Taylor (2014), *Macroeconomics - Second European Edition*, chapters 1-3.

Supplementary references

- Auerbach and Kotlikoff (1998), *Macroeconomics, an integrated approach*, chapter 10.
- Blanchard and Johnson (2012), *Macroeconomics*, chapter 2.
- Easterlin (2001), "Income and Happiness: Towards a Unified Theory", *Economic Journal* 111 (July), pp.465-484.
- Jones (2017), *Macroeconomics*, chapter 2.
- Office for National Statistics (2015), *A Short Guide to the UK National Accounts*, <https://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/national-accounts/articles/2011-present/a-short-guide-to-the-uk-national-accounts.pdf>
- Office for National Statistics (2017), *Consumer Price Indices: A Brief Guide*, <https://www.ons.gov.uk/economy/inflationandpriceindices/articles/consumerpriceindicesa2017>
- Symposium Report on Measuring the CPI, *Journal of Economic Perspectives*, Winter 1998.