Part I, Paper 2: Macroeconomic Principles I

Supervision 1: National Income Accounting and the Classical Model

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Short Questions

1. For each of the following markets, describe whether the market is better characterized as having sticky prices or as exhibiting market clearing behavior:

   (a) a grocery store

   (b) a stock market

   (c) market for laptops

   (d) job market for university academic employees

   What do you think causes the slow price adjustments in the sticky price markets you described above?

2. Why do some economists argue that the RPI is a better measure of inflation than CPI? (*Read the Case Study in Chapter 2.2 of Mankiw and Taylor*).

Long Questions

1. Returns to scale

   (a) Assume that $\bar{A}$ is a constant fixed positive number and consider the following production functions, where K is capital and L is labour:

      i. $Y = K^{1/2}L^{1/2}$

      ii. $Y = K^{1/2}L^{1/3}$

      iii. $Y = \bar{A}K + L$

      iv. $Y = K + K^{1/3}L^{2/3}$

      v. $Y = K + K^{1/3}L^{1/3}$

      vi. $Y = K^{1/3}L^{2/3} - A$

   Which of these functions exhibit constant, increasing or decreasing returns to scale? Justify your answer.

(b) Now suppose that Zeta Motors is considering two production options: It can produce 50 cars with 125 workers and 100 machines, or it can produce 70 cars with 187 workers and 150 machines. Would you describe Zeta Motors' production function as exhibiting decreasing, constant, or increasing returns to scale? Which of the functions of part (a) above do you think best describes the production function of Zeta Motors?

2. Suppose that an unusual storm causes severe flooding of Thames River, which damages a lot of the buildings in central London. The government and private sector respond swiftly with a major effort to reconstruct and/or repair damaged buildings, but also start implementing a plan for constructing new flood barriers all across key points in London. Discuss how this hypothetical episode would affect the economic performance of the UK, by considering the well-being of the people of the country, as well as the official measurement of GDP.

3. Find the following yearly data for the UK, from the webpage of the Office of National Statistics for the period 1997-2012:

   (a) Find the real and seasonally adjusted yearly output, at constant prices, calculated by *gross domestic product* and *gross value added*. How different/similar are the two series? Find the official statistical definition of the two series and explain where the differences between the two series come from (*Use this: http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/national-accounts/articles/2011-present/uk-national-accounts—a-short-guide–2014.pdf*)

   (b) Now use the series you downloaded for part (a) to generate corresponding output indeces for a base year of your choice. What do you observe?

   (c) Find the components of real demand (i.e. real GDP). Which component is the largest? Which one changed the most from1997 to 2012 as a fraction of GDP?

   (d) Find the real and nominal total GDPs and calculate the implied GDP deflator.