

Macroeconomics, Part IIA,
Dr. Toke Aidt

Supervision 2

Essays for supervision

Intertemporal Macroeconomics

Answer all three questions, but indicate which one you would like me to mark.

Question 1 Consider an economy in which the supply of output depends positively on the real interest rate and consumption and investment demand depend negatively on the real interest rate (as in Barro, chapter 5 and 9). Suppose the economy is initially in an equilibrium position.

Show graphically and explain intuitively the effect on output, consumption, employment, investment and the real interest rate of the following:

- A permanent productivity increase.
- A temporary productivity increase.
- An anticipated (permanent) productivity increase

Compare your results to a situation in which the capital stock is fixed (i.e., there is no impact on investments) and discuss how well the predictions match the empirical evidence.

[Hint: attempt to separate out wealth effects, (temporal substitution effects) and intertemporal substitution effects].

Question 2 (max 1000 words) "Aggregate data do not lend support to neoclassical business cycle models." Discuss this statement paying particular attention to intertemporal decisions about consumption, labour/leisure and investments [Tripos, 2004]

Main Readings

- Barro chapter 5 and 9.
- Mankiw (2002), Macroeconomics, 5th edition, ch. 17 and 19. [overview]
- Auerback and Kotlikoff, 1998, Macroeconomics, an integrated approach, chapter 4 and chapter 9. [Alternative to Barro]
- Mankiw, 1989, Real business cycles: a new Keynesian perspective, Journal of Economic Perspectives 3, 79-90.

- Plosser, 1989, Understanding real business cycles, *Journal of Economic Perspectives* 3, 51-77.

Further Readings

- Holland & Scott (1998) 'The determinants of UK business cycles' *Economic Journal*
- Stadler G.W. (1994) 'Real business cycles.' *Journal of Economic Literature* 32;4, 1750-1783.
- *Journal of Economic Perspectives* (Spring 1999) "Symposium on Business Cycles".
- Romer, D. (2001), *Advanced Macroeconomics*, 2nd edition. [chapters 4 for RBC models, 8 for investment]
- Abel, Bernanke and McNabb (1998), *Macroeconomics. European Edition.* ch. 4.2, 11.1.
- Hayashi, F. (1982) "Tobin's Marginal q and Average q: A Neoclassical Approach." *Econometrica* 50: 213-24.
- Prescott, E. (1986) "Theory Ahead of Business-Cycle Measurement." *Carnegie-Rochester Conference Series on Public Policy* 25 (Autumn): 11-44.
- Summers, L. (1986) "Some Sceptical Observations on Real Business Cycle Theory." *Federal Reserve Bank of Minneapolis Quarterly Review* 10 (Fall): 23-27.

Essay 2 (max 1000 words) Discuss how changes in equity prices affect intertemporal decisions governing consumption, labour supply and investment [Tripos, 2007, B4].

Main Readings

- Barro chapter 13 [on taxes and transfers] and chapter 20.
- Mankiw (2002), *Macroeconomics*, 5th edition, ch. 17 and 19. [overview]
- Auerback and Kotlikoff, 1998, *Macroeconomics, an integrated approach*, chapter 4 and chapter 9. [Alternative to Barro]

Further Readings

- Romer, Advanced macroeconomics, [advanced treatment of the consumption model].
- Ando and Modigliani, 1963, The “life cycle” hypothesis of saving: Aggregate implications and tests, American Economic Review 53(1). [original work on life cycle behavior].
- Friedman, 1957, A theory of the consumption function (Princeton, N.J., Princeton University Press). [original work on the permanent income hypothesis].
- Modigliani, 1975, The life cycle hypothesis of saving twenty years later, in: M Parkin, ed., Contemporary issues in Economics (Manchester University Press: Manchester).
- Keynes, J.M. 1936, The general theory of employment, interest and money. Chapter 8-10.

1 Extra questions (not for supervision)

Suppose there was a decrease in the wealth of households due to a drop in house prices or the value of shares held.

- Explain the effect on intertemporal decisions by households on consumption and labour supply.
- How would your answer be affected if the decrease in wealth were expected to take place in the near future?

Consider a closed economy with flexible prices and optimizing individuals in which

the government credibly announces in period 1 that it will permanently increase the level of government spending starting in period 2.

- Suppose that individuals live forever and that the increase in government spending is financed by an equal increase in lump-sum taxes. Explain the effect on consumption, investment, labour supply, output and the interest rate in period 2 when the policy is implemented.
- Explain whether the effects in period 2 depend on the planning horizon of individuals or the way the extra government spending is financed.

1. Consider the two period model of consumer behaviour. Using a diagram, describe the effect on consumption today and in the future of

- a windfall rise of income in period 1 (temporary income change)
- income rising by the same amount in both period 1 and 2 (change in permanent income)

(iii) income rising in period 2 (anticipated temporary increase).

(iv) Do the results in (i)-(iii) change if you consider a consumer that is liquidity constrained, i.e. cannot borrow against future income? Explain.

(iv) What is the effect of a change in interest rate? Decompose the overall effect into intertemporal income and substitution effect. Would you get different answers if the consumer was a borrower or lender? Explain.

2. What are the marginal propensities to consume out of (a) temporary and (b) permanent changes in income in the following models:

- Modigliani's Lifecycle Hypothesis (LCH),
- Friedman's Permanent Income Hypothesis (PIH),
- Keynesian Liquidity Constrained consumers (LCC).

What factors does your answer depend upon in each of the models? Explain why you get different answers for the LCH, PIH and LCC models.