

‘Introduction to Macroeconomics’ April 2011

Answers to the midterm-test problems and comments on marks

May 6, 2011

1. Answers to these questions are found in the course literature. In particular, note that GDP deflator and consumer index differ due to the different construction principle and due to representing different goods (all produced goods for the GDP deflator and consumer goods only for the CPI). Question (c) was the most difficult one, as it was not fully covered in the lecture. **Comments on marking:** Unrelated answers carry no points (for example, an analysis of the demand for bonds for (d)). Related answers carry some points, even if important ingredients are missing (for example, the formula for the money multiplier alone carries few points for (d), while a more detailed answer without that formula carries some more). Only the first three answers count: if you answer four questions, the last(!) answer is deleted even if it is the most satisfactory or complete one.
2. (a) Profits of the steel producer are €800, for the car producer €1000, and for the farmer €1500. Wages and intermediate consumption must be subtracted.
(b) Tax returns are €1200. The assumption is that exported goods are taxed just like domestically consumed goods.
(c) The ‘final goods approach’, the ‘primary income approach’, and the ‘value added approach’ all result in a GDP of €7700. For example, $C = 6000 + 550$ for cars and food, $X = 1650$ for food and $IM = 500$ yields $Y = C + X - IM = 6550 + 1650 - 500 = 7700$;
(d) The difference of GDP and GNI is the balance of primary incomes versus the rest-of-the-world. In the example, it is positive at €500 (the profits of the car producer move out, and the household salaries of 1000 move in), and hence the GNI is €8200.
(e) NDP and NNI evolve from GDP and GNI by subtracting depreciation, in detail $NDP = 5700$ and $NNI = 6200$.

Comments on marking: Conceptual errors are penalized more severely than calculation errors (for example, failure to subtract wages in calculating profits, adding taxes to GDP). In (c), the description of the approaches carries 5 points, as does the calculation of the correct value of 7700.

3. (a) $Y = \frac{c_0 - c_1 T + b_0 - b_2 i + G}{1 - c_1 - b_1}$ is the IS curve;
- (b) $Y = \frac{M}{d_1 P} + \frac{d_2 i}{d_1}$ is the LM curve (both curves can also be written in i as a function of Y);
- (c) $Y = \frac{c_0 - c_1 T + b_0 + \frac{b_2 M}{d_2 P} + G}{1 - c_1 - b_1 + \frac{b_2 d_1}{d_2}}$ is a representation for the equilibrium;
- (d) $Y = 1000$ and $i = 0.05$ solve. Furthermore, we have $C = I = 400$. $Y = C + I + G$ is easily checked, and similarly for $I = S_H + T - G$, as $T - G = 0$ and $S_H = Y_D - C = Y - T - C = 400$;
- (e) The second policy represents a fiscal expansion, the first one a fiscal contraction, and the third one a monetary expansion;
- (f) A graph should show a positively sloped LM curve and a negatively sloped IS curve, Y on the x-axis and i on the y-axis. The IS curve should show an outward shift, such that Y and i increase in their new equilibrium.

Comments on marking: Good attempts at a (quantitative or algebraic) solution are appreciated by some points, even if they do not lead to a correct result. Slightly incorrect graphs in (f) carry some points. Calculation errors are penalized less severely than conceptual errors.