**Macroeconomics, partial 2 exam, BE202.01 VERSION 1**

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| **Name:** | **Student id:** |

**Instructions and tips:**

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| * Make sure that you work on the correct version. Rule: when the last digit of your student id is odd (1-3-5-7-9), then Version 1. Otherwise Version 2. * Save your file regularly, every 15-20 minutes, under a name and in a directory that you do not forget. * Work clear and structured, place all your answers in the boxes. * For drawing graphs: You may draw in your notebook, then upload the picture (in pdf, jpg or jpeg format). * You cannot attach pictures of your notebook for calculations. You should type these in the answer box. * Work efficient, and follow the instructions.   + If you are required to explain, then explain. If the instructions mention that there is no need to explain, then do not include an explanation.   + If you are required to show calculations, then show calculations. Partial credit will be granted when part of the procedure is correct, and no credit will be given when no calculations are shown (not even if the answer is correct). * During the entire exam you should have zoom on, and video working, with sound muted. If this is not fulfilled, then the exam is not valid and grade 0 will be awarded. * This is an individual test, so no cooperation among students is allowed. When copying is evident, *both the student that copied and the student that allowed the copying* will receive 0. When repeated, Academic Dishonesty will be applied. * When you have finished, you have to submit the exam in ecampus-assignments. * Save your file as a Word document, not like Pages or other incompatible formats. If you doubt, then ask for confirmation if the file can be opened directly after you submit. |

**Problem 1 (4 x 5 = 20 points)**

For each of the next cases, does the AD or AS curve shift, and in what direction? Explain briefly.

1. The economy of the European Union has entered a recession. The European Union is the US’ largest exports market.
2. Productivity increases (without a change in nominal salaries)
3. Sharp increase in investments in Medicare (health care spending by the Federal government)
4. An increase in personal income taxes (no change in corporate profit taxes)

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| **Answers:**   |  |  |  |  | | --- | --- | --- | --- | |  | AD or AS | Left or Right | Explanations | | a) |  |  |  | | b) |  |  |  | | c) |  |  |  | | d) |  |  |  | |

**Problem 2 (2 x 10 = 20 points)**

Assume that the economy from fictitious country Haringland has a Marginal Propensity to Consume (MPC) of 0.85, and experiences high economic growth, with historically low unemployment, and rapidly increasing price levels. Assume that prices are flexible, both upward and downward.

1. How large a change in taxes is needed to shift the aggregate demand curve leftward by $50 billion? Should the taxes increase or decrease?
2. Explain step-by-step how the change in taxes in a) is going to influence prices and real output.

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| **Answers:**  a) (show calculations)  b) (explain step-by-step) |

**Problem 3 (2 x 5 = 10 points)**

Identify the recognition lag, administrative lag and operational lag of fiscal policy of the following events:

1. To stimulate the economy, the Biden administration has proposed to invest $2 trillion in infrastructure. Currently, Congress is discussing the proposal and a vote is not expected before the summer.
2. Distracted by internal political struggle, the politicians have not taken notice that the economy had entered a recession: unemployment has risen to more than 10%.

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| **Answers (no need to explain)**  a)  b) |

**Problem 4 (3 x 5 = 15 points)**

Assuming no other changes, what effect do the following changes have on M1 and M2?

1. Checkable deposits decrease by $40,000 and balances in small-denominated Time Deposits increase by $40,000.
2. Jenny withdraws $1,000 cash from her checking account.
3. John buys a share of Tesla, paying with cash.

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| **Answers (no need to explain):**   |  |  |  | | --- | --- | --- | |  | M1 (up / down / unchanged) | M2 (up / down / unchanged) | | a) |  |  | | b) |  |  | | c) |  |  | |

**Problem 5 (2 x 5 = 10 points)**

1. In the U.S. economy, which institution controls the money supply?
2. Explain what moral hazard is.

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| **Answers**  a) (no need to explain)  b) (explain briefly) |

**Problem 6 (5 x 5 = 25 points)**

Assume that the following data characterize the hypothetical country Haringland:

* money supply = $550 billion;
* quantity of money demanded for transactions = $350 billion;
* quantity of money demanded as an asset = $100 billion at 8 percent interest, increasing by $50 billion for each 1-percentage-point fall in the interest rate.

1. Fill in the table with interest rates and Demand & Supply for money, and determine the equilibrium interest rate

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| --- | --- | --- |
| Interest rate | Demand for Money | Supply of Money |
| 8% |  |  |
| 7% |  |  |
| 6% |  |  |
| 5% |  |  |
| 4% |  |  |

1. Draw the graph of demand and supply of money, with money on the x-axis and interest rate on the y-axis (you can paste here, or upload as a separate file)

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| **Answer:** |

More information about the economy: Consumption is $600, Government spending is $150 and net exports are $50. Investments depend on interest rates: at an interest rate of 8%, investments will be $100 billion, increasing by $25 billion for each 1-percentage-point fall in the interest rate.

To calculate the Real GDP, use the expenditures approach, so: GDP = C+I+G+Xn. For the impact of the investments on the real GDP, you should use an expenditure multiplier of 2.

1. Continue to fill in the table:

|  |  |  |  |
| --- | --- | --- | --- |
| Interest rate | Investment | Impact on GDP (incl. multiplier effect) | Real GDP |
| 8% |  |  |  |
| 7% |  |  |  |
| 6% |  |  |  |
| 5% |  |  |  |
| 4% |  |  |  |

Potential GDP is $1150 billion.

1. Is there either a recessionary output gap (negative GDP gap) or an inflationary output gap (positive GDP gap) at the equilibrium interest rate, and, if either, what is the amount?
2. Given money demand, by how much would the central bank need to change the money supply to close the output gap? Explain the mechanism, step-by-step.

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| **Answers (include brief explanations):**  d)  e) |