25-07_economics.pdf

This box is for the examiner only:

Question:	1	2	3	4	5	6	Total
Points:	6	16	15	10	28	15	90
Score:							

Economics (07/2025)

1. (6 points) **Ricardo**

   Assume that only two countries, A and B, exist. Both countries are equally endowed with labor which is the only production factor. Both countries can produce either good y or good x. The table below gives the input coefficients, a, for both countries, i.e., the units of labor needed to produce one unit of good y and good x, respectively. Assume that both countries have 12 units of labor available.

	x	y
B	20	25
A	10	13

   a) Specify the country with an **absolute** advantage in good x.
   b) Specify the country with an **absolute** advantage in good y.
   c) Specify the country with a **comparative** advantage in good x.
   d) Specify the country with a **comparative** advantage in good y.

2. **GDP and CPI**

   Suppose an economy produces three goods: A, B, and C. Goods A and B are final goods. Good C is an intermediate good. The following table shows the quantities, q^i, and prices, p^i, of the goods, $i = \{A, B, C\}$, over the years, t. The prices are measured in Euro.

t	q^A	p^A	q^B	p^B	q^C	p^C
2024	900	2	500	1	200	3
2025	1,300	3	400	2	250	4

   (a) (2 points) Calculate nominal Gross Domestic Product (GDP) for both years.

   (b) (2 points) Using 2024 as the base year, calculate real GDP for both years.

   (c) (2 points) Using 2024 as the base year, calculate Consumer Price Index (CPI) for both years.

   (d) (2 points) Calculate the inflation rate from 2024 to 2025

   (e) (8 points) Central banks and politicians try to keep inflation low because it has negative implications for an economy and a society. Name and explain four reasons.

3. (15 points) **Business optimization**

   A company which is a monopolist in his market has estimated its demand and total cost functions as follows:

$$Q = 210 - 3P.$$
$$C = 1 + Q + Q^2.$$

   Where P denotes the price in Euro, Q in thousands of units, and C is measured in thousands of Euro.

   a) Calculate the total revenue function.
   b) Calculate the profit-maximizing price and output.

4. (10 points) **Perfect market**

   In the lecture, we defined seven assumptions of perfect markets and perfect competition. Two of these seven are:

   1. Many buyers and sellers
   2. Homogeneous products

   Name the five missing ones.

5. **Monetary international economics**

   (a) (6 points) Briefly explain why net exports must equal net capital outflows using the formal representation.

   (b) (8 points) One of Donald Trump's economic goals is to reduce the United States trade deficit. Using the formal representation, explain how he can achieve this.

   (c) (6 points) Since Donald Trump returned to the Oval Office, the Dollar-to-Euro exchange rate has changed significantly. Has the Dollar appreciated or depreciated against the Euro? Discuss how this change may affect the United States' trade deficit.

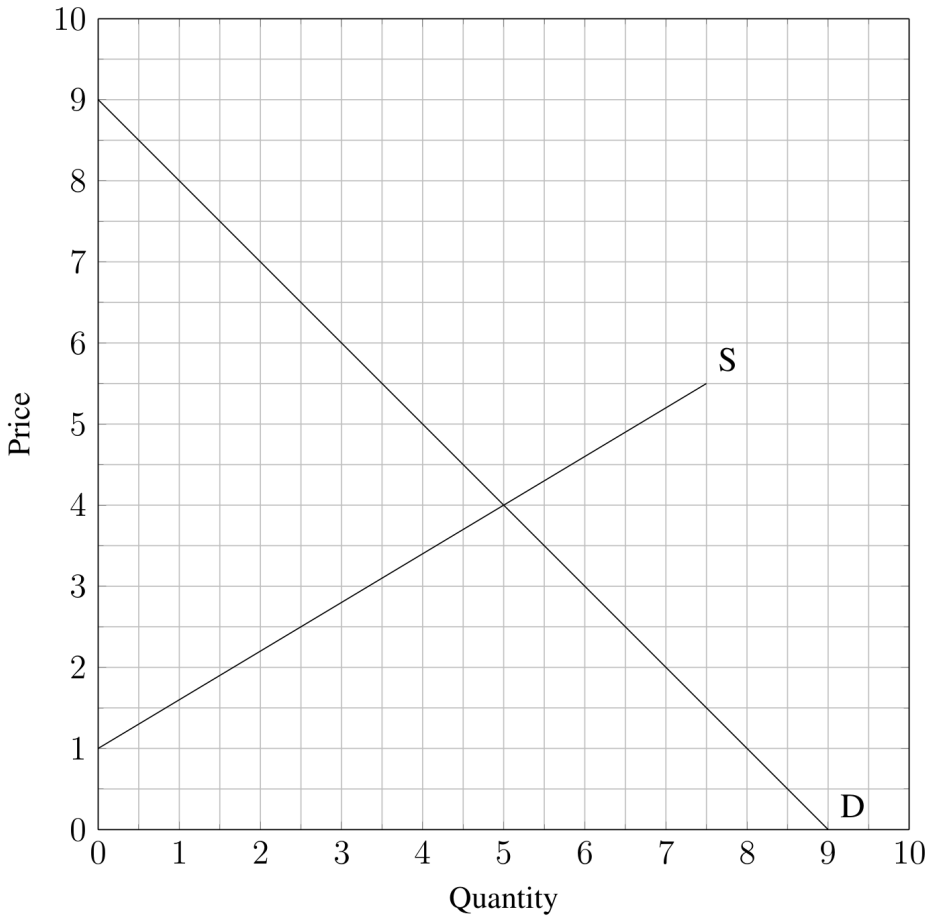
   (d) (8 points) Suppose an investor from Indonesia asks for your help. The Indonesian investor wants to buy new inputs for her business in Indonesia next year, i.e., t=2026. Today, i.e., t=2025, she has 10,000,000 Indonesian Rupiah (IDR) and she wonders what to do with this money for one year. She has one potential investments in Germany mind. Here are the conditions:

      - 4% of annual interest
      - One Euro can be converted to 15,000 IDR this year.
      - You expect that one Euro can be converted to 20,000 IDR next year.
      - Moreover, you expect no inflation in both countries and no banking fees or alike.

      Calculate the value of the investment in the year 2025 in Indonesian Rupiah (IDR).

6. **Market and welfare**

The following diagram shows the supply and demand schedule for a given good. The supply function is labeled with S and the demand function is labeled with D.



(a) (2 points) Specify the equilibrium market price, p.

(b) (2 points) Specify the equilibrium quantity traded, q.

(c) (5 points) Use the diagram above to sketch the area that represents the consumer surplus, the producer surplus, and total welfare.

(d) (6 points) Assume the country opens up to foreign markets so that consumer can now import the given good at a final consumption price of $p^{\text{open}} = 1$.

- State the quantity that is now imported.
- State the producer surplus in the open market.
- Use the diagram above to sketch the area that represents the additional consumer surplus.

25-11_economics.pdf

This box is for the examiner only:

Question:	1	2	3	4	5	6	Total
Points:	10	14	12	14	15	25	90
Score:							

Economics (11/2025)

1. (10 points) **Ricardo**

   Assume that only two countries, A and B, exist. Both countries are equally endowed with labor which is the only production factor. Both countries can produce either good y or good x. The table below gives the input coefficients, a, for both countries, i.e., the units of labor needed to produce one unit of good y and good x, respectively.

	x	y
B	20	70
A	40	140

   a) Specify the country with an **absolute** advantage in good x. Explain your decision.
   b) Specify the country with an **absolute** advantage in good y. Explain your decision.
   c) Specify the country with a **comparative** advantage in good x. Explain your decision.
   d) Specify the country with a **comparative** advantage in good y. Explain your decision.
   e) Assume the input coefficient of country A in good Y changes to $a_A^y = 139$. All other input coefficients remain the same. Discuss the trade structure in that situation.

2. **GDP and CPI**

   Suppose an economy produces three goods: A, B, and C. Goods A and C are final goods. Good B is an intermediate good. The following table shows the quantities, q^i, and prices, p^i, of the goods, $i = \{A, B, C\}$, over the years, t. The prices are measured in Euro.

t	q^A	p^A	q^B	p^B	q^C	p^C
2024	800	2	50	1	200	3
2025	1,200	2.5	40	1.4	180	3.2

   (a) (2 points) Calculate nominal Gross Domestic Product (GDP) for both years.

   (b) (2 points) Using 2024 as the base year, calculate real GDP for both years.

   (c) (2 points) Using 2024 as the base year, calculate Consumer Price Index (CPI) for both years.

   (d) (8 points) Central banks and politicians try to keep inflation low because it has negative implications for an economy and a society. Name and explain four reasons.

3. (12 points) **Business optimization**

   A company which is a monopolist in his market has estimated its demand and total cost functions as follows:

$$Q = 180 - 3P.$$
$$C = 2 + \frac{1}{3}Q + Q^2.$$

   Where P denotes the price in Euro, Q in thousands of units, and C is measured in thousands of Euro.

   a) Calculate the total revenue function.
   b) Calculate the profit-maximizing price and output.

4. (14 points) **Perfect market**

   Name the seven assumptions of perfect markets and perfect competition we defined in the lecture notes.

5. **Monetary international economics**

   (a) (9 points) The article "TRUMP EFFECT: A Running List of New U.S. Investment in President Trump's Second Term" by The White House (2025), published on August 15, contains a frequently updated list of new U.S.-based investments in President Trump's second term. Here is a quote from the article:

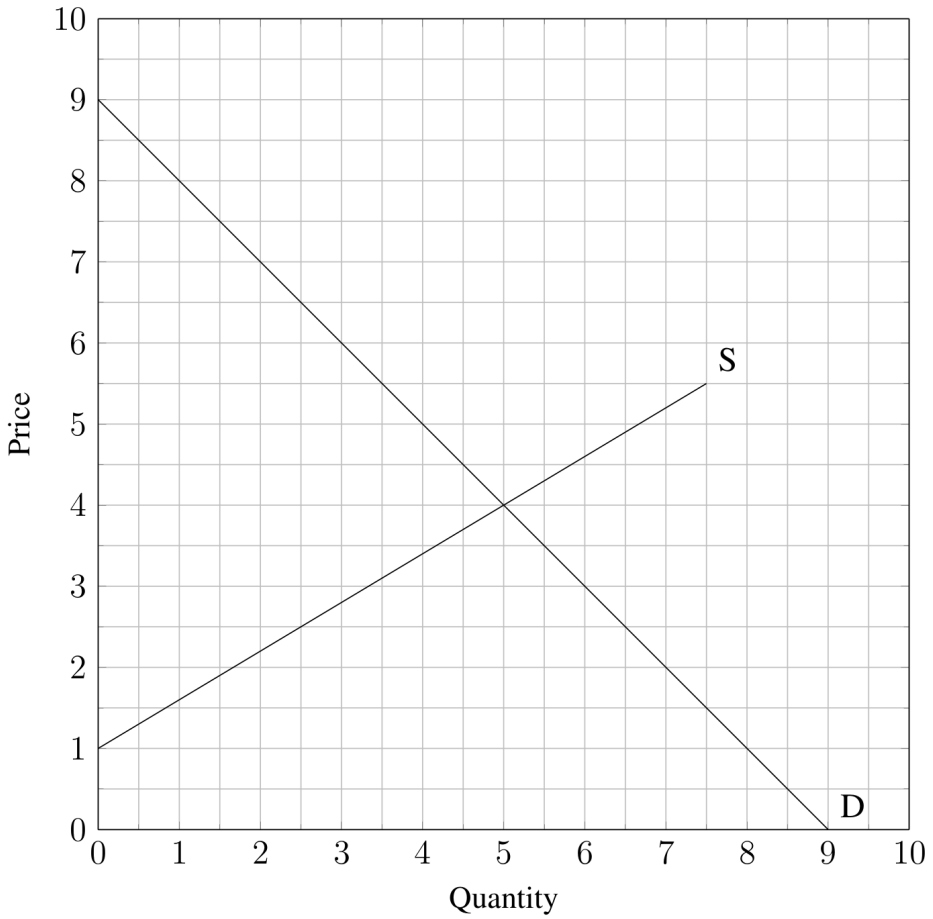
   > "Since President Donald J. Trump took office, his unwavering commitment to revitalizing American industry has spurred trillions of dollars of investments in U.S. manufacturing, production, and innovation — and the list only continues to grow."

   Comment on the quote and discuss the potential consequences of this policy for the U.S. trade balance. Justify your argument using formal economic representation.

   (b) (6 points) Explain the *simple rule for r* and why it is called the "simple" rule.

6. **Market and welfare**

The following diagram shows the supply and demand schedule for a given good. The supply function is labeled with S and the demand function is labeled with D.



(a) (2 points) Specify the equilibrium market price, p.

(b) (2 points) Specify the equilibrium quantity traded, q.

(c) (5 points) Use the diagram above to sketch the area that represents the consumer surplus, the producer surplus, and total welfare.

(d) (4 points) Assume the country opens up to foreign markets so that consumer can import the given good at a final consumption price of $p^{\text{open}} = 5$.

Discuss the quantity now imported, and the changes in producer surplus, consumer surplus, and total welfare.

(e) (6 points) Discuss potential factors that could cause the demand curve to shift upward.

(f) (6 points) Discuss potential factors that could cause the supply curve to shift upward.

References

The White House. (2025). *TRUMP EFFECT: A running list of new U.S. Investment in President Trump's second term*. https://www.whitehouse.gov/articles/2025/08/trump-effect-a-running-

list-of-new-u-s-investment-in-president-trumps-second-term/

26-01_economics.pdf

This box is for the examiner only:

Question:	1	2	3	4	5	Total
Points:	12	14	10	18	36	90
Score:						

Economics (01/2026)

1. (12 points) **Unemployment**

   There are several rational explanations why wages are downward rigid and remain above the market clearing level. Explain the three sources we discussed in class.

2. **GDP and CPI**

   Suppose an economy produces three goods: A, B, and C. Goods A and B are final goods. Good C is an intermediate good. The following table shows the quantities, q^i, and prices, p^i, of the goods, $i = \{A, B, C\}$, over the years, t. The prices are measured in Euro.

t	q^A	p^A	q^B	p^B	q^C	p^C
2024	500	2	50	1	200	3
2025	600	2.2	40	1.2	180	2.2

   (a) (2 points) Calculate nominal Gross Domestic Product (GDP) for both years.

   (b) (2 points) Using 2024 as the base year, calculate real GDP for both years.

   (c) (2 points) Using 2024 as the base year, calculate Consumer Price Index (CPI) for both years.

   (d) (8 points) Central banks and politicians try to keep inflation low because it has negative implications for an economy and a society. Name and explain four reasons.

3. (10 points) **Business optimization**

   A company which is a monopolist in his market has estimated its demand and total cost functions as follows:

$$Q = 160 - 2P.$$
$$C = 1 + \frac{1}{3}Q + Q^2.$$

   Where P denotes the price in Euro, Q in thousands of units, and C is measured in thousands of Euro.

   a) Calculate the total revenue function.
   b) Calculate the profit-maximizing price and output.

4. **International economics**

(a) (8 points) **Ricardo**

Assume that only two countries, A and B, exist. Both countries are equally endowed with labor which is the only production factor. Both countries can produce either good y or good x. The table below gives the input coefficients, a, for both countries, i.e., the units of labor needed to produce one unit of good y and good x, respectively.

	x	y
B	81	82
A	40	41

a) Specify the country with an **absolute** advantage in good x. Explain your decision.
b) Specify the country with an **absolute** advantage in good y. Explain your decision.
c) Specify the country with a **comparative** advantage in good x. Explain your decision.
d) Specify the country with a **comparative** advantage in good y. Explain your decision.

(b) (4 points) **Heckscher-Ohlin model**

Given the assumptions of the Heckscher-Ohlin model, let's consider a scenario involving only two countries, A and B, and two goods, x and y. It is assumed that good y is capital-intensive in its production, whereas good x is labor-intensive. Given the endowments in the table below, name the comparative advantages of the two countries. Briefly discuss your decision.

	Country A	Country B
Labor Endowments	2000	200
Capital Endowments	1400	1399

(c) (6 points) **International investment**

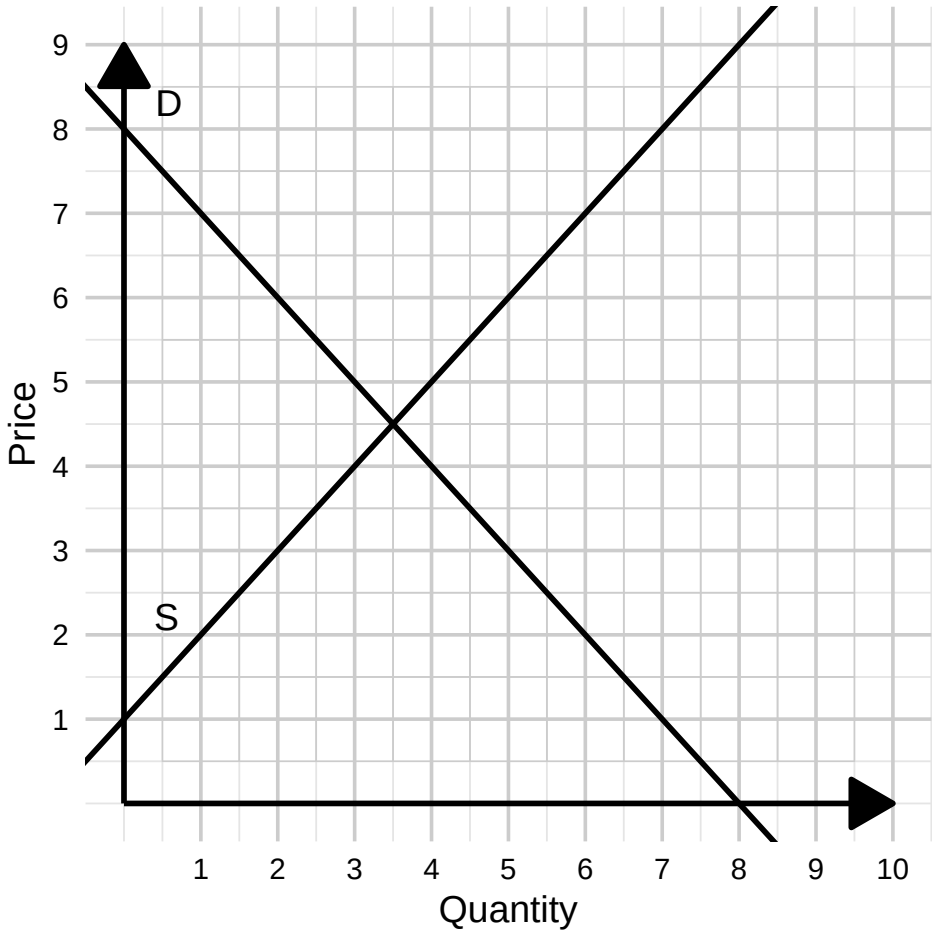
Suppose you have 1,000 Euro this year that you wish to invest for one year, before using it to purchase something priced in euros. You are offered the following investment conditions in the United States:

- The annual interest rate in the U.S. is 3%.
- The current exchange rate is 1 Dollar is equal to 0.85 Euro.
- You expect that next year, 1 Euro can be exchanged for 1.20 Dollar.
- There is no expected inflation in Germany or the U.S.

i) Calculate the minimum interest rate an alternative investment in Germany must offer so that you would prefer to invest in Germany rather than in the U.S., given all information above. Show your calculations.
ii) Based on the expectations above, do you anticipate the Euro to appreciate or depreciate against the Dollar over the coming year? Explain your reasoning.

5. **Welfare analysis**

The diagram below shows the supply and demand schedule for a given good in a closed economy. The supply function is labeled with S and the demand function is labeled with D.



(a) (6 points) Discuss potential factors that could cause the demand curve to shift upward.

(b) (6 points) Discuss potential factors that could cause the supply curve to shift upward.

(c) (2 points) State the equilibrium market price in autarky, p^*.

(d) (2 points) State the equilibrium quantity traded in autarky, p^*.

(e) (6 points) Using the diagram show the consumer and producer surplus.

(f) (6 points) Suppose the country opens up to global markets and can trade the respective good at a price of 3, $p^{\text{global}} = 3$. Discuss again the consumer and producer surplus. Has the total welfare changed?

(g) (8 points) Suppose the government introduces a tarif of 1 on foreign imports. Discuss consumer surplus, producer surplus, government revenue, and total welfare in this scenario. Assume the country is a *small open economy*.