Output Decisions and Price-Matching: Theory and Experiment

Experimental Instructions

English Translation of Treatment O

General Information

This is an experiment to study your decision-making while you interact with another individual. In this experiment, you will collect tokens and you will be paid in cash in Euros (1 token = 0.1 Euro cent) at the end of the experiment. You will start the experiment with 2000 tokens (2 Euros) as your initial endowment and will add more tokens throughout the experiment for the profit you make. The amount you earn depends on the decisions of you and your opponent. Please read and listen carefully to this instruction to make sure that you understand the decision process. At the end of the instruction you will have a chance to ask questions. The experiment will conclude with a brief questionnaire.

Experiment Structure

After you complete the practice rounds, the actual experiment consists of 10 rounds. In total, we expect the experiment to last no more than ninety minutes, including the instructions and practice rounds.

Your Group

After the practice rounds conclude, you will be randomly paired with another participant in each round. This means you will interact with ten other participants, chosen randomly and anonymously. All decisions will be made anonymously, so no participant will know the opponents' identity during or after the experiment. Only you will be informed of the amount you earn, and you will be paid in cash at the end of the experiment. Note that there are two practice rounds before the actual experiment and any choice you make during these

rounds will not affect your earnings. In addition, your opponents for the actual experiment will be different from the one during the practice. The purpose of the practice rounds is to familiarize you with the computer program used in the experiment.

Communication and Questions

Communication with other participants is prohibited during the experiment. If you have any questions, please raise your hand and we will come to assist you. Do not hesitate to call on us.

Instructions

At the beginning of each round, you and your opponent will be asked to make decisions, which will determine the market price you and your opponent face, as well as the revenue and profit you and your opponent obtain. Each of you produces an identical product that costs 40 tokens to produce per unit. In each round both you and your opponent have to choose the quantity that one commits to produce (x_i). The total cost is the product of the unit cost (40) and the quantity you committed to produce (x_i), i.e., $40x_i$. For example, if you commit to produce 10 units in this round, the cost is $40 * 10 = 400$ in this round. The total production in this round will be $x = x_1 + x_2$ and the market price is found as follows:

$$P = \begin{cases} 160 - x_1 - x_2 & \text{if } x_1 + x_2 < 160 \\ 0 & \text{if } x_1 + x_2 \geq 160. \end{cases}$$

The revenue for each participant is the product of the market price and one's own production amount, i.e., Px_i. The profit will be the revenue minus the cost. In other words,

$$\pi_i = Px_i - 40x_i$$

Notice that you may have negative profit if the total committed amount of you and your opponent is too high. In such cases, the negative profit will be deducted from overall profit including your endowment.

Payoffs

Your earnings from this experiment will be 2 Euros as a guaranteed participation payoff in addition to your earnings from the experiment. You will start the experiment with an endowment of 2,000 tokens (equivalent of 2 Euros). As described earlier your endowment may increase or decrease depending on whether you make a profit or loss during the experiment. If your final balance of tokens is negative, then you will earn only the participation payoff of 2 Euros. However, if your balance is positive then you will be paid 0.1 cents for every token

in addition to the participation payoff of 2 Euros. Notice that your earnings do not depend on how much you accumulate in comparison to others, only on how much you accumulate.

To make sure that you understand how the market price and your profit are determined in the experiment, we will now provide some examples.

Examples:

Suppose participant 1 commits to produce 30 units while participant 2 commits to produce 60 units. Because the total committed production does not exceed 160, the market price is $P = 160 - 90 = 70$. Consequently, participant 1 earns $70 * 30 - 40 * 30 = 900$ tokens while participant 2 earns $70 * 60 - 40 * 60 = 1,800$ tokens in this round. If the same scenario plays out for 10 rounds to both participants, participant 1 earns $9,000$ tokens, whereas participant 2 earns $18,000$ tokens. Consequently, the total earnings for participant 1 is 13 Euros (9 Euros from accumulated tokens, 2 Euros from endowment and the guaranteed 2 Euros) while participant 2 earns 22 Euros. Suppose now that participant 1 produces 70 and participant 2 produces 70. In this case, the market price is 160-70-70=20. Thus, both participants make a loss of 20 tokens from each unit (20-40) and 1400 tokens in this round. If the same scenario plays out for 10 rounds to both participants, the participants will exhaust their endowment after two round and will end up with the guaranteed payment of 2 Euros.

Now we will start two rounds of practice to show you how to make your decisions on the computer screen.

The first screen you will see has three panels. The left part of the top panel shows the period you are currently in. Currently, it must show that "Trial 1 of 2," so we are in the first round of two practice rounds. On the top right, you will see the time left to make your decision. The right panel called "Calculator" is a tool where you can calculate the outcomes resulting from possible decisions of you and your opponent. In this panel, you can enter various decision choices of your opponent and you and see their outcomes. This calculator is intended to help you to predict what outcomes you would get given the choices of you and your opponent. Please now try Calculator by entering some fictitious choices in it.

The larger left panel called "Decision" is where you enter your final decision in this round. Please enter your choices and press the SUBMIT button. As soon as your opponent enters her choices, the outcomes of this round should appear on the screen. If you see this screen, please proceed to the next round by clicking the OK button. Now you should have entered the second practice round. Please enter your choices and press the SUBMIT button.

Now you have finished the two practice rounds, and we are ready to start the actual experiment. Please remember that you will be randomly paired with a new opponent in every round. Please try to make your decisions within the given time. The length of the experiment depends on how long it takes for each of you to finalize your decisions. You

can use your calculator as much as you want; however, please try to not go over the time limit. Also, we will provide you with a pen and a piece of paper. You can use them for your calculator or to take notes.

If you have any questions, please raise your hand. And good luck!

English Translation of Treatment PM

General Information

This is an experiment to study your decision-making while you interact with another individual. In this experiment, you will collect tokens, and you will be paid in cash in Euros (1 token = 0.1 Euro cent) at the end of the experiment. The amount you earn depends on the decisions of you and your opponent. Please read and listen carefully to this instruction to make sure that you understand the decision process. At the end of the instruction you will have a chance to ask questions. The experiment will conclude with a brief questionnaire.

Experiment Structure

After you complete the practice rounds, the actual experiment consists of 10 rounds. In total, we expect the experiment to last no more than ninety minutes, including the instructions and practice rounds.

Your Group

After the practice rounds conclude, you will be randomly paired with another participant in each round. This means you will interact with ten other participants, chosen randomly and anonymously. All decisions will be made anonymously, so no participant will know the opponents' identity during or after the experiment. Only you will be informed of the amount you earn, and you will be paid in cash at the end of the experiment. Note that there are two practice rounds before the actual experiment and any choice you make during these rounds will not affect your earnings. In addition, your opponents for the actual experiment will be different from the one during the practice. The purpose of the practice rounds is to familiarize you with the computer program used in the experiment.

Communication and Questions

Communication with other participants is prohibited during the experiment. If you have any questions, please raise your hand and we will come to assist you. Do not hesitate to call on us. ?

Instructions

At the beginning of each round, you and your opponent will be asked to make decisions, which will determine the market price you and your opponent face, as well as the revenue and profit you and your opponent will obtain. Each of you produces an identical product that costs 40 tokens to produce per unit. The market demand function is as follows:

$$Q(P) = \begin{cases} 160 - P & \text{if } P < 160 \\ 0 & \text{if } P \geq 160. \end{cases}$$

In each round both you and your opponent have to choose (i) one's own price (p_i) and (ii) whether to price-match or not. By choosing "YES" to price matching, your price will be updated to the lowest price in the market (clearly, your price will not change if your original price is the lowest one). On the other hand, by choosing "NO" to price matching, your price will be the one you chose in the first place. The revenue and profit of you and your opponent is determined as follows:

Case 1. If the participants select two different prices and if the participant who chose the higher price decides not to price-match, then the participant who chose the lower price will capture the entire market demand associated with his/her low price. The participant with the lower price earns a profit which is the multiplication of the quantity demanded at his/her price and the profit per unit, i.e., $[\pi_i = (p_i - 40)Q]$. The participant with the higher price will produce nothing and will earn zero profit in this round.

Case 2. If the participants select the same price or if the participant who chose the higher price between the two participants decides to price-match, then the lower price will become the market price and the two participants will share the market equally. The profit for each participant is found by multiplying half of the market quantity demanded given the market price by the profit per unit $[\pi_i = (P - 40)Q/2]$ where P is the market price.

Payoffs

Your earnings from this experiment will be 2 Euros as a guaranteed participation payoff in addition to your earnings from the experiment (0.1 cents for every token that you accumulate by the end of the 10 rounds). Notice that your earnings do not depend on how much you accumulate in comparison to others, only on how much you accumulate.

To make sure that you understand how the price you will sell your product as well as your profit are determined in the experiment, we will now provide some examples.

Examples:

Suppose participant 1 sets her price at 95 and decides NOT to price-match. On the other hand, participant 2 sets his price at 94 and decides to price-match. In this case, the higher price participant (in particular, participant 1 in this case) decided not to price-match, so participant 1 sells and earns zero profit. On the other hand, participant 2 captures the entire market and sells $Q(94) = 160 - 94 = 66$. And participant 2's profit is $66 * (94 - 40) = 3,564$ tokens. If the same scenario plays out for 10 rounds to both participants, participant 1 will end up earning only the guaranteed 2 euros, whereas participant 2 earns 35,640 tokens in addition to the guaranteed 2 euros.

Suppose participant 1 sets her price at 95 and decides to price-match. On the other hand, participant 2 sets his price at 94 and decides to price-match. In this case, the higher

price participant (in particular, participant 1 in this case) decided to price-match. Thus, each participant sells their products for 94 - the lowest of the two selected prices – and the participants share the market demand, equally. Each participant will sell half of the market demand: $Q(94)/2 = 66/2 = 33$. The profit for each participant in this case is $33*(94-40) = 1,782$ tokens. If the same scenario plays out for 10 rounds to both participants, each will earn 17,820 tokens in addition to the guaranteed 2 euros.

Now we will start two rounds of practice to show you how to make your decisions on the computer screen.

The first screen you will see has three panels. The left part of the top panel shows the period you are currently in. Currently, it must show that "Trial 1 of 2," so we are in the first round of two practice rounds. On the top right, you will see the time left to make your decision. The right panel called "Calculator" is a tool where you can calculate the outcomes resulting from possible decisions of you and your opponent. In this panel, you can enter various decision choices of your opponent and you and see their outcomes. This calculator is intended to help you to predict what outcomes you would get given the choices of you and your opponent. Please now try Calculator by entering some fictitious choices in it.

The larger left panel called "Decision" is where you enter your final decision in this round. Please enter your choices and press the SUBMIT button. As soon as your opponent enters her choices, the outcomes of this round should appear on the screen. If you see this screen, please proceed to the next round by clicking the OK button. Now you should have entered the second practice round. Please enter your choices and press the SUBMIT button.

Now you have finished the two practice rounds, and we are ready to start the actual experiment. Please remember that you will be randomly paired with a new opponent in every round. Please try to make your decisions within the given time. The length of the experiment depends on how long it takes for each of you to finalize your decisions. You can use your calculator as much as you want; however, please try to not go over the time limit. Also, we will provide you with a pen and a piece of paper. You can use them for your calculator or to take notes.

If you have any questions, please raise your hand. And good luck!

English Translation of Treatment PO

General Information

This is an experiment to study your decision-making while you interact with another individual. In this experiment, you will collect tokens, and you will be paid in cash in Euros (1 token = 0.1 Euro cent) at the end of the experiment. You will start the experiment with 8000 tokens (8 Euros) as your initial endowment and will add more tokens throughout the experiment for the profit you make. The amount you earn depends on the decisions of you and your opponent. Please read and listen carefully to this instruction to make sure that you understand the decision process. At the end of the instruction you will have a chance to ask questions. The experiment will conclude with a brief questionnaire.

Experiment Structure

After you complete the practice rounds, the actual experiment consists of 10 rounds. In total, we expect the experiment to last no more than ninety minutes, including the instructions and practice rounds.

Your Group

After the practice rounds conclude, you will be randomly paired with another participant in each round. This means you will interact with ten other participants, chosen randomly and anonymously. All decisions will be made anonymously, so no participant will know the opponents identity during or after the experiment. Only you will be informed of the amount you earn, and you will be paid in cash at the end of the experiment. Note that there are two practice rounds before the actual experiment, and any choice you make during these rounds will not affect your earnings. In addition, your opponents for the actual experiment will be different from the one during the practice. The purpose of the practice rounds is to familiarize you with the computer program used in the experiment.

Communication and Questions

Communication with other participants is prohibited during the experiment. If you have any questions, please raise your hand and we will come to assist you. Do not hesitate to call on us.

Instructions

At the beginning of each round, you and your opponent will be asked to make decisions, which will determine the market price you and your opponent face, as well as the revenue and profit you and your opponent obtain. Each of you produces an identical product that

costs 40 tokens to produce per unit. The market demand function is as follows:

$$Q(P) = \begin{cases} 160 - P & \text{if } P < 160 \\ 0 & \text{if } P \geq 160. \end{cases}$$

In each round both you and your opponent have to choose (i) ones own price () and (ii) the quantity that one commits to produce (). The total cost is the product of the unit cost (40) and the quantity you committed to produce (), i.e., 40. For example, if you commit to produce 10 units in this round, the cost is 40*10=400 in this round. The revenue (thus, the profit) for each participant is calculated in the following way:

Case 1. If the two participants choose different prices, then the lower price participant (say, participant 1) will sell his/her committed quantity OR the quantity demanded at his/her price, whichever is lower. Specifically,

$$q_1 = \begin{cases} Q(p_1) & \text{if } (p_1) \leq x_1 \\ x_1 & \text{if } (p_1) > x_1. \end{cases}$$

(i) If participant 1's committed quantity is higher than the quantity demanded at her/his price, then participant 2 will not sell anything ($q_2 = 0$); thus, in this case participant 2 will earn zero revenue (but participant 2 would net a negative profit if s/he committed to produce a positive amount).
(ii) If the committed quantity of participant 1 is lower than the quantity demanded at her/his price, then participant 1 sells the committed quantity. On the other hand, participant 2 will sell his/her committed quantity (i.e., x_2) OR the demanded quantity at the price of participant 2 that is not met by participant 1s committed quantity (i.e., $Q(p_2) - x_1$), whichever is lower.

Case 2. If both participants choose the same price, then this price becomes the market price. If the total quantity that the two participants committed is smaller than the quantity demanded at the market price, both participants will sell their committed quantities. If the total committed quantity is larger than the quantity demanded, the participant with the lower committed quantity will sell his/her committed quantity OR half of the quantity demanded, whichever is lower. The participant with the higher committed production will sell the rest of the quantity demanded.

In either case, the profit will be the revenue minus the cost. In other words,

$$\pi_i = p_i q_i 40 x_i$$

where q_i is the sales quantity of participant i.

Notice that you may have negative profit if your committed amount is much higher than the amount you will eventually sell. In that case, the negative profit will be deducted from your overall profit including your endowment.

Payoffs

Your earnings from this experiment will be 2 Euros as a guaranteed participation payoff in addition to your earning from the experiment. You will start the experiment with an endowment of 8,000 tokens (equivalent of 8 Euros). As described earlier your endowment may increase or decrease depending on whether you make a profit or loss during the experiment. If your final balance of tokens is negative, then you will earn only the participation payoff of 2 Euros. However, if your balance is positive then you will be paid 0.1 cents for every token in addition to the participation payoff of 2 Euros. Notice that your earnings do not depend on how much you accumulate in comparison to others, only on how much you accumulate.

To make sure that you understand how the market price and your profit are determined in the experiment, we will now provide some examples.

1. Suppose participant 1 sets her price at 100 and commits to produce 30 units. On the other hand, participant 2 sets his price at 99 and commits to produce 60 units. In this case, participant 2 sells first up till the market demand at the price of 99, $Q(99) = 160 - 99 = 61$. Because participant 2 committed to produce 60, she will sell 60. Thus, her profit is $60 * (99 - 40) = 3,540$ tokens in this round. On the other hand, participant 1 sells zero unit because at price 100 the market demand is $Q(99) = 160 - 100 = 60$, which is equal to the quantity participant 2 committed to produce. Due to the commitment to produce 30 units, participant 1 experiences a loss of 1200 tokens (i.e., 0-40*30=-1200). If the same scenario plays out for 10 rounds to both participants, participant 1 exhausts his endowment of 8,000 tokens after seven rounds and will end up earning only the guaranteed 2 Euros, whereas participant 2 earns 35,400 tokens in addition to the endowment of 8,000 tokens. The total earnings for participant 2 will be 45.4 Euros (43.4 Euros from tokens and the guaranteed 2 Euros).

2. Suppose now that participant 1 sets its price to 40 and produces 60. On the other hand, suppose participant 2 sets its price to 80 and produces 20. In this case, participant 1 sells 60 because the market demand at price 40 is 120. Thus, participant 1 earns $(40-40)*60 = 0$. Participant 2, on the other hand, sells 20 because the market demand at 80 is 80 out of which participant 1 supplies only 60. The profit for participant

2 is $20 * (80 - 40) = 800$ tokens. If the same scenario plays out for 10 rounds to both participants, participant 1 will end up with his endowment of 8,000 tokens while participant 2 earns 8,000 tokens in addition to the endowment of 8,000 tokens.

3. Suppose now that participant 1 sets her price to 80 and produces 30. On the other hand, suppose participant 2 sets his price to 80 and produces 50. In this case, the market price is 80. The market demand for this price is 80 units which is equal to the total committed production. Thus, both participants sell their committed production. Specifically, participant 1 sells 30 units earning a profit of $30 * (80 - 40) = 1,200$ tokens. Participant 2 sells 50 units, so her profit is $50 * (80 - 40) = 2,000$ tokens. If the same scenario plays out for 10 rounds to both participants, participant 1 earns 12,000 in addition to the endowment of 8,000 tokens while participant 2 earns 20,000 tokens in addition to the endowment of 8,000 tokens.

Now we will start two rounds of practice to show you how to make your decisions on the computer screen.

The first screen you will see has three panels. The left part of the top panel shows the period you are currently in. Currently, it must show that "Trial 1 of 2," so we are in the first round of two practice rounds. On the top right, you will see the time left to make your decision. The right panel called "Calculator" is a tool where you can calculate the outcomes resulting from possible decisions of you and your opponent. In this panel, you can enter various decision choices of your opponent and you and see their outcomes. This calculator is intended to help you to predict what outcomes you would get given the choices of you and your opponent. Please now try Calculator by entering some fictitious choices in it.

The larger left panel called "Decision" is where you enter your final decision in this round. Please enter your choices and press the SUBMIT button. As soon as your opponent enters her choices, the outcomes of this round should appear on the screen. If you see this screen, please proceed to the next round by clicking the OK button. Now you should have entered the second practice round. Please enter your choices and press the SUBMIT button.

Now you have finished the two practice rounds, and we are ready to start the actual experiment. Please remember that you will be randomly paired with a new opponent in every round. Please try to make your decisions within the given time. The length of the experiment depends on how long it takes for each of you to finalize your decisions. You can use your calculator as much as you want; however, please try to not go over the time limit. Also, we will provide you with a pen and a piece of paper. You can use them for your

calculator or to take notes. If you have any questions, please raise your hand. And good luck!

English Translation of Treatment POM

General Information

This is an experiment to study your decision-making while you interact with another individual. In this experiment, you will collect tokens and you will be paid in cash in Euros (1 token = 0.1 Euro cent) at the end of the experiment. You will start the experiment with 2000 tokens (2 Euros) as your initial endowment and will add more tokens throughout the experiment for the profit you make. The amount you earn depends on the decisions of you and your opponent. Please read and listen carefully to this instruction to make sure that you understand the decision process. At the end of the instruction you will have a chance to ask questions. The experiment will conclude with a brief questionnaire.

Experiment Structure

After you complete the practice rounds, the actual experiment consists of 10 rounds. In total, we expect the experiment to last no more than ninety minutes, including the instructions and practice rounds.

Your Group

After the practice rounds conclude, you will be randomly paired with another participant in each round. This means you will interact with ten other participants, chosen randomly and anonymously. All decisions will be made anonymously, so no participant will know the opponents' identity during or after the experiment. Only you will be informed of the amount you earn, and you will be paid in cash at the end of the experiment. Note that there are two practice rounds before the actual experiment, and any choice you make during these rounds will not affect your earnings. In addition, your opponents for the actual experiment will be different from the one during the practice. The purpose of the practice rounds is to familiarize you with the computer program used in the experiment.

Communication and Questions

Communication with other participants is prohibited during the experiment. If you have any questions, please raise your hand and we will come to assist you. Do not hesitate to call on us.

Instructions

At the beginning of each round, you and your opponent will be asked to make decisions, which will determine the market price that you and your opponent face as well as the revenue and profit you and your opponent obtain. Each of you produces an identical product that costs 40 tokens to produce per unit. The market demand function is as follows:

$$Q(P) = \begin{cases} 160 - P & \text{if } P < 160 \\ 0 & \text{if } P \geq 160. \end{cases}$$

In each round, both you and your opponent have to choose (i) one's own price (p_i), (ii) whether to price-match or not, and (iii) the quantity that one commits to produce (x_i). By choosing "YES" to price matching, your price will be updated to the lowest price in the market (clearly, your price will not change if your original price is the lowest one). On the other hand, by choosing "NO" to price matching, your price will be the one you chose in the first place. The total cost is the product of the unit cost (40) and the quantity you committed to produce (x_i), i.e., $40x_i$. For example, if you commit to produce 10 units in this round, the cost is $40 * 10 = 400$ in this round. The revenue (thus, the profit) for each participant is calculated in the following way:

Case 1. If the two participants choose different prices and if the participant who chose the higher price (say, participant 2) decides not to price-match, then the lower price participant (say, participant 1) will sell her committed quantity OR the quantity demanded at her price, whichever is lower. Specifically,

$$q_1 = \begin{cases} Q(p_1) & \text{if } Q(p_1) \leq x_1 \\ x_1 & \text{if } Q(p_1) > x_1. \end{cases}$$

(i) If participant 1's committed quantity is larger than the quantity demanded at her/his price, then participant 2 will not sell anything ($q_2 = 0$); thus, in this case participant 2 will earn zero revenue (but participant 2 would net a negative profit if she committed to produce a positive amount).
(ii) If the committed quantity of participant 1 is lower than the quantity demanded at her/his price, then participant 1 sells the committed quantity. On the other hand, participant 2 will sell her committed quantity OR the demanded quantity at the price of participant 2 that is not met by participant 1's committed quantity, i.e., $Q(p_2) - x_1$, whichever is lower.
In both subcases, the profit will be the revenue minus the cost. In other words,

$$\pi_i = p_i q_i - 40x_i$$

where q_i is the sales quantity participant i.

Case 2. If both participants choose the same price or the participant who chose the higher price decides to price-match, then the lower price becomes the market price. If the total quantity that the two participants committed is smaller than the quantity demanded at the market price, both participants will sell the committed quantities. If the total quantity

is larger than the quantity demanded, the participant with the lower committed quantity will first sell her committed quantity OR half of the quantity demanded, whichever is lower. The participant with the higher commitment will sell the rest of the quantity demanded. The profit will be the revenue minus the cost. In other words,

$$\pi_i = Pq_i - 40x_i$$

where P is the market price and q_i is the sales quantity participant i.

Notice that you may have negative profit in both cases if your committed amount is much higher than the amount you eventually sell. In such cases, the negative profit will be deducted from your overall profit including your endowment.

Payoffs

Your earnings from this experiment will be 2 Euros as a guaranteed participation payoff in addition to your earnings from the experiment. You will start the experiment with an endowment of 2,000 tokens (equivalent of 2 Euros). As described earlier your endowment may increase or decrease depending on whether you make a profit or loss during the experiment. If your final balance of tokens is negative, then you will earn only the participation payoff of 2 Euros. However, if your balance is positive then you will be paid 0.1 cents for every token in addition to the participation payoff of 2 Euros. Notice that your earnings do not depend on how much you accumulate in comparison to others, only on how much you accumulate.

To make sure that you understand how the market price and your profit are determined in the experiment, we will now provide some examples.

Examples:

Suppose participant 1 sets her price at 100, commits to produce 30 units and decides NOT to price-match. On the other hand, participant 2 sets his price at 99, commits to produce 60 units and decides to price-match. In this case, the higher price participant (in particular, participant 1 in this case) decided not to price-match. Thus, participant 2, whose price is 99, CAN sell up to the demand at 99, $Q(99) = 160 - 99 = 61$. But participant 2 committed to produce 60, so she will sell 60 earning a profit of $60 * (99 - 40) = 3,540$ tokens in this round. On the other hand, participant 1 sells zero unit because at price 100 the market demand is $Q(99) = 160 - 100 = 60$, which is equal to the quantity participant 2 committed to produce. Due to the commitment to produce 30 units, participant 1 experiences a loss of 1,200 tokens (i.e., $0 - 40 * 30 = -1200$). If the same scenario plays out for 10 rounds to both participants, participant 1 exhausts his endowment of 2,000 tokens after three rounds and will end up earning only the guaranteed 2 Euros, whereas participant 2 earns 35,400 tokens

in addition to the endowment of 2,000 tokens. The total earnings for participant 2 will be 39.4 Euro (37.4 Euros from tokens and the guaranteed 2 Euros).

Suppose participant 1 sets her price at 100, commits to produce 30 units but decides to price-match. On the other hand, participant 2 sets her price at 99, commits to produce 60 units and decides to price-match. The market price in this example is 99 because participant 1 whose price exceeds that of participant 2 decided to price-match. The total demand at 99 is $Q(99) = 160 - 99 = 61$, which is lower than the total committed amount (30+60=90). Participant 1 who committed to produce the lower amount, 30 (30¡60), will sell 30 because it is lower than half of the market demand at 99 (30.5). Participant 1 will earn a profit of $30 * (99 - 40) = 1,770$ tokens. Since 30 units are already sold, participant 2 sells only 31 units. Hence, participant 2's revenue will be 31*99=3,069 tokens. However, his cost equals 60*40=2,400 tokens because he committed to produce 60. Consequently, participant 2's profit will be $3,069 - 2400 = 669$. If the same scenario plays out for 10 rounds to both participants, participant 1 earns 17,700 tokens in addition to the endowment of 2,000 tokens. On the other hand, participant 2 will earn 6,690 tokens in addition to his endowment of 2,000 tokens.

Suppose now that participant 1 price-matches, sets its price to 100 and produces 30. On the other hand, suppose participant 2 price-matches, sets its price to 80 and produces 50. Because both participants decided to price-match, the market price is 80 - the lowest price that the participants selected. The market demand for this price is 80 units which is equal to the total committed production. Hence, both participants sell their committed production. Consequently, participant 1 sells 30 earning $30 * (80 - 40) = 1,200$ tokens. Participant 2 sells 50 units, so her profit is $50 * (80 - 40) = 2,000$ tokens. If the same scenario plays out for 10 rounds to both participants, participant 1 earns 12,000 and participant 2 earns 20,000 tokens in addition to the endowment of 2,000 tokens.

Suppose now that participant 1 price-matches, sets its price to 40 and produces 60. On the other hand, suppose participant 2 does not price-match, sets its price to 80 and produces 20. In this case, participant 1 sells 60 because the market demand at price 40 is 120. Thus, participant 1 earns $(40 - 40) * 60 = 0$. Participant 2, on the other hand, sells 20 because the market demand at 80 is 80, out of which participant 1 supplies only 60. The profit for participant 2 is $20 * (80 - 40) = 800$ tokens. If the same scenario plays out for 10 rounds to both participants, participant 1 earns only the endowment but participant 2 earns 8,000 tokens in addition to the endowment of 2,000 tokens.

Now we will start two rounds of practice to show you how to make your decisions on the computer screen.

The first screen you will see has three panels. The left part of the top panel shows the

period you are currently in. Currently, it must show that "Trial 1 of 2," so we are in the first round of two practice rounds. On the top right, you will see the time left to make your decision. The right panel called "Calculator" is a tool where you can calculate the outcomes resulting from possible decisions of you and your opponent. In this panel, you can enter various decision choices of your opponent and you and see their outcomes. This calculator is intended to help you to predict what outcomes you would get given the choices of you and your opponent. Please now try Calculator by entering some fictitious choices in it.

The larger left panel called "Decision" is where you enter your final decision in this round. Please enter your choices and press the SUBMIT button. As soon as your opponent enters her choices, the outcomes of this round should appear on the screen. If you see this screen, please proceed to the next round by clicking the OK button. Now you should have entered the second practice round. Please enter your choices and press the SUBMIT button.

Now you have finished the two practice rounds, and we are ready to start the actual experiment. Please remember that you will be randomly paired with a new opponent in every round. Please try to make your decisions within the given time. The length of the experiment depends on how long it takes for each of you to finalize your decisions. You can use your calculator as much as you want; however, please try to not go over the time limit. Also, we will provide you with a pen and a piece of paper. You can use them for your calculator or to take notes.

If you have any questions, please raise your hand. And good luck!