

# Appendix

## Instructions

You are taking part in an economic study financed by various research foundations. You have the opportunity, depending on your decisions, to earn a fair amount of money. It is therefore important that you read these instructions carefully.

These instructions are solely for your private use. **You are not allowed to communicate with the other participants during the entire study.** Should you have any questions, please ask us directly. If you violate this rule, you will be dismissed from the study and forfeit all the payments.

During the study we do not speak in terms of [national currency], but in Guilders. Thus, in a first stage, your earnings are determined in terms of Guilders. At the end of the study the total amount of Guilders you have earned are converted to [national currency]. Prior to the begin of the study the exchange rate (Guilders to [national currency]) is displayed on the screen. At the end of the study your earnings, plus 10 [national currency] to cover potential losses, are paid to you in cash.

The study is divided into 20 separate periods. You remain anonymous during the entire study. The participants are divided into groups. Suppose, for example, that your group consists of three, i.e. you and two other, participants. The composition of the groups remains the same for all 20 periods. **Hence, you are in a group with the same participants for all 20 periods.**

Each participant is the manager of a firm. All the firms in the same group produce a homogenous good and sell this in the same market. Each period, you decide **how many units of the good to produce.** The other two firms do exactly the same thing. The following rule applies: **the larger the production quantity of the firms in the same market, the lower is the market price of the good.** The unit cost of production amounts to two Guilders, and thus, the per-unit profit equals the market price minus two Guilders.

In the following pages we describe the study in detail.

## Detailed Information on the Study

At the beginning of each period each participant has to decide how many units of the good to produce. All the firms in a market face the same market demand which is

$$P = 74 - Q.$$

P is the market price and Q is the total quantity of production. For example, if your firm produces with two other firms for the same market, then Q is the sum of the production quantity of your firm and the production quantities of the two other firms.

At the beginning of each period you see the following input screen:

Period		1 out of 20	Remaining time [sec]: 108
<b>What-if calculator</b>			<b>Your decision</b>
Your quantity	Av. quantity others	Your profit	
Your production quantity			<input type="text"/>
Average production quantity of the other firms			<input type="text"/>
erase table		calculate	OK

The period number appears in the upper left corner of the screen. In the upper right corner you can see how many more seconds you have to decide on your production quantity.

In the lower left corner of the screen you can see the **“What-if calculator”**. You can use this tool to determine your profits from different combinations of your quantity and the average quantity of the other firms in the market.

You decide on your production quantity by entering a number in the input field (maximum one decimal). Once you have entered your quantity, you must click on the “OK button”. Once you have done this, you can no longer revise your decision for that period.

After all firms have made their decision, the following profit screen shows your profit. It also displays your production quantity and the average production quantity of the other firms.

Profit screen:

Period 1 out of 20	Remaining time [sec]: 56
<b>Your profit</b>	
Your production quantity ... Average production quantity of the other firms ...  Your profit ...	
<input type="button" value="continue"/>	

Your profit is determined as follows:

$$[74 - (\text{your quantity} + \text{sum of the quantities of the other firms})] * (\text{your quantity}) - 2 * (\text{your quantity})$$

The profits of the other firms in the market are determined in the same way. From the above formula it is obvious that, given your quantity, **the bigger the sum of the production quantities of the other firms in the market, the smaller your profit**. The same is true for the other firms. **The larger the quantity you choose, the smaller the profits of the other firms**. If the total production quantity exceeds 74 units of the good, then the market price is zero. You can also incur losses.

If you are done before the time is up, you can click on the “Continue button”.

Next, the information screen which shows the production quantities and profits of all firms in your market appears.

**Information screen:**

Period 1 out of 20	Remaining time [sec]: 88												
<b>Information production quantities</b>													
You receive additional 20 Guilders													
<table border="1" style="margin: auto; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 35%;">Production quantity</th><th style="width: 35%;">Profit</th></tr></thead><tbody><tr><td style="color: blue;">Your firm</td><td style="text-align: center;">...</td><td style="text-align: center;">...</td></tr><tr><td>Firm 1</td><td style="text-align: center;">...</td><td style="text-align: center;">...</td></tr><tr><td>Firm 2</td><td style="text-align: center;">...</td><td style="text-align: center;">...</td></tr></tbody></table>			Production quantity	Profit	Your firm	...	...	Firm 1	...	...	Firm 2	...	...
	Production quantity	Profit											
Your firm	...	...											
Firm 1	...	...											
Firm 2	...	...											
<input type="button" value="continue"/>													

On this screen you see the production quantity and the profit of each firm in your market. Your production quantity and your profit are always shown in the first row and are highlighted in blue, while the production quantities and profits of the other firms are listed in the rows below. You observe the production quantities and profits, however, you cannot see the identity of the other firms' managers. At this point, you receive 20 additional Guilders.

Do you have any questions?

[end of written instructions]

## Communication of the treatment variation between Standard and Random

The treatments *Standard* and *Random* differ only in the on-screen information in the control question stage. In particular, the only difference is the introduction of a sentence stating that the situation was generated randomly. The following screenshots show the information subjects had when answering the control question. The screenshots are translations because the experiment was run in German. The final screenshot in this document shows the wording for the treatment *Random*.

### Screenshot for *Standard*:

What-if calculator			Control question	
Your quantity	Av. quantity others	Your profit	Control questions serve only to check your understanding of the the central features of this study. Your answers do not influence your payment.	
			Use the What-if calculator to find the solutions.	
			Control question Please consider the following situation:	
			Your production quantity	3
			Average production quantity of the 2 other firms	0.2
			What is your profit in this situation (rounded to integer)?	<input type="text"/>
Your production quantity <input type="text"/>				
Average production quantity of the other firms <input type="text"/>				
<input type="button" value="erase table"/>			<input type="button" value="OK"/>	
<input type="button" value="calculate"/>				

**Screenshot for *Random*:**

What-if calculator		
Your quantity	Av. quantity others	Your profit
Your production quantity		<input type="text"/>
Average production quantity of the other firms		<input type="text"/>
<input type="button" value="erase table"/>		<input type="button" value="calculate"/>

Control question	
Control questions serve only to check your understanding of the the central features of this study. Your answers do not influence your payment.	
Use the What-if calculator to find the solutions.	
Control question	
Please consider the following situation: (The situation in this contol question was generated purely <b>randomly</b> .)	
Your production quantity	14
Average production quantity of the 2 other firms	15.8
What is your profit in this situation (rounded to integer)?	<input type="text"/>
<input type="button" value="OK"/>	