MICROECONOMICS THEORY AND PRACTICE

A CASE STUDY APPROACH

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Introduction

Ladies and Gentlemen,

We put in your hands a collection of case studies centered around the field of microeconomics. This publication is primarily intended to be a compendium of knowledge on practical issues in the economy and a reference to the theory of microeconomics. It covers topics such as basic economic concepts, demand and supply analysis, market, market equilibrium, consumer and producer choices, and finally market structures.

Each case study is structured as follows: title, keywords indicating the subject of the example and its relation to the theory of microeconomics, text, and control questions. It is intended to help you quickly find the exercise materials you need.

We wish you pleasant and useful reading, Aleksandra Gąsior and Tomasz Bernat



1.1. Train or Plane? Vietnamese Students' Choice

Tomasz Bernat, Vu Ngoc Xuan, Duong Cong Doanh

Keywords opportunity cost, economics decision

Ngoc, Huong and Cong are Vietnamese. They are lecturers at the National Economics University in Hanoi, Vietnam. They received a scholarship from the European Union for the Impact Program. They chose to study at the Faculty of Economics and Management, University of Szczecin in Szczecin, Poland.

Szczecin is very nice city located at the border of Poland and is near Berlin, Germany. As the hometown of the second largest seaport in Poland, Szczecin is the seventh largest city in the country. The city played an important role in the anti-communist insurgency of 1970 and the rise of Solidarity in the 1980s.

The 3 students from Vietnam (Studied in Szczecin) have planned to have several visits in prominent Polish cities as capital one. They have acquired basic information about Warsaw. Warsaw is the capital and largest city in Poland. The city is located on the Vistula River, about 370 km from the Baltic Sea coast and the Carpathian Mountains. The population in 2014 was about 1,726,581 people, and the urban population is 2,879,000. The city area is 517.24 km² and the urban area is 6100.43 km2. The city is known for its manufacturing of steel and automobiles, electrical facilities, and education, with over 60 research institutes and universities. The city has 30 theaters, including the opera house and the symphony hall. Warsaw is famous for the Warsaw Pact of the former Soviet Socialist bloc.

At first, Ngoc, Huong and Cong have a desire to go travel to Warsaw, Poland. They can go to Warsaw by train or plane. If they go by plane, the ticket costs 75 euro per person, and the travel time is approximately 1 hour. However, if they go by train, the ticket costs 31 euro per person, and the travel time is approximately 6 hours. They work as researchers and have salaries of: Ngoc's salary 3 euro/hour, Huong's salary 4 euro/hour, and Cong's salary 5 euro/hour.

Questions

1. Please compute the opportunity cost of Ngoc, Huong and Cong as table follows:

	Ngoc	Huong	Cong
Train			
Flight			

In this case, what is the opportunity cost?

- 2. Compute the opportunity cost for Ngoc, Huong and Cong.
- 3. Should Ngoc, Huong and Cong go to Warsaw by train or plane? Why?
- **4.** Are their salaries amount valid for their decision? Please justify answer.

1.2. Ronda Company's decision: shoes or shirts?

Rodica Milena Zaharia

Keywords opportunity cost, production possibilities frontier, decision

Introduction

The concept of the opportunity cost springs from the relationship that exists between the scarcity of resources and the infinity of needs. It is impossible to have all you want: any choice you make, as a consumers or producer, involves a renouncement. The cost of the choice you make defines the opportunity cost.

In a simple situation, you may have a simple choice to make. For example, as a consumer, you have to choose between buying a car and buying a house. If you choose the car, your opportunity cost is the house. If you buy the house, your opportunity cost is the car.

Similarly, for a producer, the opportunity cost reflects the producer's choice to produce product A instead product B or to have a combination between these two products. Whenever an economic agent chooses between alternatives of allocating scarce resources between product A and product B, an opportunity cost arises. The opportunity cost of such a decision is the value of the best alternative sacrificed to use the scarce resources. The higher the opportunity cost is, the less likely to do it, for example product A instead of B. The Production Possibilities Frontiers (PPF) is a model used to show the tradeoffs associated with allocating resources between the production of two goods. The PPF can be used to illustrate the concepts of scarcity, opportunity cost, efficiency or inefficiency. PPF shows all the combinations of output an economic agent produces (potential output) using all its factors of production efficiently.

The shape of the PPF depends on the opportunity costs. An increasing opportunity cost: the PPF is concave. A constant opportunity cost: the PPF is linear. A decreasing opportunity cost: the PPF is convex.

For example, suppose you split your time as a carpenter between making chairs and building tables. The PPF would show the maximum amount of either chairs or tables you could build given your current resources (in this case, time). Movement along the PPF represents the opportunity cost. That means an increase in the production of tables can be possible with a decrease in the production of chairs and vice versa.

RONDA Company

Assumption: only two goods are produced, constant costs are considered

The RONDA Company produces shoes and shirts. If the RONDA Company was to produce only shoes using all its resources efficiently it could produce 3,000 pairs of shoes in one month. Similarly, if the company produced only shirts, using all its resources efficiently, it could produce a maximum of 12,000 shirts in one month. Alternatively, the company can produce any combination of shoes and shirts along the PPF. Assuming that there are only these two products the RONDA Company produces and that there is a linear function of the production (constant opportunity costs).

- 1. What is the opportunity cost of one pair of shoes?
- 2. What is the opportunity cost of producing one shirt?
- **3.** Explain the opportunity cost of producing 3000 shoes. What about the opportunity cost of producing 12,000 shirts?
- **4.** Draw the PPF of the situation above for the RONDA Company.
- **5.** Is it possible for the RONDA Company to produce 6000 shirts and 2000 pairs of shoes under the constant opportunity cost? Explain.

1.3. Work or study? – This Is the Question!

Aleksandra Gąsior, Eyüp Akay

Keywords decision, opportunity costs, quality of life

John (J) is a graduate from your university. He was a very good student, who got the best student prize from the university. Now he is looking for a good job. His short history is presented in an interview for the students' newspaper: "Students' Letters". The reporter (R) has asked to hear his history.

- **R:** Dear John, can you tell us, how did you get to our University?
- J: Well, after secondary school, I chose to study rather than work.., After a tough discussion with my parents, I decided to apply for university. Anyway, I choose a different way. Now, after my very fruitful time at the Business Faculty, I can evaluate this in terms of opportunity cost. I have even done some financial calculations.
- **R:** Wow, so how was it?
- J: OK, I continued to study after secondary school. I went to high school, then I went to university, and I have completed my bachelor's and master's degrees. So, adding up all the time, I spent 4 years in high school, 4 years in my bachelor's and 2 years in my master's degree. In total, I have spent 6 years developing my knowledge in higher education. My education expenditures per month were about 400 euros.
- **R:** So, it was easy to calculate.
- J: Yes. In my opinion, it was better to apply for university. Why did I choose this option? Because I wanted to study and improve myself for the future. Now, I can earn a higher salary after graduation and start my career in a prestigious company and more easily become a manager.
- **R:** But you haven't mentioned anything about the opportunity costs. What are they?
- J: On one hand, if I had preferred to go to work, I suppose my salary would have been 1000 Euros per month during the time of my studies.
- **R:** Ok, but from what you said, it looks like you would have earned more from work than you have spent for studies, right?
- J: Yes, but I suppose my first salary after the studies should be at least 2000 Euros monthly. So, I will earn much more than I would have without my studies. Even more I will have a more interesting job with better career opportunities.

- **R:** Yeah, that looks nice! Upon finishing our interview, I have one last question: what do you want to say to your young colleagues who have the same dilemma: work or studying?
- J: Tell them don't worry about going to university. It's a nice time. It can be a lift to a better career!
- **R:** Thanks for your opinion.

- 1. What are the opportunity costs? Why do they exist? What is the main reason?
- 2. What is the decision and opportunity cost presented by John?
- 3. Calculate and compare:
 - a) Cost of John's studies,
 - **b**) The John's salaries he could get during the study time?
 - c) What do you think about this?
- **4.** Using the information about John's expected salary after studies, calculate whether he made the right decision. When do you think his revenues from the new job will cross the revenues from the job without studies (to calculate make the assumption that both salaries will not change over time).
- 5. In your opinion, are studies wasteful or fruitful? Justify your answer.

1.4. Rice or Tea? – This Is the Question!

Aleksandra Gąsior, Eyüp Akay

Keywords opportunity cost, decision, scarcity

Opportunity costs are the best choices that we make. A key concept that recurs in analyzing the decision-making process is the notion of opportunity cost. The full "cost" of making a specific choice includes what we give up by not making the alternative choice. The best alternative that we give up when we make a decision is called the opportunity cost. One of the most famous quotes in history is *There is no such thing as a free lunch*. This refers to the idea that it is impossible for a man to get something for nothing. Every choice you make has a next best alternative that you could have chosen but did not. From the graph point of view the costs can be presented on the Production Possibility Frontier (PPF). Let's look at the Chinese economy.

China is an Asian country, and its economy is developing rapidly. This is an economy that has the possibility to create the most powerful economic organism in the world. Not only because of the number of internal consumers and huge internal demand, but also because it has the highest level of growth in the World. The ministry of economic affairs in China wants to comprehend the most effective good to be produced. In order to succeed in their task they have conducted a survey using previous statistics. Details of the survey are mentioned in the chart below. They have chosen 2 goods as strategic ones.



Chart 1. PPF in China, production of rice and tea

In this case, China's economy basically concerns two main products: rice and tea. According to statistics, if China used all of their resources to produce rice, the maximum production would be 200 units of rice. Similarly, if China used all of their resources to produce tea, the maximum production would be 120 units of tea. According to the PPF, China has several alternative choices. If China wanted, it could produce 120 units of tea only. The decision is up to China. But if China increases the production of one commodity, it must decrease the production of another commodity because of the scarcity of resources.

- 1. What is the opportunity cost of rice production? What is the opportunity cost of tea?
- 2. What is scarcity? Can it be seen in our every-day decisions? Give examples.
- **3.** Calculate the opportunity costs for changing the production from rice to tea and vice-versa.
- **4.** What will happened if the PPF is curved and not a straight line? How does the opportunity cost change?

1.5. Shoes Factory

Aleksandra Gąsior, Aleksandra Sikora, Patrycja Sadowska

Keywords positive economics, normative economics, economics opinions

Statements, opinions expressed by people, can be decided into two types: those based on facts and those based on values dependent on one's point of view, offering how it should be. In economics, this situation is known as positive and normative economics. Generally, we can define positive economy as "what is real; objective look" and normative as "what should be; what ought to be". At first glance, it is an easy distinction to make. **Positive economics** is based on facts. It must be able to be tested and proved or disproved. This concept shows economists who rely on statistical data and facts. It describes the world as it is. Positive economics can be tested at least in theory, if not always in practice. On the other hand, **normative economics** focuses on opinion or point of view on the situation. It is subjective and value based. Let's look at an example.

The shoes factory has been struggling with a huge problem recently. The XYZ factory has been selling shoes since 1980. The company currently employs 80 employees. The total cost of wages is about \$160,000. One pair of shoes costs \$75,00. Now the company sells about 2,100 shoes per month.



Chart 1. Number of shoes sold by XYZ company in period 2015–2018

The chart shows the decreasing number of shoes sold by the company from years 2015 to 2018. Below is a segment of an interview with the company's CEO.

Yes, we have reported a large decrease in our production. This is a bad situation for us, mainly because of our opinion of the market. Rapid changes resulted in the current situation at our company. However, we see the light at the end of the tunnel now. Our employment is stable. Even in our situation, we did not have to dismiss any workers, which is good for them. We decreased the cost of production –the average one, and the result is that we are more efficient. Finally, we are still making profits, smaller and smaller, but existent. This is also good sign for us – for the future.

- **1.** Please look at the text and find examples of *normative* statements.
- 2. Please look at the text and find examples of *positive* statements.

1.6. Copenhagen Restaurant

Aleksandra Gąsior, Jakub Bojko, Jakub Brygier, Marcin Koziarz

Keywords economic choice, opportunity cost, profit

Jan Kowalski is a skilled chef who moved to Copenhagen to start his business. He opened a restaurant in the middle of Copenhagen. His father, Janusz, also runs his own business and is a wellknown businessman in Poland. Despite Jan's lack of advanced knowledge about business, he has opened a profitable restaurant. His dad wants to give him some advice in order to maximize profit. The restaurant is specialized in non-Italian pizza (thick base and a lot of ingredients) which is not so popular in Denmark. His dad thinks that if Jan would start doing massive production like Pizza Hut, he could double the income. Jan is satisfied that his business makes him a profit; it is not a big one, but it's enough to keep his restaurant running.

Some basic data

- Owner of the restaurant (Jan) borrowed from his dad 550,000 DK to buy a place for pizzeria (They agreed that son will be paying his father back 50,000 DK each year)
- He invested the equivalent of 100,000 DK in both renovation and as working capital. He has 2 employees (wages per one = 5500 DK per month).
- His own income is about 11,000 DK per month.
- Last month, the oven broke down so he had to buy a new one for 24,000 DK.
- Monthly, 10,000 DK is spent on supplies and 400 DK for water, gas and electricity.
- The restaurant earns around 34,000/35,000 DK monthly.
- In order to maximize profit, his dad a well-known businessman wants to help him improve the restaurant. Here is a conversation between them:

The dialog

- Janusz Would you let me know more about your business?
 - Jan Of course, dad. Ask me anything.
- Janusz How much are you earning monthly my son?
 - Jan About 11,000 DK per month. I know it's not much, but it's enough to keep business running, and I can live without any worries.

Janusz	You are specializing your restaurant in custom-made pizza, right?
Jan	Yes dad, that's right.
Janusz	Are there any Pizza Huts or typical mass production pizzerias in your area of work?
Jan	According to what I checked, there are some pizzerias but they don't make good quality pizza compared to custom-made pizzerias in Copenhagen.
Janusz	So for you, good quality product can't be a massive product right?
Jan	Yeah, I think so.
Janusz	When you opened the restaurant you chose Quality over Quantity. There have been many products in the world that were created thinking about this term. But do you realize that quantity can also be quality?
Jan	I think it's hard to create this product or even believe that one can be created.
Janusz	So I can tell you that products like this really exist. With your cooking skills you can easily create a product like this. I will tell you more, with a product like this you can manage to gather more customers, and there is a bigger chance that you will expand your business.
Jan	You have my attention, Dad.
Janusz	Have you ever eaten at Pizza Hut?
Jan	Of course I have.
Janusz	So you know that there are many different Pizza Huts, but the basic recipe is the same. The final product depends on the chef who is making the pizza and his skills.
Jan	Yes, but Pizza Huts in Copenhagen taste much worse than, for example, in Po- land.
Janusz	So think, what outcome will there be if you are able to create a high quality, mas- sive product like Pizza Hut in Poland?
Jan	I think the whole area would start coming over.
Janusz	So???
Jan	So I would earn much more money than before!!
Janusz	Tell me son, will you change your pizzeria to that type now?
Jan	No Dad, I love the relationship between me and my clients. Making custom pizza gives you the opportunity to change in every moment. You can always try new

things; I believe opening a massive production pizzeria would destroy the soul of my restaurant.

- **Janusz** I think it is not rational my son. You can earn more and expand as well by opening a pizzeria like Pizza Hut. Maximizing profit should be the most important thing in businessman's life!
 - Jan For me, rational means to stay with the thing that you love Dad. I love my pizzeria, and my customers love it as well. That makes me the happiest person in the world. The fact that I am not maximizing my profits, as you said, does not mean that I am not rational. I choose running my own business because I like it.
- Janusz Well that'sOK son. I just wanted to give you some advice, not argue with you. If you are happy, so am I. Janusz is smiling but also thinking. What would you do in his place?

- 1. What is more important: quantity or quality? Express your opinion.
- **2.** Do you know any examples of something that is of high quality but from massive production?
- **3.** Does "rational" always mean "profit seeking"? What do you think should be the standards of "rationality" in business decisions?
- 4. Is exploration of the area important when you think about opening your own business?
- 5. Which vision of the restaurant do you like more: Jan's or Janusz's (father). Explain why.

1.7. Should I stay or should I go? Day job versus own company

Aleksandra Gąsior, Zuzanna Sokal, Aleksandra Brzuśnian–Słowińska, Michał Howorski

Keywords opportunity cost, decisions, finance

What are the opportunity costs of opening your own company?

What is an opportunity cost? In the simplest form, it is the cost of a missed opportunity. It is something that must be given up to acquire or achieve something else. Referring to business decisions, opportunity costs might concern profit that the company could achieve from its capital, real estate or equipment if these assets had been used in different way. In this case study, we will show an example of Michael and judgement of his life decision.

Michael, who is 25 years old, is facing a career choice. In his perspective, he has a choice: on the one hand, he has the opportunity to move up the ladder in his bank and follow this kind of career path. After years he could even become a bank manager. On the other hand, he can achieve financial independence and run his dream business. His monthly salaries will depend on his engagement and his decisions. He could even become the owner of a billion-dollar company.

What would you do in Michael's situation?

Michael is a young man who just obtained a master's degree after a 5 year-course of economics at one of the best colleges in his country. During his academic life, he worked as a client adviser focused on individual and small business consumers in one of the biggest banks in his country. He worked in this position for 3 years, and most of the clients really appreciated his sacrifice at work. After many successful transactions, he was offered a promotion, afterwards he was responsible only for contracts with big companies, and his salary increased. During his job and university career, he gained a lot of experience and knowledge about business and interpersonal relations. In addition to work and school, he attended many different courses about opening a new company. After graduation, he realized that because of his work he had saved some money. After a few sleepless nights, he calculated that with help from the bank in the form of a loan, he would be able to open his own business – a car wash. He knows that such a project will require more time and involvement from him than ordinary day-job. Now he is facing the biggest decision in youngman's life. He must consider whether to stay in his current, stable job or to gain new experience. His previous experience allowed him to what a day-job looks like. It showed him some of the advantages of a day job. One of which is the regular salary and limited work time. Other positive aspects are the lack of worry concerning bill payments and the structured work day and week.

Day-jobs also have some disadvantages such as little chances of salary increase related to involvement at work. This means that even if Michael worked harder and harder, his salary would not change from month to month. He also would not have the opportunity to go on holiday whenever he wanted. His vacation would be strictly limited to a few days in a year. Michael is not sure if a regular job is something that he wants to do for the rest of his life. He considers taking a loan, which in combination with his savings enable him to start his own business – a car wash, his dream job since he was in high school. He learned about running own company from courses during college, so has the base to take the challenge.

Big moment

After many hours of thinking, analyzing and calculating, Michael decided to follow his dreams and start a company. He found a place where competition is limited to minimum and where there are a lot of potential clients. He thought that this combination would be perfect to start his own company.

Opinion 1. Budget of Michael's company, after he took out a loan:

- Savings: 15 000 PLN
- Loan: 20 000 PLN

Opinion 2. Future career in bank:

• Salary after promotion per month: 3000 PLN

Opinion 3. Michael stayed in his job for a year and earned enough money to start a company without taking a loan:

• If Michael takes the promotion and works for a whole year, will hebe able to run his own company with his own money?

If you were in Michael's position, would you wait and stay at the bank or open the car wash?

The cost of car wash

- **1.** For the beginning:
 - machines: 15 000 PLN

Total cost during first month: 26 000 PLN

- **2.** Monthly:
 - rental: 2 800 PLN
 - electricity: 150 PLN
 - water: 100 PLN
 - fuel: 500 PLN
 - accounting: 150 PLN
 - taxes: 650 PLN
 - wages of two workers: 6000 PLN
 - loan: 650 PLN

Total cost monthly: 11 000 PLN

Revenues (planed):

- First month: 7 000 PLN
- Second month: 9 000 PLN
- Third month: 9 000 PLN
- Fourth month: 10 000 PLN
- Fifth month: 11 000 PLN

Then there was a rising tendency in revenues, which stabilized after 6 months at about 15 000 PLN per month.

- 1. Which option is better financially after 5 years? (assuming that his salary at the bank wouldn't increase and his earnings in the car wash wouldn't change)
- **2.** From your point of view, what is more important (based on the case): work for somebody's success or create your own success?
- 3. What does this case show about opportunity costs?

1.8. Hurricane Sandy and gas shortages

Lucian Belascu

Keywords market forces, scarcity, opportunity cost, government action

Introduction:

Opportunity costs are found in all aspects of life and understanding them is crucial for gauging how society reacts to scarcity. From an economic perspective, when goods and/or services are scarce, they have to be rationed one way or another, so that, in the end, who gets what or what quantity is determined¹. The rationing mechanisms are necessary reactions to scarcity and are examples of economic forces that operate in any society. When there is a shortage, prices go up, and when there is a surplus prices go down – this is how market forces intervene when they are allowed to operate freely, i.e. there is a price reaction to a difference between demand and supply. Although economic forces are always in operation, societies may choose whether they allow for this free operation or guide individual actions through social or political forces, i.e. through actions that may not be in an individual's interest or through legal decisions. Each country's or even smaller division's reality is a result of the trade-offs that are made between these three types of forces. This case study explores the interaction between economic and political forces in the aftermath of the Hurricane Sandy, the second-costliest hurricane in the United States' history (after Hurricane Katrina in 2005).

Case study – Hurricane Sandy, gas shortages and economic versus political forces

The Caribbean Sea is an area particularly prone to hurricane formation, due to the high levels of humidity and warm air that produce almost perfect conditions for hurricanes². A hurricane is a tropical cyclone with winds of at least 100 km per hour that last at least one minute, created when the warm water hits the troposphere and the warm and dry air is pushed down in the center. The most famous hurricanes that have been formed in the region were The Great Hurricane (1780), San Ciriaco (1899), Gilbert (1988), Sandy (2012), Joaquin (2015) and Irma (2017)³.

¹ Collander, D.C. (2020) *Microeconomics*, 11th edition, McGraw-Hill Education

² Schwartz, S.B. (2015). Sea of Storms: A History of Hurricanes in the Greater Caribbean from Columbus to Katrina, Princeton University Press

³ Hurricanes in history, National Hurricane Center and Central Pactific Hurricane Center, <u>https://www.nhc</u>...noaa.gov/outreach/history/

Hurricane Sandy started as a storm in the Caribbean Sea on October 22, 2012 and hit Cuba on October 25, after being classified as a category 3 hurricane. After Cuba, the hurricane caused huge damage in Jamaica, Haiti and the Dominican Republic. The Eastern Coast of the United States was hit on October 29, and the most destruction occurred in New Jersey and New York. The hurricane damaged or destroyed more than 650,000 homes, triggered power outages for 8 million customers (including hospitalized people) and killed 72 people directly, while another 87 deaths were the result of hypothermia caused by power outages, carbon monoxide inhalation and accidents during the cleanup⁴.

Somehow unexpected by anybody, gasoline shortages appeared, fueled by power failures at gas stations – in New York City only about 35% to 40% of the stations were operating a week after the hurricane -, supply chain disruptions and long lines of cars and even pedestrians⁵. Many remembered the same lines formed during the oil crisis in the 1970s, the consequence of the OPEC oil embargo⁶.

Responses to the gasoline shortage

The reactions to the gasoline shortage and the seemingly never-ending lines were diverse and ranged between conformity, anger and, in the end, rationing. On one hand, there were citizens that complied with the situation and argued that not having gasoline was far less troubling than having lost your home as a result of the hurricane. On the other hand, there were reports of people pulling guns in the gasoline lines, such as a motorist in Queens (a neighborhood of New York) that tried to cut a line and pointed a pistol at someone else that complained⁷. At the same time, many tried to find ways to overcome the difficulties, for example by paying others to stay in line for them or by trying to reach gas stations in further locations where rumors indicated the lines were shorter.

Reports on gas prices hikes were everywhere. In New York state, prices rose by an average of 3.4% per gallon in the week after the hurricane, and in New York City the gas prices gained 9.4 US cents per gallon. A similar situation was noticeable in New Jersey and Newark, where the price for a gallon of gas increased on average by 6.8 US cents and 11.2 US cents, respectively. Figure 1 compares the after-hurricane prices of gas per gallon to the price at the end of 2011 in New Jersey.

⁴ Amadeo, K. *Hurricane Sandy Facts, Damage and Economic Impact*, The Balance, 25.06.2019 (updated), https://www.thebalance.com/hurricane-sandy-damage-facts-3305501

⁵ Smith, A. *Gas shortage continues in areas hit by Sandy*, CNN Business, 2.11.2012, <u>https://money.cnn.com/2012/11/02/news/economy/gas-shortage-sandy/index.html</u>

⁶ Myre, G. *Gas Lines Evoke Memories of Oil Crises In The 1970s*, National Public Radio, 10.11.2012, <u>https://www.npr.org/sections/pictureshow/2012/11/10/164792293/gas-lines-evoke-memories-oil-crises-in-the-1970s?t=1580811099366</u>

⁷ AP, *NYC man accused of pulling gun in gas line*, USA Today, 2.11.2012, <u>https://eu.usatoday.com/story/ne</u>ws/nation/2012/11/02/nyc-man-accused-of-pulling-gun-in-gas-line/1676745/



Source: Kahn, C. How Superstorm Sandy affects gas prices, <u>Bankrate.com</u>, 6.11.2012, <u>https://</u> finance.yahoo.com/news/superstorm-sandy-affects-gas-prices-080104802.html

But, interestingly, not everybody was upset with price increases, since the direct consequence of all this was the creation of a gray market, even as lines shrank – posts on Craiglists, a classified advertisements website with sections devoted to jobs, housing, sales, services, community service, etc. listed prices for delivery of five-gallon containers ranging between \$30 to \$100. For example, a 28-years old New Yorker that was selling gas on Craiglists at a price of 18\$ per gallon said that people were appreciative for getting gas and that he is just charging for delivery. Thus, he was making between \$250 to \$300 a day, mostly from people that did not have time to wait in line⁸.

Gasoline rationing

Authorities' reaction to gasoline shortages came only on November 9, when motorists were forced to stay in line only if they had the "correct" plate number – gas was sold to cars with odd number ending plates on odd-numbered days and to cars with even number ending plates on evennumbered days⁹. Mayor Michael Bloomberg told a press conference that "This is designed to let everybody have a fair chance, so the lines aren't too oppressive and so everybody can get through this"¹⁰. The gasoline rationing was the first in New York since the 1970s oil crisis and resulted

⁸ O'Toole, J. *Gas sells on Craigslist post-Sandy, at a price*, CNN Business, 5.11.2012, <u>https://money.cnn.com/2012/11/05/news/economy/craigslist-gas-sandy/</u>

⁹ The Associated Press, Even-odd gas rationing begins in New York after Hurricane Sandy, 9.11.2012, <u>https://www.denverpost.com/2012/11/09/even-odd-gas-rationing-begins-in-new-york-after-hurricane-sandy/</u>

¹⁰ Gabbatt, A., *New York to ration gas to reduce waiting lines for fuel*, The Guardian, 8.11.2012, <u>https://www.th</u>eguardian.com/world/2012/nov/08/new-york-ration-gas

in shorting the lines and waiting times¹¹. There were also business analysts that considered that an earlier rationing might have helped in New York City, since the New York – New Jersey area had fewer stations per capita than any other major US metropolitan area, given its dense population¹².

Allegations for price gouging and fines

Authorities were not happy with the wave of price increases after the hurricane. Since many American states have laws that prohibit such practices during natural disasters or other market disruption events, New Jersey and New York attorney generals announced investigations into price overcharging and were pointing towards the companies that had illegally risen the prices for essential items such as shelter and fuel¹³. John H. Hoffman, attorney general for the State of New Jersey at the time, warned that "We simply will not allow business to victimize vulnerable residents, who are already suffering hardships during a declared state of emergency"¹⁴. In May 2013 it was publicized that several gas stations agreed on paying fines of \$168,750 for price hikes after the hurricane, and the New York general attorney also announced that he would sue more companies accused of participating in one of the biggest gas price increases in the state's history¹⁵.

Not only businesses were accused by the authorities, but also individuals that were selling gas at an alleged higher price – for example, a firefighter from East Orange was accused of transporting 290 gallons of gasoline in the back of his truck into town in the wake of hurricane Sandy and created a risk of widespread damage by recklessly handling the gasoline¹⁶. Still, he was acquitted and reinstated to his job in 2015¹⁷.

¹¹ Harris, A. *A Slow Return to Normal Skips the Gas Station*, The New York Times, 3.11.2012, <u>https://www.ny</u> times.com/2012/11/04/nyregion/gas-rationing-is-new-burden-after-hurricane-sandy.html

¹² Fitzgerald, J. *Gas rationing, shortage fray nerves in NYC*, Komonews, 11.2012, <u>https://komonews.com/news/nation-world/gas-rationing-shortage-fray-nerves-in-nyc-11-21-2015</u>

¹³ Staff Reports, *Gas shortages lead to gray market even as lines shrink*, NBC News, 6.11.2012, <u>https://www.nb cnews.com/business/business-news/gas-shortages-lead-gray-market-even-lines-shrink-flna1C688 3461</u>

¹⁴ The State of New Jersey, Department of Law & Public Safety, Office of the Attorney General, *New Jersey Division of Consumer Affairs Announces Settlement of Superstorm Sandy Price-Gouging Complaints*, 23.02.2013, https://nj.gov/oag/newsreleases13/pr20130723a.html

^{15 ***,} New York cracks down on gas price gouging after Hurricane Sandy, 3.03.2013, <u>https://abc7ny.com/arch</u> ive/9087737/

¹⁶ Kilroy, C. and Patch Staff, '*Large Gasoline Bomb*' *Brought Into East Orange By Firefighter After Hurricane Sandy*, Patch.com, 21.12.2014, https://patch.com/new-jersey/westorange/large-gasoline-bomb-brou ght-east-orange-firefighter-after-hurricane-sandy-0

Wichert, B., East Orange firefighter reinstated to job after acquittal in 'gasoline bomb' case, <u>www.nj.com</u>, 06.03.2015 (updated on 29.03.2019), <u>https://www.nj.com/essex/2015/03/east_orange_firefighter_reins_tated_to_job_after_ac.html</u>

Questions

- 1. Was the gas shortage in the Hurricane Sandy case an issue of supply or demand?
- 2. Identify various types of people affected by the gas shortage and state what their options were after the hurricane in the case of
 - **a)** No price ceiling
 - **b**) Price ceiling
- 3. What was the result of lines extending for miles?
- **4.** Analyze the responses to the gas shortages (price ceilings and gas rationing). Do you think they achieved their objectives?
- **5.** If you were in the shoes of the affected states' authorities, would you have taken the same measures?

Useful links

- https://secure.fia.org/downloads/Industry-Impact-and-Lessons-Learned-From-Hur ricane-Sandy_Summary-Report.pdf
- https://www.livescience.com/40774-hurricane-sandy-s-impact-infographic.html
- https://www.nationalgeographic.com/environment/natural-disasters/reference/hur ricane-sandy/



2.1. Electrifying elasticity

Tomasz Bernat, Vu Ngoc Xuan, Duong Cong Doanh

Keywords demand, elasticity, price elasticity

Theoretical consideration

To estimate the demand function for electricity in Vietnam, we must first consider the demand function of Alfred Marshall that any product on the market will have the form:

Qx = f(Px, Py, I, N, T, E,...)

where: Qx – the quantity demanded for goods X; Px – the price of commodity X Py – the price of the substitute or complement; I – income of consumers

N – the number of consumers; T – tastes and preferences of consumers E – the expectation of consumers.

Of course, there are some basic factors that influence the quantity demanded of a specific commodity. In fact, there may be some other factors affecting demand that we have not listed as advertisement or credit incentives or policies of the government.

Vietnamese electricity market

Since there is no link between the world price of crude oil and electricity prices in Vietnam, the construction of the electricity demand function, specifically the variable crude oil, was removed from this analysis. Customers of electricity in Vietnam have no choice but to buy electricity directly from EVN. This attempts to also remove variables as preferences and expectations from the construction of electricity demand functions in Vietnam. In summary, the electricity demand function in Vietnam are based on the following:

$$Qe = f(Pe, I, N, t...)$$

where: Qe – electricity demanded quantity; Pe – electricity price; I – income;

N – population; t – time (year). In most cases, in order to simplify we often build linear functions to facilitate the analysis. From Jan 1995- Dec 2017, 276 data samples were collected from various sources to describe the quantity demanded for electricity in Vietnam. In general, the price of electricity is related to crude oil (Pg) or petroleum products. Crude oil is an important input in gas power plants In addition to products such as gasoline from crude oil may be needed for electricity generators to run when a sudden power loss or crash. Anyway, the effective monitoring of changes in the world price of crude oil and electricity prices in Vietnam shows that electricity prices in the country did not fluctuate with changes in oil prices during the past 23 years (1995–2017). In summary, the electricity demand function of electricity in Vietnam is as follow:

Qe = 469,5 + 19,4I - 7,258N - 0,037Pe + 6,637t

where:

Qe - Electricity Quantity demanded (billion kWh);N - Vietnam Population (million);I - Vietnam Income to Power Purchasing Parity (Million VND/capita/month);Pe - Vietnam Electricity Average Price (VND/kwh);t - time (number of months).

Results of the calculation give us something to rethink: the relationship between the average price and the demand for electricity in Vietnam is proportional. That is the price of electricity in Vietnam increased steadily over the past 20 years with the growth in electricity demand and steady growth of the economy. This is contrary to the law of demand in the market economy. This result reflects how the Vietnamese power sector during the recent period has been exclusive. The electricity sector in Vietnam is now the sole monopoly sector, and it remains high; the monopoly power of EVN is now very large.

How will the future look? If this does not change, EVN will continue to increase the price along with the increase in demand in Vietnam over the next years. Based on the demand function for electricity in Vietnam, we see monopoly power in this market. The question is whether the Vietnamese government needs to look into the facts and quickly liberalize the electricity sector. The abolition of monopolies will contribute to the growth of the economy.

- Calculate the Vietnam electricity quantity demanded in 2018 if I= 11.89 million VND; N= 96 million; Pe= 2400 VND; t= 288
- 2. Calculate the price elasticity of demand, income elasticity of demand, population elasticity of demand, and time elasticity of demand?
- 3. Analyze the effects of price in Vietnam electricity quantity demanded elasticity.
- 4. Analyze the effects of income in Vietnam electricity quantity demanded elasticity.
- 5. Analyze the effects of population in Vietnam electricity quantity demanded elasticity.

2.2. China Automobile Market

Aleksandra Gąsior, Mingjia Qi, Weidi Pan

Keywords market, equilibrium, market gap, determinants, supply, demand

The automotive industry in China has been the largest in the world measured by automobile unit production since 2008. Since 2009, annual production of automobiles in China exceeds that of the European Union or the combined production of both the United States and Japan. However, China's automobile industry had small volumes for the first 30 years of the Republic, not exceeding 100–200 thousands per year.

Before the Chinese economic reform, which was the policy of internal reform and external opening that China began to implement in December 1978, China still implemented a planned economic system. China tried to explore the road of developing the automobile industry from scratch. During this period, China had basically built a framework for the automotive industry system, and ended the history of not being able to produce cars. Yet there were also many institutional problems in China, which seriously constrained the development of the early automobile industry. From this, a phenomenon appeared. Ordinary people before 1978 in China had to pay a very high price to buy a car, but the quality of the car was poor.

Chinese economic reform has greatly promoted the development of China's automobile industry. As China began to reform, it entered the peak period of automobile industry development. The transformation of the planned system into the market economic system allowed the enterprise to become an independent business entity and gradually become the core force of the market economy development. But at the beginning of the reform, there was a strange phenomenon: people had the chance to buy a car. It was expensive, and not many were afford to buy one.

The county's automobile production costs were high and the quantity of production was low. This led to a shift in the supply curve, which caused another one to form. This shift is presented in Chart 1.



Chart 1. The shift of supply curve

As a result, a new supply and demand balance point was created. However, this was not the biggest problem. The biggest problem was "total purchase and marketing," that is, China's government used administrative decisions to eliminate market factors at the time and pushed prices down as much as possible. For both the national development and the people's livelihood, a large number of vehicles was in need of purchasing. Therefore, artificially lowering the market price and squeezing the profitability of enterprises have made it possible to maintain the normal operation of the company while promoting production as much as possible.

This was the only way to meet the conditions of the country at the time, but this also created the following new supply-demand relationship, which is presented in chart 2.



Chart 2. Government Administrate Means

On the one hand, artificially lower prices led to an increase in the number of people who can accept this price and buy a car. On the other hand, companies did not earn more profits to accumulate capital and stimulate production. Therefore, the demand and the actual supply provided a gap.

To regulate supply and demand in the supply-demand gap presented in chart 2, the market required a "visible hand", or in other words, the use of government power to regulate the market. In the case of the demand of , the government stimulated priority groups to accept the supply to fill the gap between supply and demand for . This led to the situation that "only domestic cars of that era were available. Anyway, the autos were poor quality and expensive, but also they could not be bought easily."

After the reform and opening up of the market, various joint-venture vehicles and imported vehicles entered the mainland market. The production volume of automobiles increased and the cost decreased. The Chinese government no longer artificially reduced the price of the market cars. The supply curve continued to increase, so the market gap gradually disappeared, and gradually returned to , and the price of the supply and demand balance point continued to drop. So, buying a car became easier and easier.

However, another problem arose. Due to the "wrong" understanding of the protection of domestic cars and the purchase of private cars, the taxation of consumers became an inevitable choice. In turn, it led to the following supply and demand relationship, as in chart 3.



Chart 3. The shift of demand curve

After taxation of consumers, consumer spending power fell, causing the demand curve to fall, which created a new demand curve and a constant supply curve form a new supply-demand balance . We can see that the amount of money received by companies reduced and the profitability of joint-venture cars and imported cars on the mainland were reduced. On the other hand, consumers' ability to purchase cars was also reduced.

- **1.** Define the most important factors of demand and supply in the Chinese market. How do they work?
- 2. How will the political decision affect the market present your opinion based on the case study.
- **3.** Before 1978 in China, why did ordinary people have to pay high prices to buy a car, but the quality of the car was poor?
- **4.** At the beginning of the reform and opening up of the market, people had the chance to buy a car, but why did it cost so much?

2.3. Mobility Package – where are you going Europe?

Tomasz Szatkowski

Keywords demand, supply, determinants, equilibrium, changed of equilibrium

In April 2019, the European Parliament (EP) voted on the Mobility Package. The regulations were accepted by most politicians. For Polish haulers it could mean a lot of problems. "We are moving back for 20 years and the common services market will be liquidated," say entrepreneurs.

The Mobility Package adopted by the EP is a set of rules to regulate international road transport in the countries of the community. It covers three important areas of the transport sector:

- principles of posting employees,
- driving time, breaks and rests,
- access to the transport market (so-called cabotage, i.e. loading and unloading of goods in the same country).

The voted mobility package includes the rules of posting employees. The driver should be provided with a minimum salary in accordance with the regulations of the country in which he is staying. The main idea of the directive is to equalize the conditions of pay and work of employees posted with local employees (for example Polish vs German drivers). EU Member States The "Old Union" in this way (increasing the minimal working hour amount) reacted to the displacement of local transport companies by carriers from Eastern Europe (especially from Poland). They decided that companies from Eastern Europe use social dumping, through lower labor costs and lower social benefits. This means Polish drivers delegated to Germany must earn as much as a German driver The eastern hauler associates say that international drivers cannot be under the regulation as it causes a substantial administrative and financial burden for entrepreneurs. The character of the driver's professional work consists precisely in staying in short periods in many countries. If carriers must administer and pay different wages for the time truckers spend in different countries, their costs are going to grow so high that they lose their competitiveness. This regulation looks to be especially difficult for small companies that do not have knowledgeable staff to fulfil these administrative requirements.

The changes also affected the breaks and rests of the drivers outside the country in which his company's seat is located. According to the proposed rules, drivers would have to spend their weekly rest outside the truck cabin, leaving their cargo unattended and at risk on the open road. Entrepreneurs believe that there needs to be more adapted and secure parking spaces for heavy goods vehicles. According to a study conducted by the VEDA (German Association of Highway Inn Managers), Germany needs 31,000 special parking spaces for trucks. The Mobility Package also introduces changes to the time that the driver can stay outside the country in which his company is based. Previously, there were no time limits. The proposed provisions limit it to a maximum of 4 weeks. The last transport sector that has been voted on by the EP is access to markets, and in particular to those covered by cabotage. The proposed provisions are to change the rules and possibilities of free provision of services to companies from other then local countries. Parliament adopted a position limiting cabotage transport to 3 days. The next transport will be possible after 60 hours break and return of the truck to the country where the transport company is located. The cross-trade transports are also included in the Mobility Package i.e. from Germany to France.

The Mobility Package hinders the freedom of free competition and freedom on the markets of member countries of the European Union. The situation on the transport market can even be worse. The new directives will particularly affect companies from Eastern Europe. Currently, 250,000 lorries from Poland run in Western Europe, including 300,000 Polish drivers. If the regulations will be implemented without any amendments, the Polish transport companies will be threatened with bankruptcy. The package will entail an increase in the cost of exporting goods from Poland, over 80% of which are sent to European Union markets by road transport. The new regulations for posted workers, pushed through most EU countries, will not only affect transport companies themselves, but also the entire EU economy, the European employees and the consumers. The consumers will not only have a smaller selection of goods in the shops, but will also have to pay more for it.

- 1. Will the new regulations developed by the EP affect the situation of Polish transport companies? How does it affect demand and supply of the transportation market in Poland and Europe as a whole?
- 2. Can the Mobility Package affect the access or change of commodity prices in Western Europe? Present this situation using the chart of market equilibrium.
- **3.** How can Polish transport companies cope with the proposed provisions of the Mobility Package? (to open a company, e.g. in Germany?).
- **4.** Will the proposed directives affect the freedom of competition and freedom of access to European markets for all EU members? Justify your answer.
- 5. Who will benefit the most from the Mobility Package?
2.4. Gordon Gekko still in real estate

Jakub Warzecha

Keywords market, demand, supply, determinants, equilibrium

It's now been more than 10 years since the 2008 global crisis. All of us know that the biggest issue from that time was the greed of real estate developers. We know why the crisis happened, and what we should do to prevent the same situation in the future. Unfortunately, "greed is good" and after 10 years, history is repeating itself.

It was 2000 and 2001 dot-com boom" and "09/11" after this, the US government decided to reduce interest rates to a staggering 2%. The same thing happened in many countries in Europe. After this we all know what happened. In short – Gordon Gekko has stepped into every investor's mind. Everyone learned how to count money and how to become richer than their neighbor. Banks didn't need or want any document from you to decide whether you can buy or afford the mortgage rate. If you already had your own flat or home you could easily buy another one or even 2 with a high risk mortgage.

The interest rates are low but you never know what will happen in the next year or two. And that what is the major problem – no one asked for insurance mortgage. Why? Because "you know, real estate always growing" and even if 2% interest rates will grow, you will be easily can put higher price on the market to sale or rent, to minimize loses. Even bank workers didn't inform clients about risk and possibility to use some tools to prevent higher interest rates. Everyone believed in strong economy. Unfortunately that wasn't happened. After 5 years of booming, economy slowed down. Everybody who needed home actually was having a home and the new "businessman or investors" has started to panic and have been asking himself "why I can't sell this beautiful house?". Banks have started to panic and have been asking "why my super client didn't pay the mortgage into beautiful wraps package (outside good mortgage insides bad) and sell it to the investment bank like Lehman Brother, after this the investment bank leverage the possible profit from mortgage in 1 to 20 or 50 and sell it to the hedge fund. After this market movements, all people has knew what happened and why it have not worked in next two years.

Now it is 2019. Every government has special tools and power to stop some incorrect actions working on the market, especially in the banking area. Take for example the Polish story about the Amber Gold company – the financial pyramid fraud, with over 850 millions of PLN and over 19.000 harmed people. But, can we be absolutely sure the prevention is more popular than greed and taking money from uninformed people? Take a look at some data from just one country like Poland, but we can believe it could have happened in all western countries also in China.

How many families live in Poland? Eurostat tells us that at the end of 2017, there were 14.5 million households (single, pair and families with children). How many flat, apartments and houses are in Poland? In 2017, the Polish Central Statistical Office (GUS) gave us information about 14.4 mil-

lion. So, 2 years ago we almost had the same number of householders and real estate. From more than 5 years we have been having a real estate boom on the market. Prices have been exploding in higher levels than before the 2008 crisis. For example, in the city of Szczecin in 2013 you would have paid \$1000 for one m². Now, after 5 years, it is more than \$1600 for one m².

What happens when we build more houses and flats than we need? It seems that a big market bubble is created. Why are we so skeptical about this market? Because we have to remember the previous data like the chart below:



Source: Główny Urząd Statystyczny and Eurostat.

The blue line shows the amount of real estate (dwellings) in Poland. The grey line shows the number of households living in Poland.

Part of the interview with an investor in real estate market:

- **R:** How would you assess the situation in the Polish market?
- I: We have already had the situation where the number of households in Poland was larger than the amount of real estate. It was in 2009. Someone will say "hey it was after the 2008 crisis!" I would say yes, but you need to remember that the Polish market reacted slower after the crisis in the US. Why is a bigger demand than supply so bad for this market? It's easy to solve this. It's because we have come back to cheap, easy-to-get mortgages, and at the same time, we have the same monthly income. Tell me how it is possible to have 14.5 million flats and houses and still have orders for new ones on the market where the population is the same or even lower than in 2011, where amount of real estate was 13.5 million and was bigger than the demand for about half a million?
- **R:** Do you think the 2008 crisis will come to reality again?

- I: I think it's possible to have the same story as we had in 2008. The government has tools to prevent the situation, but they are doing absolutely nothing, they are waiting, and telling this beautiful story about our growing GDP, and they still give us the lowest interest rates. And what we are doing? Are we buying new flats and destroying old ones? No. We are renting them! For long and short term rent. It is wrong? No. But when it goes under any control, you can see some buildings in new settlements where more than 50% of flats are free, not because they are not sold, but just because the "real estate market always grows up" and with this slogan and thankfully a cheap mortgage, all of us want to be Gordon Gekko. We just don't remember that he (in the movie) makes his profit on somebody's money (like we taking credit) but without any losses.
- **R:** Do you think banks have the same credit politics as before?
- I: Thankfully some banks today don't want to risk their money like they did from 2001–2008, and if they have some clients they are between saying "yes or no" to on a mortgage, they decide to order insurance for the credit from clients to prevent any losses. That's why I think another crisis will be slightly different than the 2008 crisis. It will not start from the banking sector but from the real estate developers' market. The housing market is only an a example. The same thing happens in the office space market. It happens in Poland, the whole EU, North America and Asia, especially in China where whole cities are built, and sold, but uninhabited. How will it start? Short term rent flats will dramatically lower prices. The same thing will happen with premium A+ rental office spaces. After this, real estate developers' work, they will start to shoot down projects and after this, their companies.
- **R:** How does the future look?
- I: Will the next crisis be bigger than in 2008? I'm not sure, but I think it will hurt more small businessman than bigger companies. Probably losses on the market will be lower than 2008 but only on a cash basis. The worst scenario? So many people will have problems with monthly payments that insurance companies will announce bankruptcy. This scenario will take banks down, and then we will be talking about the biggest crisis in history.

- 1. Is this case study related to market equilibrium? If so, in which part?
- 2. What are the determinants of demand and supply mentioned in text?
- 3. Is the real estate market under equilibrium?
- **4.** What changes the equilibrium? What are the forecasted prices and quantities of new the equilibrium?
- 5. What we should do to prevent another crisis?
- 6. Which is better to invest in: a new or used flat/house? Please justify your answer.
- 7. In which country and continent is it best to invest money in the real estate market?

2.5. Price elasticity of demand for cigarettes and public policies. Are smokers so addicted?

Gabriel Staicu

Keywords price elasticity of demand, inelastic demand, government policies, taxation, tax revenues

Introduction

A famous joke says that there are (at least) two certainties in life. Firstly, and sadly at the same time, you will die. The second, you will pay taxes till you die. Leaving aside this joke, which is true indeed, we must admit that the role of the government in the modern world tends to be more and more complex. Since "there is no free lunch", the government uses taxation as a mean to finance its spending with hospitals, schools, pensions etc. Indeed, in developed countries, the total government expenditures could reach 40% of GDP or even more. Therefore, fiscal policy plays an important role to keep the public budget away from large deficits.

Case study

Smoking is bad for your health, but, at the same time, is bad for others (nearby non-smokers)! In order to reduce the health risk associated with smoking and also the negative impact on bystanders (known as negative externality in economic literature), the government would like to reduce the consumption of cigarettes by 10%. The initial price for a pack of cigarettes is 20 PLN. According to recent research findings, price elasticity of demand for cigarettes is 0.2, which denotes that individuals are not price sensitive. And this might be true since most of the smokers are addicted and their purchasing behavior doesn't change much when price changes.

- 1. What is the new price level of a pack of cigarettes that should be imposed by the government in order to meet its objective? Does the tax revenue increase or decrease if this policy is implemented?
- 2. Now, suppose that the government is planning to permanently increase the price for cigarettes. Would you expect a continuing increase in tax revenues? Explain.
- **3.** Analyzing the research studies mentioned above, you find that teenagers tend to have a higher price elasticity that adults have. Why might this be true? Before answering, take into consideration the availability of cigarettes' substitutes (such as self-made cigarettes, electronic devices etc.) and the differences in disposable income of the two population segments.

2.6. Elasticity is cool!

Razvan Zaharia

Keywords **Demand, Supply, Price, Income, Elasticity, Cross elasticity, Substitute** goods, Complementary goods, Business Decision.

Introduction

Demand and supply are fundamental concepts of economics.

Demand is the expression of needs. In general terms, demand represents the quantity of goods and services bought by a person (consumer or producer), during a specific period of time, at a certain price. Supply is the expression of production. As a general definition, the supply is the quantity of goods and services sold during a period of time, at a certain price.

Demand and supply vary under the influence of diverse factors, as price, income, or other factors. The variation of demand and supply under the influence of those factors express the elasticity of demand and supply.

In general, the most analyzed elasticity is related to price. If the rest of the influencing factors are considered constant, price elasticity of demand measures the degree of the responsiveness of the quantity demanded of a commodity to change in its price. Similarly, price elasticity of supply measures the degree of responsiveness of the quantity supplied of a commodity to change in its price. Usually, the demand changes in an opposite way to the price: when price increases, the demand decreases, when price decreases, demand increases. In a similar way, the most common evolution of the supply is in the similar direction to the price: when price increase, the supply increases also. When price decreases, supply decreases, too.

Elasticity is very important for production decisions. Knowing the product elasticity helps you, as a business person, to know how much to supply and what kind of decisions you have to make regarding the price strategy. There are different ranges of price elasticities, depending on whether a 1% change in price elicits more or less than a 1% change in quantity demanded. If the price elasticity of demand is greater than one, we call this a price-elastic demand. Unitary price elasticity of demand means that a 1% change in price causes a response of exactly 1% change in the quantity demanded. Price-inelastic demand corresponds to the situation when a 1% change in price causes a response of less than 1% change in quantity demanded. As a producer, you have to know the demand elasticity when you decide to increase or to reduce the quantity supplied.

The cross elasticity of demand measures the responsiveness in the quantity demanded of one good when the price for another good changes. Also called cross-price elasticity of demand, this

measurement is calculated by taking the percent change in the quantity demanded of one good and dividing it by the percent change in the price of the other good.

Substitute goods or substitutes are at least two products that could be used for the same purpose by the same consumers. If the price of one of the products rises or falls, then demand for the substitute goods or substitute good (if there is just one other) is likely to increase or decline. The other products – the substitutes – have a positive cross-elasticity of demand. Complementary goods are goods whose appeal increases with the popularity of their complement. Technically, these goods display a negative cross elastic of demand, and that demand for these goods increases when the price of another good decreases.

Case #1 : Adam's business dream: a special coffee shop in his town

Adam Glowick is an enthusiastic young man who has a dream to open his own coffee shop in his town. Last summer he visited Brazil. During his stay in Brazil, he met an old friend who moved to Rio de Janeiro and started a business in the coffee domain there. Adam loves coffee. The smell of the coffee sends him in an imaginary world, with stories, amazing places and extraordinary people. He has in his mind a business dream: to start a coffee shop in his town, where the best coffee is sold, and each type of coffee is accompanied by a story that you will discover when you buy the coffee. Meeting this old friend is considered by Adam a sign to follow his dream. Brazilian coffee is considered among the best in the world. His friend is active in the coffee business, so he has two of the most important ingredients for a good business start. He started to discuss his business dream with his friend, and his friend was enthusiastic. They started to develop a plan, and Adam returned home eager to start the business.

Questions #1

Consider Adam's situation, keeping in mind the importance of the demand and supply elasticity:

- 1. Explain to Adam what kind of information he needs to take into account for his business from the demand and supply point of view. Does Adam need to know what kind of demand characterizes coffee? Why?
- 2. Except the price, what other important factors do you think Adam has to consider when he plans his business? Why?
- **3.** Do you think that demand related information may be important in selecting the location where the coffee shop will be opened? Why?

Case #2: IT Store: substitute goods versus complementary goods

In January 2020, an IT store sold 700 computers: 420 desktops (average price 2400 zlotys) and 280 laptops (average price 4100 zlotys). In February 2020, the average price of desktops remained the same, but the price of laptops was reduced by 10%. However, the total sales of computers increased to 720 (400 desktops and 320 laptops). Additionally, the sales of memory flashes were 2.5% more in February than in January.

Questions #2

Using this information, determine the following:

- 1. The demand elasticity related to the price of laptops.
- 2. The cross elasticity of the demand of desktops related to the price of laptops (substitute goods);
- **3.** The cross elasticity of the demand of memory flashes (complementary products) related to the price of computers.

2.7. Good years for farming are not necessarily good years for farmers

Gabriel Staicu

Key words: price elasticity of demand, total revenue, optimal pricing policy, inelastic demand

Introduction

This assertion may sound like a paradox to you. For good reasons, the larger the output is, the higher sales and revenues are. But this causality depends strongly on the price elasticity of demand. And, as you will see below, the case of agricultural products is a special one.

Case study

Let's first analyze the structure of the consumption basket of goods and services. The share of a commodity group in total monthly consumption includes housing, water, utilities (gas, electricity), transport, food (vegetables, bread, meat etc.), clothing, footwear, healthcare, recreation, alcoholic beverages, tobacco and so on. On a frequent basis, the National Institute of Statistics (or other similar agencies) evaluate the changes that occur in consumption patterns of households with the purpose to compute the Consumer Price Index and inflation rate.

Now, consider that you buy relatively the same quantity of bread and vegetables over time, which is the case for most households. Following an economic perspective, your demand for such goods is price inelastic, meaning the quantity demanded does not respond strongly to the price change (no matter if the price increases or decreases overtime). In conclusion, because we're taking about necessities in this case, your consumption tends to be relatively the same.

Will good years for farming help farmers increase their revenues? When the economy benefits from good harvests of vegetables and cereals, the market supply increases. Using a supply-demand model of market equilibrium, when supply shifts to the right, the decrease in equilibrium price is higher than the increase in equilibrium quantity. As a consequence, the total revenue of farmers declines. This is one of the main reasons behind the emerging farmers' strikes in many European countries. Let's analyze some facts and their impact on market equilibrium.

- 1. Some important farm unions in France go on strike asking for the government's help. Their demand is to receive higher subsidies from the government in order to cover the costs of production. Otherwise, they will have losses, will be forced to shut-down their businesses, and will lay off employees. How will the subsidies help farmers? What changes will occur in market equilibrium?
- 2. Now suppose that the government doesn't respond positively to the farmers' demands, and farm unions decide to destroy a part of their harvest or, as history has shown, to throw their crops in the sea as a reaction to unfavorable public policy. Is their reaction irrational? Does the market supply of agricultural products increase or decrease? What about their revenues?
- **3.** Suppose instead farmers' unions ask European governments to impose higher quality standards for non-EU products or higher custom taxes. What might be the reason and how could this policy help European farmers?
- **4.** As you probably know, the market for farm products is highly regulated in the European Union. We are talking not only about high-quality standards that domestic and foreign products need to meet, but also about price controls. Do ceiling prices help farmers? What are the effects of price control on the market equilibrium?

2.8. Highway around the world. Why does Polish fuel seem absurdly expensive?

Jakub Warzecha

Keywords market, fuel prices, taxes, purchasing power

High taxes, low margins.

Compared to all European Union countries, Poland has for years had one of the lowest fuel prices at gas stations. This is due to many factors but mainly includes low refining margins and fuel distribution networks compared to other countries. Low margins are not justified by special care for the wallets of citizens and visitors. This is because Polish law and regulations impose such large taxes on liquid fuels that it will reach the target recipient behind it. It is already twice as expensive as the price of crude oil purchased by the refinery; thus Polish law leaves little space for imposing high margins either through refineries or distribution networks. Knowing the purchasing power of the Polish consumer, fuel distribution networks are forced to impose low margins, often based on the border of profitability.

Purchasing power of highly developed countries.

Moving around Europe with their own means of transport, an average Polish consumer may be shocked by converting the tanked fuel at the station from EUR to PLN. In this case, the aforementioned purchasing power of money enters, which in the case of fuel in Poland looks like one of the lowest and worst in the EU. The average national earnings in Germany in 2017 was 13,800 PLN/month. The average national average of earnings in Poland in 2017 was 4,600 PLN/month. Assuming these data for the present moment, February 2020, an average German citizen in his country could buy 2300L PB95 gasoline for 6 PLN/L, while in Poland the average citizen could afford to buy 940L PB95 gasoline at 4.90 PLN/L. Looking only at these data, in order to be able to match our close neighbors, we should be able to buy gasoline half as cheap, and yet the average German citizen would still exceed the purchasing power of a citizen from Poland.

This problem refers only to the economies of developed countries, hence the comparison with a different, non-European country. In 2017, the average monthly salary in the USA was 15760 PLN. In February 2020, the average price of gasoline at gas stations in the USA was 2.85 PLN/L. This means that the average US citizen can buy 5530L of petrol with his salary. Knowing the values of Polish, German, and American client calculations, one can easily conclude that a US citizen can afford much more than the other two. Nothing could be more wrong. In order to be able to com-

pare all three countries to each other, one should check the level of all fuel charges and taxes imposed by state authorities. In the European Union, the situation looks more or less similar: over 50% of the price we see at the distributor are taxes, and for comparison, taxes imposed on fuels in the US are about 10–15% of the final price.

Taxes and charges imposed on fuels.

Returning and focusing on the example of Poland, it is worth thoroughly discussing the impact of the loads imposed by the State on liquid fuels. In Poland, we distinguish as many as 4 different taxes affecting the final price of gasoline or diesel.

- For fuels, VAT is 23%.
- Excise duty a fixed amount determined at the beginning of the year, in 2019, for gasoline 1.54 PLN/L for diesel 1.17 PLN/L. Fuel surcharge a fixed amount determined at the beginning of the year, in 2019, for gasoline 0.13 PLN/L for diesel 0.30 PLN/L. Issue fee a fixed amount determined at the beginning of the year, in 2019, for petrol and diesel amounting to 0.08 PLN/L. Thus, before we know the price of crude oil and the current dollar exchange rate (the currency in which most crude oil is purchased on the market), we already know that this price will increase by 1.75 PLN/L in the case of gasoline and 1.55 PLN/L in the case of diesel.

The current cost of purchasing Brent Crude oil is 1.35 PLN/L (data from 12.02.2020). The average processing cost/refinery margin is 0.50 PLN/L for gasoline and 0.70 PLN/L for diesel, respectively. This difference is dictated by the refinery's production capacity, about 100% petroleum produces about 50% gasoline and only 25% diesel.

Then add distribution network margins, which is approximately 0.10 PLN/L for gasoline and 0.15 PLN/L for diesel. Adding all known ingredients, the result is 3.70 PLN/L gasoline and 3.75 PLN/L diesel. Then 23% VAT is imposed on the prices given. The final price is 4.55 PLN/L for gasoline and 4.61 PLN/L for diesel.

Of course, the prices given are indicative. We are unable to check the period of prices on the world markets where the fuel currently available at gas stations comes from. Established refinery and distribution network margins are equally indicative. Please note, however, that they do not differ much from the real prices listed at the beginning of this article.

Direct impact on the price of fuel in Poland.

Knowing all the components affecting the price of fuel in Poland, you should check the correctness of the statement that taxes account for over 50% of the price. Adding the price of crude oil, refinery margins and distribution network margins, we get 1.95 PLN/L as the result for gasoline. Keeping in mind that the final price is 4.55 PLN/L, we can safely say that this statement is the most correct and true. In the discussed case, all taxes imposed by the state on a citizen amounted to as much as 2.60 PLN for each liter of gasoline, which respectively represented 57% of the total amount paid by the citizen at the service station.

However, this is not the end of great fluctuations and turmoil in the case of fuel prices, particularly for individual customers. Crude oil bought by domestic refineries is sold in foreign currency. It is mainly settled in dollars or euros. Thus, at the moment of the weakening of the Polish zloty or the strengthening of those other currencies, the Polish consumer must automatically be prepared for price increases at gas stations in a fairly short time. Exchange rate volatility on world oil markets is another and, in fact, an even greater threat. A sudden change in investor interest, economic uncertainty, global unrest and even more so wars in regions rich in oil fields affects the sudden fluctuations in the crude oil price and ultimately hits the individual customer the most.

Ways to fight with high fuel prices

There are many ways to combat the high and unstable fuel prices, but none of them has been used by the Polish government for over 30 years. The first and probably best way would be to introduce VAT only on refinery margins and distribution networks, not as is the current case, in which all fuel is already taxed. Another problem to solve, though hard to calculate, but certainly effective would be the introduction of maximum taxes (excise duty, fuel charge and emission charge) depending on oil purchase prices. For example, the maximum (fixed yearly) fee could be charged only on fuel when the amount of 1.40 PLN/L of crude oil is not exceeded. If this amount were higher, the amount of fees could be reduced, e.g. 1% from 0.01 PLN.

In this way, if the price of oil would soar to 1.60 PLN/L, the amount of fees, i.e. excise, fuel and emission charges, would fall by 20% and for the year 2019 it would result in a real price reduction of 0.35 PLN/L.

Lower fuel charges, higher GDP

To sum up, getting around Poland is not the most expensive in the world. There are countries in which fuel at the stations that distribute them are much more expensive, but there are also those where it is much cheaper to move around, where it is cheaper than the national average from our country. Imposing huge fees on consumers for using the good, thanks to which the enormity of the whole GDP is generated, is not entirely understandable and necessary. It should be carefully considered whether the direct budgetary impact of high taxes on fuel would not be compensated or even higher if these fees were lower. Cheaper fuel means lower costs of reaching a larger group of customers and thus greater mobilization for travel activities. Cheaper fuel means more frequent travel, which results in spending more money, even by tourists. Cheaper fuel means competitive prices not only for transport but also for energy.

In free trade conditions, it is the producer and distribution of private companies that should mainly provide high or low prices for their products. Such companies should compete with each

other and fight for customers by dealing with appropriate pricing strategies. However, this is not possible in a country where the margin of a company dealing in the distribution of liquid fuels cannot be higher than 2% of the final price.

- **1.** How important is the fuel price for consumers' goods prices? Do you think the price is a demand or supply factor? Why?
- 2. Is it possible to reduce taxes on fuel in Poland and how would this affect the country's budget? Would a reduction in fuel charges have a real impact on reducing inflation in the country?
- **3.** What is the country's budget revenues from fuel sales and what percentage of it is allocated to road investments in the country?
- **4.** Does the price of fuel have a direct impact on the decision to travel around the country for its citizens?
- 5. What kind of market structure represents the fuel market? In which way can the market react if taxes will increase? Why would such a response be noticed?

2.9. Is It Worth Breaking Out the World Trade War?

Teresa Kamińska

Keywords market interrelationship, market mechanism

The trade liberalization tenet has governed international economic relations since the Second World War, which has contributed the urging of integration and globalization processes. The United States of America used to play the role of the main leader in international organizations (mostly The United Nations, World Bank and World Trade Organizations) that created order in global trade. As a result of never-ending negotiations targeting the gradual lowering of duties and other fiscal and non-fiscal tariffs, as well as various barriers, it was roughly possible to solve or at least mitigate disputes between countries. The sudden rebuttal of the so far trade policy in the late 2010s by the USA seemed to "turn over the boat". A new doctrine relying on the adage, "America first," means paralyzing everything in the frames of the WTO, which might be disadvantageous for the American economy or its world position in general. In order to keep a powerful standing while negotiating new rules, the American government refuses to talk with groups of countries (e.g. The European Union, NAFTA) and insists on debates bilaterally. The battle began with imposing a significant import tariff for steel (25%) and aluminum (10%) if exporting countries did not voluntarily reduce their exportation of those commodities to the USA. Such a political game succeeded up-to-now (August 2018) as related to three countries (South Korea, Brazil and particularly Mexico, although in recent years some steelworks have been moved there). However, nowadays there are other meaningful American trade partners, i.e. Canada, the European Union and China, which are not so submissive. They differ from each other regarding economic targets, which results in a lack of leadership, but to be effective they should create an alliance. Meanwhile the EU, China and Canada prepared a list of retaliation charges. The effect was surprising because American producers (e.g. Harley – Davidson) threatened to move some of their products to its factories elsewhere abroad. In turn, the American government threatened companies with imposing extra taxes for such a disadvantageous activity.

Considering the EU, President Trump's policy is mainly aimed at the German automobile industry/sector. Substantial increasing of import tariffs for automobiles (BMW, Volkswagen and Daimler) will result in their price soaring in the American market, although they already have their own car factories there. Eventually, Germany and the network of car component producers in other EU countries will lose. If this happened, the EU would implement severe retaliations.¹⁸

American – Chinese clashes pertain to an immense trade surplus that has existed for decades since investors – not only Americans – transformed China into the "world factory". However, the

¹⁸ It is being estimated that Germany might lose 0.2% of GDP, and Poland 0.16% of GDP. The UE's retaliations might induce an unemployment increase in the USA as much as about 4 million employees. C. Kowanda, (2018) Gwoździe do trumny, Polityka, No 29, pp 44–45.

problem is more combined because many accusations displayed by the American government against Chinese activities in various fields aimed at reducing the increasing world power of the Chinese economy (i.e. joint ventures, illegal copying of new technologies and products, investments in IT sector). Finally, the USA has gradually been raising tariffs for Chinese merchandise and the latter country replied in the same way (the list of Chinese retaliations seems to be longer including financial instruments and political actions weakening sanctions against the North Korea). The problem remains since Chinese imports are still dissatisfactory.

Summing up, the American policy is not transparent because of its discrepancies in performance (e.g. breaking negotiations of creation Trans-Atlantic Trade and Investment Partnership – TTIP). Trade partners like the EU, Japan, or Latin America do not want to follow the US performance, principally as they expect advantages from American – Chinese trade conflicts.

- 1. Discuss the possible short and long-run results of the introduction of protectionism to international trade.
- **2.** Graphically illustrate the impact of tariff increases on imports of steel and aluminum to the US on:
 - a) The US submarket of imported steel and aluminum, heavy industry and labor market
 - **b)** markets (exportation sectors) in the following countries and their labor markets:
 - China
 - The EU
- **3.** If the German automobile imports were burdened by much higher duties than at present (25–30% instead of 2.5%) what countries would suffer?

2.10. Labour market – the perfect way to set the price? Ninja and PewDiePie as an example¹

Tomasz Bernat

Keywords market, labor market, determinants

Can you imagine earning big money by sitting in front of a computer monitor? It is worth looking at how the market values its product. Is it exactly the same as in any other market, for example telephones, bread or fuel?

How much do you think you can earn for sitting in front of a computer? This of course depends on the profession. Some examples for Poland:

- shop cashier 3000 PLN (800 EURO)
- office clerk 4000 PLN (1000 EURO)
- corporate analyst 5000 PLN (1200 EURO)
- brokerage house analyst PLN 10,000 (EURO 2,400)

Can you earn more and still have fun? Well, it turns out you can. Here is an example of a new profession that has recently become a lucrative field to make money. According to a study in FORBES, Fortnite's World Cup drew 19,000 fans to New York. It's about fans watching computer game players. Whether it's live viewing or streaming, it's an activity that brings together thousands of people. For some, it is a form of entertainment and the possibility of interactive participation in it. For others who play, it is a way of earning a living by having fun in front of a computer. However, as it turns out, winning is not the only goal. *Fortnite* phenom, Tyler "Ninja" Blevins, made \$17 million last year, enough for first place on *Forbes*' inaugural ranking of top-earning gamers, but the 28-year-old pro won less than \$100,000 competing. In fact, Ninja didn't even qualify for the first-ever *Fortnite* World Cup, or its \$3 million grand prize. (That money was won by Kyle "Bugha" Giersdorf, a 16-year old from Pennsylvania).

That's because top-earning gamers are more influencer than they are elite athletes. They earn their millions from leveraging their massive online followings into endorsements, fees, and sponsorships. Ninja has 2.8 million followers on Mixer, Microsoft's nascent gaming platform, which *Forbes* estimates will earn \$30 million over three years after luring him from arch-rival Twitch last August. The blue-haired gamer has an additional 22.7 million YouTube subscribers and 14.9 million followers on Instagram. In all, the ten top-earning gamers have a combined 270 million followers across YouTube, Twitch, and Mixer and earned \$121 million last year. None of them made the list through competition alone.

¹ Text using an article from FORBES: <u>https://www.forbes.com/sites/mattperez/</u>

The next step? Mainstream celebrity. Ninja, who has been a pro gamer in one form or another since starting with *Halo 3* in 2009, is well under way. He promoted soft drink cans thanks to an endorsement deal with Red Bull. Adidas has a Ninja sneaker. In the last year he has appeared on *The Tonight Show with Jimmy Fallon, The Daily Show with Trevor Noah*, and performed as a guest vocalist on Fox's *The Masked Singer*. Ninja merchandise–from a graphic novel to his signature headband–can be purchased at Walmart and Target.

Ninja is just one of hundreds of internet entertainers cashing in on the growing influence of streaming and gaming culture, which has brands including Monster Energy, Postmates and State Farm paying up in their hunger to reach the elusive Millennial audience; eMarketer estimates sponsorships and advertising spending in gaming alone will hit \$3.3 billion in 2019.

The biggest streamers buttress that revenue by collecting directly from their followers, who can "tip" them with direct one-time payments or pay for a premium subscription, which the players split with platforms like Amazon's Twitch and Mixer. At his peak, Blevins made upwards of \$500,000 per month, splitting the \$4.99 premium fee fans paid to Twitch.

Pro gaming is still the Wild West. There is no government agency overseeing decency on streaming sites and the personalities making the most noise aren't always peddling the most high-minded material. Felix "PewDiePie" Kjellberg (No. 2, with \$15 million) has lost partnerships because of anti-Semitic and racist videos. His audience has stuck with the Swedish gamers, though; he remains the most subscribed-to individual on YouTube. Blevins himself was caught in a controversy after he said in August 2018 he wouldn't stream with women because of possible relationship rumors that could emerge.

Controversies aside, it's a ripe time to cash in. Mixer's announcement of the Ninja deal had the feel of a major league free agency press event and triggered an expensive chase for talent. It was a smart move to jump on. Blevins had around 250,000 premium subscribers in March 2018 and a year later was down to about 20,000, according to the TwitchTracker. Since then, platforms including Facebook, YouTube and Caffeine have been signing more gamers to exclusive deals, including Jeremy "Disguised Toast" Wang, Jack "CouRage" Dunlop and Rachell "Valkyrae" Hofstetter.

So how are earnings valued? What factors influence the fact that for relatively similar work – i.e. sitting in front of the computer and using it, the earnings are varied. There are several important factors, which include: the type of work performed (the difference between the work of a store clerk and the work of a stock market analyst), experience and internship (usually more experience means more earnings), education (research shows that each year of education is 10% more earnings compared to a similar position but without this education), place of employment (small town or large city), the employer (enterprise or state office), employment certainty (in a government agency or in a development start-up), etc. In addition to these factors and in the context of this example, it is worth mentioning influencers – people who have a significant impact on social opinions – reach large social groups with their message. Take TV stars or well-known athletes as an example: the valuation of their earnings is certainly a derivative of the influence they have and the number of followers on various forums.

To sum up our example, one should answer the question whether people's earnings, and thus the price for a market product which is work, can be compared to the valuation of other market products. The answer is ... yes. Also, setting the price for ordinary everyday things, such as food, is influenced by many factors. Consider the bread mentioned at the beginning, its price depends, among others, on: the place of sale, type of raw materials from which it is made, knowledge of the brand on the market, and packaging method. The rules are the same and the difference applies to the product itself.

- 1. Characterize what the labour market is and how it is defined in terms of demand and supply.
- 2. What are the basic determinants of market pay mentioned in the case study? What are the others not mentioned in the text?
- 3. Why are the earnings of computer players so high?
- **4.** What personal characteristics should a player have to be able to earn big money? Where does popularity come from?
- 5. Can wages be treated as the perfect way to determine the market price?

2.11. Local but remarkable – "Pasztecik Szczeciński" case study

Izabela Osek

Keywords market, competition, small and medium-sized enterprises, demand and supply

Introduction

Szczecin is the capital of its province with more than 400,000 inhabitants. Being an entrepreneur in such a big market is not an easy thing. It becomes even harder when you try to keep your eye on good quality and local traditions – and that's exactly what "Pasztecik Szczeciński" does. In the modern world, which is dominated by automatic, serial production on a massive scale, small, local manufacturers face problems against this every day. Creating a market analysis should start from thinking about the following factors:

- competitor's prices level;
- relations between market demand and supply;
- seasonality of the sales;
- prices of the substitutes.

First come, first served?

When it comes to competitor's price level, it is necessary to take a look at the competitive environment. There are two types of competition: direct and indirect. In the case of "Pasztecik Szczeciński", located on one of the most popular streets in Szczecin, their direct competitors are the other places selling these same little snacks, filled with cheese, mushrooms or meat. These objects are working as franchisees and belong to the other owners and are located in the other parts of the city. Indirect competitors are other fast-foods restaurants (like KFC or McDonald's). Their prices are higher than the prices offered at "Pasztecik Szczeciński". Nearby on Wojska Polskiego street, townspeople and tourists can buy these local snacks for 3,3 PLN (other places are serving patties for 3,6 PLN or even 3,80 PLN). In KFC or McDonald's similar snacks cost more, for example, the snack "Longer" in KFC costs 4,2 PLN. It is obvious that "Pasztecik Szczeciński" is rather cheap. In this market segment there are other common goods like tosts and kebabs (the last one cost allegedly about 12 PLN). It is important to notice that every single modification in snacks like kebabs (for example: bigger meat portion) generates more costs. "Pasztecik Szczeciński" always offers the same price, no matter what's inside.

Demand and supply, supply and demand

Creating a market analysis is also about relations between market demand and supply. "Pasztecik Szczeciński" is a very specific point of sell because of the owners and their attitude to market laws. When it comes to demand, it is maintained on the same level for the whole year. The quantity of goods that "Pasztecik Szczeciński" is pushing into the market only increases on one day in the whole year –October 21st. That day is called "The day of Pasztecik Szczeciński". On that day, the demand (but also supply) increases. Local politicians, journalist, and other guests come to celebrate. The owners also deal with occasional increases in demand, for example, when one of Szczeciń's schools orders patties for a prom. The basic factor affecting the amount of supply is the price. In the case of "Pasztecik Szczeciński," prices are relatively low. Unfortunately due to the lack of any promotion or advertising, it does not translate into a real increase in demand.

Seasons change

As any other product, patties from Szczecin are also subject to the seasonality laws. In the past the largest quest for "Pasztecik Szczeciński" were seenw during the fall and winter time. It was all about low temperature and hot, delicious filling, served with red beetroot soup – just perfect for the freezing residents of the city. Due to the consistency and method of preparation, it is quite difficult to digest, and that's why eating patties in summer is not a good idea. Currently, the largest number of guests is observed during the holiday season, which is associated with increased tourism. Due to the fact that the "Pasztecik Szczeciński" is included on the list of regional products and is the culinary treasure of West Pomerania – it is visited in the summer by crowds of visitors from around the world.

Substitutes means opportunities

In the case of substitute prices, patties from Szczecin are relatively expensive to produce. The owner of a shop on Wojska Polskiego street carefully selects all ingredients and semi-finished products. The meat comes only from reliable suppliers, mushrooms come from trusted farms, and the cheese is always carefully selected, likewise for the baking flour. Patties are made by hand and baked on site. Other costs to keep in mind are the cost of repairing a worn machine, the cost of the shop crew's work, rent, bills and other issues related to running a shop. There is no known, big or supranational brand behind this restaurant. Reducing the cost of producing a patty would be possible if carefully selected products were exchanged for cheaper counterparts (for example: instead of buying meat that costs 25 PLN per pound, buying these one for 15 PLN per pound). Unit prices could be lower, but there it is possible that many of the clients would be deterred due to the lower quality.

- 1. Describe the main advantages and disadvantages of running a small, local business.
- **2.** Give examples of actions leading to cost reduction in businesses like "Pasztecik Szczeciński".
- 3. Quality or quantity? What's more important while running such a specific business?
- 4. Are there any ways to improve sales and increase profits?
- 5. Suggest some ways to increase income in autumn and winter.
- **6.** Explain why doing business is more difficult without a big and supranational brand behind it.

2.12. Pencil or apple?

Tomasz Bernat, Paweł Lipiński

Keywords consumer, indifference curve, price, satisfaction

Alice is a nice young girl who is going to school. Due to her parents' professional duties, Alice is independent to take the bus to and from school every morning and afternoon. Her parents want to introduce their child to the adult point of view for the cost of living. They have imposed on her the obligation of financing the cost of travel to and from school. Alice, with her own pocket money, must pay for school trips. She gets a 200 EUR allowance every month for the expenses.

The cost of a single ticket is 3 EUR, and the cost of a monthly ticket is 50 EUR. The decision of choosing the type of ticket belongs to Alice.

Alice is also a fan of pencils and loves to eat apples. She collects pencils of different shapes and colors. She also likes to eat a lot of fruit. The average cost of pencils is 1.5 EUR, while the average cost of apples is 1.0 EUR for one kilo. The table below shows Alice's satisfaction from consuming each good.

Table 1. The level of satisfaction with the purchase of pencilsand apples is presented in the table below

	A	В	C	D
Pencil	2	4	6	8
Apple	14	8	8	2

Unfortunately in January, the price of apples was changed to 1.50 EUR, which limits Alice's shopping possibilities.

- **1.** Draw the curve of indifference.
- 2. Considering that Alice chooses to purchase a monthly ticket and decides to leave 50 EUR for other expenses, please submit the quantitative purchases before and after the price change taking into account the substitution rate.
- 3. How will the price change affect the budget line?
- 4. Define (based on the Engel law) to which group Alice's household belongs?



3.1. Deepwater Horizon

Aleksandra Gąsior

Keywords market mechanism, CSR, choices, decisions, costs, human behavior

Introduction

The market is governed by two basic rights: supply and demand, where the seller and the buyer create them accordingly. Relationships that occur between sellers and buyers are triggered by decisions made. In the neoclassical economy, decisions made by market participants led to the assumption of rationality of economic entities (*homo oeconomicus*¹). Generally, it can be said that homo economicus attempts to maximize utility as a consumer and profit as a producer². Over the years, the approach to the assumptions of *homo oeconomicus* has undergone transformations³. The subject literature also criticizes the assumption of rationality of business entities⁴. The use of homo oeconomicus assumptions, as well as the effects of research in behavioral economics, allow us to analyze the following case study.

Case study – the Deepwater Horizon proecological enterprise's decisions

The explosion of the Deepwater Horizon oil platform took place on April 20, 2010 in the Gulf of Mexico. This ecological disaster was initiated by an oil spill on the platform, which led to an explosion and then a fire. Unfortunately, in this disaster, 11 employees were reported missing or dead, 17 were injured, and the platform itself sank two days later. This is considered the largest

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⁴ J.M. Keynes, Ogólna teoria zatrudnienia, procentu i pieniądza, PWN, Warszawa 1985. G. Katona, Psychological Economics, Elsevier, New York 1975; K.E. Warneryd, Stock Market Psychology: How People Value and Trade Stocks, Edward Elgar Publishing, Cheltenham 2001. H.A. Simon, A behavioural model of rational choice, "Quarterly Journal of Economics" 1955. A. Sen, Rational Fools: A Critique of the Behavioral Foundations of Economic Theory, "Philosophy and Public Affairs" 1977, 6. D. Kahneman, A. Tversky, Prospect theory, an analysis of decisions under risk, "Economoterica" 1979, 47, vol. 2.

ecological disaster in the history of the United States. It is estimated that the size of the oil spill was 5 thousand to 25 thousand barrels of oil per day, in other words, 800 thousand liters a day. This means that the oil spill in this disaster reached almost 5 million barrels of oil, or 666 thousand tons of oil, which in liters is 698 million liters of oil. According to Reuters, the oil spill in the Gulf of Mexico covered an area of 6,500 km2. This can be compared to a square with sides of 80 km.

After the outbreak, various attempts were made to contain the oil spill. However, only on July 12, 2010 a new 75-ton dome protecting the scene of the incident was constructed. Then on July 15, BP Vice President Kent Wells announced that its installation temporarily stopped the leak.

The Aftermath of the Disaster

Experts concluded that the negative effect of the leak on the environment was oil toxicity and oxygen deficit (anoxia). This severely influenced the environment by destroying the habitats of hundreds of species of birds. Greenpeace (organization that act to preserve nature) also noted other environmental threats, such as the fact that oil destroys life in the sea and glues down birds' feathers and marine mammals' fur. Unfortunately, birds and mammals swallowed poisonous oil during the cleansing operation, while the fish absorb it as a result of direct contact and through the gills in the process of breathing. There was also a threat to people who inhabited the areas closest to the leak. The vapors and the contact with oil led to nausea and health problems for the people.

Apart from the damage to the environment and the people, the disaster resulted in economic damage in the losses of the fishing and tourism industry.

Although BP's authorities declared compensation for those injured in the crash (costs might have reached \$8 billion), unfortunately the value of the shares on the London Stock Exchange fell sharply.

The Results of the Investigation into the Disaster

In 2017, a paper was published, which is the result of the work of the scientific team of the National Agency for Oceanic and Atmospheric Research (NOAA) established a month after the disaster in the Gulf of Mexico. The main goal of the research team was to assess the value of natural losses in the Gulf of Mexico after the explosion of the Deepwater Horizon oil platform. A 193-page report was also prepared by the experts of the research team to show that the responsibility for the disaster should be attributed to the "sequence of errors committed by various parties". The cause of the accident was, among others, mechanical defects, incorrect decisions of both employees and engineers but, more importantly, the way the decisions were executed.

Transocean employees who ignored signals of an impending disaster are said to have been directly responsible for the accident at BP. The Halliburton company, then responsible for the safety of the shaft, is also considered guilty of negligence.

Consequences for BP

As a result of talks with the US government, BP paid a record penalty of 18.7 billion dollars for the biggest ecological disaster so far. It was assumed that the money would reach five states from the region of the Gulf, which suffered as a result of environmental contamination. It is recognized that this is one of the largest amicable agreements in the history of the US Department of Justice. Initially, BP declared to cover the effects of the disaster and created a 20-billion fund to cover the claims of both private and legal persons after the disaster.

- 1. Are pro-ecological decisions important for companies?
- 2. Do the decisions matter for market performance?
- 3. Safety technology or lower costs?
 - **a)** Is BP a pro-ecological company?
 - **b)** What does BP's logo show?
- **4.** Why did this catastrophe happen?
 - **a)** Decisions to lower the costs of investment (DH)
 - **b)** Old out-of-date technology
 - c) Low quality materials to maintain platform
 - **d)** Low level of managerial control
- **5.** Market decisions:
 - a) What is better: to be or not to be pro ecological?
 - **b)** What costs arose for BP after the DH case?
 - c) What is better: to invest more or just wait (perhaps nothing happened)?

3.2. Amazon is playing with pricing strategy. The Kindle case study

Gabriel Staicu

Key words: price elasticity of demand, total revenue, optimal pricing policy

Introduction

Price elasticity measures the responsiveness of a good's sales to changes in its price. This concept is important for two reasons. First, knowledge of a good's price elasticity allows firms to predict the impact of price changes on unit sales. Second, price elasticity guides the firm's profit-maximizing pricing decisions.

Case study

When Amazon launched the e-reader Kindle, back in 2007, the price was set at \$399. Two years later, the price dropped to \$259, then to \$189 in mid-2010. For those unfamiliar with economics, it seems that Amazon was playing with pricing strategy to increase its market share of e-readers. But, as you will see, what Jeff Bezos did was about pure economic reasoning

According to some financial analysts, in 2009, when the price was cut to \$259, Amazon had annual sales estimated to be around 1 million units. Bezos was still confident that the price cut to \$189 made sense for his company in pushing Kindle as the dominant platform for e-books, reporting that the Kindle sales had tripled since then (meaning 3 million units sold for the lower price of \$189). Considering the information above, let's explore this economic reasoning by answering the following questions:

- 1. Did the price cut to \$189 make sense for the company? What important rule should be considered in your answer? Explain your reasoning in detail.
- 2. Suppose the Amazon (inverse) demand function is linear and well described by the equation P = a bQ, with P price and Q quantity (in million). Identify the value of constants *a* and *b*, considering the price level decreased from \$259 to \$189, and the quantity demanded increased from 1 to 3.
- 3. The sales figures listed above imply that the Kindle's (linear) inverse demand curve is described by the equation: P = 294 35Q. Double-check that the two quantity-price points (Q = 1 at P = \$259 and Q = 3 at P = \$189) satisfy this equation.

- **4.** Determine the price elasticity of demand for the Kindle.
- 5. Compute the total revenue for these price levels. Was this pricing policy optimal? Explain in detail by taking into account the value of demand elasticity determined above.
- 6. Even though Bezos and Amazon are secretive about the costs of production, let's estimate that the marginal cost of producing a Kindle is \$126 per unit. Now, apply the marginal rule of optimization (which is marginal revenue equals marginal cost) to find the output and price that maximize Kindle profits.
- 7. Furthermore, some experts in this new industry estimated that Amazon earned a contribution margin of \$4 on each e-book. Over the Kindle's life, e-book sales generated by each Kindle sold are estimated to be 25 e-books. This translates to each Kindle sold generating \$100 in e-book profits. Calculate Amazon's optimal quantity and price with respect to the total profit generated by Kindle and e-book sales.
- 8. What is the implication for Amazon's pricing strategy? Explain carefully. Even though the marginal revenue that Amazon earned for each Kindle sold has declined, it gained an additional marginal revenue (per Kindle) of \$100 due to new e-book sales. Based on your knowledge and business experience, identify and present a similar marketing strategy with the one that Amazon has adopted, no matter if it was successfully or not.

"And the Amazon story goes on..." writes Claire Cain Miller in a NY Times article about Amazon's decision to continue this price war: "Amazon.com will introduce two new versions of the Kindle e-reader on Thursday, one for \$139, the lowest price yet for the device. Amazon is hoping to convince even casual readers that they need a digital reading device. By firing another shot in an e-reader price war leading up to the year-end holiday shopping season, the e-commerce giant turned consumer electronics manufacturer is also signaling it intends to do battle with Apple and its iPad as well as the other makers of e-readers like Sony and Barnes & Noble. Unlike previous Kindles, the \$139 "Kindle Wi-Fi" will connect to the Internet using only Wi-Fi instead of a cellphone network as other Kindles do. Amazon is also introducing a model to replace the Kindle 2, which it will sell for the same price as that model, \$189. Both new Kindles are smaller and lighter, with higher contrast screens and crisper text. "The hardware business for us has been so successful that we're going to continue," said Jeffrey P. Bezos.

3.3. Company in the rapid development of a company brokering in short-term apartments

Anna Taśmińska

Keywords company, profit, costs, business opportunities

'BAO Apartments'

Gregory and Kate are a hard-working couple. They are not specialists in any field and do not have any higher education. They dream of travel and financial success. In order to fulfil their dreams, they go to work abroad. They are employed in an agency providing rental services for apartments and holiday homes. For several years, they gain experience in different positions and save money. They return to Poland to open a similar company on a small, local scale. Their knowledge, diligence and intuition acquired abroad make them trustworthy partners to the homeowners who are happy to sign leases with them, whether on a rent or commission basis.

Guests of rented apartments are tourists from Poland and abroad coming for short holiday stays. Gregory and Kate are quickly building the 'BAO Apartments' brand, recognizable in their area, and within 5 years they have already become intermediaries of short-term rentals offering nearly 200 premises. They are liked by their employees, and guests leave their holidays satisfied. The action concentrated around their place of residence allows them to have personal contact with contractors and guests. They solve any problems by reacting on an ongoing basis. Gregory and Kate have achieved success and live a life beyond their dreams.

Partnership

But they want more from life. If local success came so easily, why not expand the scope of their services nationwide and gain fame? However, this will require a significant investment in advertising and human resources. There will be a need to open new offices and hire dozens of people to do more work. That's what they need capital for. They find it with Mark, Gregory's friend, whom they have known well since childhood. Mark is a very successful businessman, but operates in a completely different industry. He can afford to become an "business' angel" and is delighted with Gregory's and Kate's idea, whose progress he's been following for some time now. For Mark, it's not supposed to be a particularly absorbing addition to what he does every day. He is supposed to invest in the company and provide advice in strategic decisions, but he has a great deal of confidence in Gregory and Kate's experience. He believes that in some time as a partner,

he will only have to count profits without any extra effort. Gregory and Mark become partners of the new brand: 'Lazy Rent', which absorbs the former 'BAO Apartments'. Mark provides the money for advertising and helps with contacts and creating an image of the new brand: "New cities, new regions and hundreds of employees". The development of the company is unbelievable. There are already more than 1000 apartments in their offer. Mark assumes that scaling up has to be as quick as possible, and that minor mistakes arising with such rapid development will be corrected later. The investment is so huge that the company takes huge loans to sustain its growth. All three are delighted and feel they have nothing to fear. They enjoy life like never before, living in absolute luxury. Mark is no longer interested in Gregory and Kate's strategy and actions. Now they meet only socially, celebrating success in various exotic places in the world.

It turns out, however, that they missed the point when the quality of the services they provided decreased. The apartments are not well cleaned and guests no longer leave as good reviews as they did under 'BAO Apartments'. Loyal employees of the company in recent months have become overstretched in belief that their actions will ensure the company's success, and at some point, they will regain stability and gain higher wages. The managers, Gregory and Kate, however, have lost control of the finances. The money they invested in advertising resulted in new contracts, but returns can't be expected too soon. Gregory informs Mark about the problems. The partners are starting to argue. Remedial measures need to be taken. The top-level employees who earn the most - traders who are responsible for contacts with homeowners and entering into new contracts – are first in the firing line. So far, they have had the best motivation and bonus systems in the company. This system is quickly changed so that traders will have their salaries cut by a third and their responsibilities will be extended. A system of penalties is also being developed for employees at all levels. The morale of employees and their effectiveness is significantly declining. The remedies taken by the company fail to find significant savings. During a slower season, most employees' wages are temporarily suspended. Landlords stop receiving their contractual rent payments and profit shares due on an ongoing basis. Some employees give up their jobs due to worsening working conditions and late payments. Some apartment owners terminate their agreements. The company is present all over the country, and the risk of damage to the brand is huge. Mark is disappointed with Gregory. He realized that the success of 'BAO Apartments' was not due to his friend's knowledge and experience. It's clear that this kind of experience is not enough to turn a small company into a functioning corporation.

The recent development of 'Lazy Rent' causes Mark to lose his confidence in Gregory and Kate. He takes matters into his own hands and looks for a quick solution to this situation. In order to save the company from insolvency and to protect the invested capital, he looks for another partner, a man with experience. Now, however, he wants to better protect himself and prefers to have control over everything. He commissions a market study in search of a company with a similar profile, slightly smaller and one that is well managed. His specialists find a company called 'Luxury Rental', which is run by Philip. Mark meets Philip to get to know him better and makes him a certain offer. Philip gives the impression of a confident, stable and experience person. His company has excellent reviews online. Mark's experts found the right man. Mark offers to buy Philip's company and absorb it into 'Lazy Rent'. Philip is to become a new partner and general manager and bring order to the company.

In order to encourage Philip, Mark has prepared the 'Lazy Rent' financial report, hiding the scale of the crisis. Philip presents his company's excellent financial results. Philip's conditions include the specific price to be paid for his company and keeping all his staff, who are mostly his family and friends, all to which Mark agrees. Philip is acquired by 'Lazy Rental' and ceases to exist as an independent brand. Philip is now also expected to be a buffer for Mark's broken relationship with Gregory. Gregory is delighted with Mark's recovery idea. He also feels that he will eventually be able to become a CEO and take a break from the pace of life caused by the rapid development of 'Lazy Rent'. Gregory is delighted with Philip and agrees to all the changes he makes.

Philip is proud of his new role and is quickly implementing his recovery plan by reproducing all actions he has taken as part of 'Luxury Rental', which has resulted in 200 apartments signing up with 'Lazy Rent', concentrating in two cities in close proximity to one another. Mark controls Philip's actions for a while, but his composure and confidence inspire confidence in him. Philip is a man with a completely different disposition than his crazy accomplice Gregory. From the point of view of the shareholders, it seems that everything is on the right track.

Crisis

Some of the positions are duplicated due to Philip's previous employees joining the business. Traders and area managers are trying to resolve minor conflicts between lower-level workers themselves. Existing employees of 'Lazy Rent' are not happy with the introduced changes. Not only have they survived the crisis, which resulted in their salaries being reduced, but now they have to change the operational standards they developed to those dictated by Philip. They also quickly note that Philip transforms everything to the liking of his old company without the analysis of whether something worked just as well or even better at 'Lazy Rent'. According to them, the solutions introduced by Philip may have functioned in his small company, but not the enterprise "Lazy Rent" has become. Employees at higher levels also quickly reach a similar conclusion. In addition, there is an internal conflict between old employees of 'Lazy Rent' and employees whom Philip brought into the company. Internal competition and disagreements arise. The old staff of 'Lazy Rent' asks Gregory for help and support. However, they do it timidly and do not raise all the concerns at once. They like their previous boss and put their trust in him. They don't want to burden him with every single issue. They're used to standing behind and up for their boss and managing their problems for the good of the company. Gregory, however, is so comfortable in the role of CEO, having Philip take over a lot of his duties and restoring the relationship between the partners that he does not take any action. He announces that all decisions taken by Philip are to be implemented without any objections. At the time, Philip clearly favors his subordinates from 'Luxury Rental'.

Philip is good at optimizing cost. He completely changes the remuneration system of all employees, significantly lowering their income. The bonus system changes significantly and it is much more difficult for employees to gain additional earnings in the company. Cost optimization is also making its way into the contracts with landlords. From now on, they will incur more costs. Philip is clever and finds temporary remedial solutions that, at the expense of owners, will allow the company to generate more profits. Some of these activities get close to the line set by laws and regulations, but that's what it takes to keep the company from collapsing. This is just a temporary solution that all partners agree to.

Internal conflict in the company builds up as the dissatisfaction of the original staff grows. Philip constantly praises employees of 'Luxury Rental' in their presence. Gregory, often present when it happens, does offer the same to the employees who have been with him since the beginning. In the unhealthy atmosphere, the success and stability that Philip was supposed to bring to the company come laboriously. Despite the crisis in the company, Gregory still treats himself to everything he desires, even if he is a little less flaunty about it. Kate, of course, faithfully cheers him on in everything as the creative director.

When it was just two partners, Gregory and Mark, the rapid development of 'Lazy Rent' was sometimes painful. Different people were in different cities with different characters. Not everyone got along, and their relationships had often been difficult. However, they were united in their desire to act in the benefit of their company, which motivated their profits and good relations with the management. This was the case until the crisis. When Philip appeared in the company, the existing 'Lazy Rent' staff was completely united against this adversity. Seeing Gregory's passivity, they came to the conclusion that it was time to highlight the problems to Mark, who soon after Philip took his new position, went back to the role of a passive 'business' angel'. Trusting Philip so much, he initially didn't believe what he was hearing.

However, the company's financial analysis showed that Philip's remediation programme is not as effective as it was supposed to be. Mark is constantly receiving further information on mistakes and wrong decisions made by Philip. Mark begins to analyze the situation and accepts comments made by the employees. He sees a great problem and also sees that he overestimated Philip's business acumen.

Summary

The company currently has three partners. Gregory, who has experience in the industry, but only secondary education and no economic knowledge. He has an energetic and crazy disposition and succeeded in the local market. Mark, who is a serious businessman without the industry experience but with capital and connections; he has a fondness and trust in a school friend, Gregory. He always wanted to be an angel of business. Lastly, there is Philip, a man of stoic calm and confidence, the opposite of Gregory. He found himself in the industry by accident. He knows economics and has succeeded in the local market, achieving it in small steps, building a company, working mainly with family and friends.

Legend

- Gregory and Kate founders of 'BAO Apartments'
- Mark Gregory's school friend and his partner at 'Lazy Rent'
- Philip founder of 'Luxury Rental', a partner at 'Lazy Rent' brought in to stave off the crisis in the company and improve relations between Gregory and Mark.

Questions

Note that the industry in which the partners move is relatively young. There are no perfect role models, and one often has to set working methods oneself, focusing on the development of one's business and the desire to dominate the market.

- 1. Should Gregory and Kate have focused on sustainability and staying within the familiar market? Analyze the economic pros and cons and discuss with the group what other choices could be made for the purpose of the developing the company. Is a partnership the only method?
- 2. Characterize the decision-making process relevant to the development of of 'BOA Apartments' and then cooperation with 'Luxury Rental'.
- **3.** What are the risks of rapid development at the expense of quality, and what are the benefits of it? Where is the line where such an investment strategy should be halted during the development of the company?
- **4.** Was introducing Philip to the team a professional approach and a real chance to stave off crises in the company? What are the methods that Mark could have used to better evaluate Philip's professionalism in an industry that he is relatively unfamiliar to?
- 5. At each stage of development, other decisions could have been made. Specify the alternative costs of each stage of the company development of establishing the 'Lazy Rent' partnership and subsequent cooperation with 'Luxury Rentals.' What fate awaits the company 'Lazy Rent' and what steps will be required for the partners to get the company back on track?
- 6. Is there a chance to keep the staff who have been with Gregory from the start? Gregory as a partner clearly lost their confidence. Will their growing dissatisfaction and loss of motivation be an obstacle to the continuing development of the company even if a properly functioning recovery programme can be implemented?

3.4. Laptop not for everyone

Tomasz Bernat, Paweł Lipiński

Keywords profit, revenue, cost, variable costs, fixed costs, decision

The ABC Group Limited is a distributor of computer hardware and software operating in the Central and Eastern region of Europe (directly in Poland, the Czech Republic, Slovakia and the United Kingdom). The company, together with its subsidiaries, has a wide range of products from several hundred renowned brands in the region. The main categories of ABC's products offered by the Group are IT hardware, including computers and peripherals, components for computer assembly, network equipment and accessories, software, consumables, as well as telecommunications devices, tablets and consumer electronic products. In the structure of the IT market, the ABC Group acts as an intermediary between the equipment manufacturer and the reseller whose role is to deliver products to end customers.

There are over 250 similar companies in Poland, of which 11 generate revenues over 1 billion PLN, which is significantly different from the revenues of other entities. The total revenues of these 5 companies account for 90% of the value of the IT market. The ABC company recorded revenues of 3 billion PLN last year and is ranked second in terms of revenues. The Polish market for the ABC group constitutes 50% of revenues.

Brexit may cause additional taxation of sales, and hence the increase in prices for the end customer and a decrease in the competitiveness of the sold goods, causing a drop in sales in this market. The company is before some market challenges. The meeting of the ABC management board is running.

Venue: Headquarter of ABC, Szczecin, Poland

Participants: President and the Board of Directors

President	Ladies and Gentlemen, I think you are all following information about Brexit. It may be disadvantageous for our company. The ques- tion is how will this affect our business, and can we compensate for the changes in some way?
Commercial Director	The UK market accounts for 20% of our current total sales. Our es- timates of sales there indicate that the revenues will decrease to 50% of the current sales volume targeted at this market after Brexit.
Chief Financial Officer	I would like to point out that fixed costs constitute 0.3 billion PLN, while variable costs account for 80% of the value of sales.
Commercial Director	As we know, the UK is currently the leader of supply for EU coun- tries. We have made analyzes and we assessed that changes in the

	customs and taxes (caused from Brexit and the UK leaving the EU zone) will increase our sales to other EU countries by 20%.	
Finance Director	nance Director I understand that this will not require increasing fixed costs?	
Commercial Director	Fixed costs will remain unchanged – we will use the current poten- tial of our company.	
President	In summary, our company may be forced to change its operations. The question is how will this affect our selling and financial situa- tion?	

- 1. What is the market structure in which ABC operates in Poland? Why justify your answer.
- 2. How will the changes affect the sales market in Poland, the UK and in the EU (after Brexit)? Calculate the revenues.
- **3.** Assuming that all predictions mentioned in the case study are true, calculate profit before and after the Brexit.
- **4.** Is this situation profitable for the company?
3.5. Maximizing revenues or maximizing profits? The case of Burger King

Gabriel Staicu

Key words: marginal analysis, marginal cost, marginal revenue, optimal decision, optimal level of output

Introduction

For obvious reasons, entrepreneurs are motivated by profit. Therefore, their actions are oriented to maximize the company's total profit. On the one hand, firms allocate resources to produce and sell a quantity of goods and services that increases total revenue. On the other hand, they try to reduce the cost of production as much as possible. However, in practice, there are circumstances in which maximizing total revenue doesn't necessarily imply a maximized profit, as the following case study illustrates.

Case study

Starting from the 1990s, many conflicts between Burger King, the famous fast-food company, and many of its franchisees have arisen. The key issue of the conflicts seems to be quite simple: maximizing total revenue and market share of Burger King does not help its franchisees to maximize their profits.

Back in 2009, Burger King franchisees sued the hamburger company over its \$1 double cheeseburger promotion, saying they were losing money on the deal and the company could not set maximum menu prices. The National Franchise Association, a group that represents more than 80 percent of Burger King's U.S. franchise owners, said the \$1 promotion forces restaurant owners to sell the quarter-pound burger with at least a 10-cent loss, even though they admit that the promotional price of \$1 will increase the sales.

The franchisees have also opposed the parent company's (Burger King's) suggestions to bust the sales by increasing the store hours or to cut down the lunch time congestions by opening more express lines.

- 1. Why have these conflicts appeared? In order to answer this question, consider the following hypothesis: the franchisees prefer an output level where marginal revenue equals marginal cost (this level of output maximizes total profit), whereas the parent prefers a larger output, where marginal revenue is zero.
- 2. Considering the insights from above. Do you think the same reasoning could be applied to the software industry? Just think about Microsoft and its famous operating system, Windows. Hint! Marginal cost of producing (and selling) a copy of Windows is close to zero.

3.6. Split Payment – what does this mean for Polish entrepreneurs?

Tomasz Szatkowski

Keywords split payment, banking transactions, entrepreneurs

On November 1, 2019 the new provisions of the amendment to the VAT Act relating to the split payment mechanism entered into force. Initially, they concerned only selected goods and services determined in accordance with the Polish Classification of Products and Services of 2008. They were, among others steel choices, waste, scrap, recyclable materials, electronics, construction work and fuel. On January 1, 2020 the situation changed when the obligatory Split Payment was introduced for all business entities.

What is Split Payment and how does it work?

Split Payment, or split payment mechanism (MPP), is a division of a transaction ordered in the bank, with which the seller gets the net amount from the buyer to the main account, and the amount of VAT due to the appropriate VAT account. A special account for handling VAT is created by the entrepreneur's banks free of charge for each company account. The new regulations apply to goods and services listed in Annex 15 of the VAT Act published in the Official Gazette 2019 item 1751 and all cash transactions over PLN 15,000 gross.

What can the money from the VAT account be used for?

Access to MPP is limited. The entrepreneur can use the money accumulated in the bank's VAT account only to settle accounts with the Tax Office, the Social Insurance Institution or transfer it to the contractor's VAT account. It is also possible to transfer part of the funds to the taxpayer's business account after sending a relevant letter to the Tax Office. The Tax Office sends a response within 60 days of submitting the application and will inform the bank of its decision, than transfer the funds to the entrepreneur's account. The Office may issue a negative opinion if the economic operator is in arrears with taxes, or if "there is a justified fear that VAT obligations will not be fulfilled".

Benefits of using Split Payment mechanism.

The Ministry of Finance is trying to encourage entrepreneurs to use the split payment mechanism. The first benefit is the possibility to apply for an expiry date for the refund of the difference between the amount of output tax and input tax. By default, entrepreneurs must wait 60 days, but thanks to the provisions of Art. 87 paragraph 6a and 6b, this time may be reduced to 25 days. This will not require the fulfillment of any additional conditions, such as paying invoices within the prescribed period. It is enough for an active VAT taxpayer to complete a VAT-7 tax declaration and declare his willingness to receive a refund to the VAT account in item 68. Entrepreneurs using the Split Payment mechanism will also be able to rest assured that they will not be subject to sanctions specified in art. 112b and 112c of the VAT Act. They will therefore bypass additional tax obligations and default interest in the event of:

- mistakenly understating the amount of tax due,
- overstating the amount of tax to be refunded,
- failure to submit a tax declaration,
- failure to pay VAT due.

Active VAT payers using MPPs will also not be affected by negative consequences associated with the so-called collective responsibility. Such a privilege results from the provisions of Articles 108c and 108d of the VAT Act. The use of the split payment mechanism will therefore be treated as due diligence when entering into transactions with the contractor.

Disadvantages of the Split Payment mechanism introduced – what does this mean for entrepreneurs?

The mechanism of Split Payment mechanism for services rendered and the sale of goods is not without flaws. Traders may face the following issues when using Split Payment mechanism :

- loss of financial liquidity up to now entrepreneurs could use the money accumulated on a bank account, e.g. for payment of salaries, settlement of liabilities towards lenders or payment of social security (ZUS),
- limiting the implementation of investments by entrepreneurs in the transition period it may be necessary to use sources of additional funding, e.g. revolving loans,
- long waiting time (up to 60 days) for a decision on the possibility of transferring funds from a VAT account to a regular business account – in order for such an application to be positively considered, you should properly argue your request for payment and count on a positive opinion of the Tax Office,
- no possibility of using the collective transfers service each transfer refers to a specific invoice that the entrepreneur received from a specific seller,

• high risk of errors at the stage of completing the transfer – it is the contractor's responsibility to enter the exact amount of VAT and the gross amount in the form.

The introduction of Split Payment mechanism is unfavorable for most Polish entrepreneurs, which has a significant impact on the deterioration of the State's investment economy. It extends the cash freezing time of companies that mostly have financial liquidity problems. This leads to stagnation and reduces investment opportunities of enterprises. In extreme cases, this period may be extended to several months, which may generate serious financial problems, including a drastic decrease in solvency, problems with payment of salaries, and loss of credibility. The only area gaining on this type of tax settlement is the fiscal policy of the State.

Split Payment mechainsm in practice.

Before the introduction of Split Payment mechanism , banking transactions between companies looked like this:

- company X's invoice displays the service performed or sale of goods to companies Y on the basis of 15,000 PLN gross,
- company Y makes an invoice payment to company X's bank account,
- company X receives the entire content, i.e. net sum (11550 PLN) + VAT (3450 PLN).
- company X has received the entire list to issue an invoice to one bank account, thus it has free access to the money received and can be accessed by all business purposes.
- After January 1, 2020, the same operation looks different. Invoices calculated on the basis of an amount over 15,000 PLN gross, including the Split Payment amount. The process of paying for a fact looks like this:
- company X invoice display for the service performed or sale of goods to companies Y on the basis of 15,000 PLN gross,
- company Y makes an invoice payment to company X's bank account,
- company X receives the entire content, i.e. net sum (11550 PLN) + VAT (3450 PLN),
- the net amount (11,550 PLN) goes to the business account of entrepreneur X
- the amount of VAT (3450 PLN) goes to a specially created MPP account at the bank of the company X. The new regulations introduced the division of the invoice into two parts. The net amount goes to the entrepreneur's bank account, including the VAT amount, to the MPP account. In practice, this means that company X does not include the entire amount that was invoiced, only treated its net value. The value of VAT on the MPP account can be assigned to the amount paid to the tax office, ZUS or contractor. The options still available for with-drawing money from the MPP account to the entrepreneur's business account are treated with writing a relevant letter and waiting for a tax decision, even up to 60 days.

- 1. What impact will Split Payment mechanism have on the financial liquidity of enterprises?
- 2. Suggest an alternative Split Payment mechanism and explain.
- 3. Will Split Payment mechanism affect the sealing of the state budget?
- **4.** Will Split Payment mechanism reduce investment in the enterprise? Please use the theory of economic profit to support your answer.
- 5. In the light of the opportunity costs theory, please explain the difference between the Split Payment mechanism and normal payment procedure.

3.7. Should bus drivers know economics?

Gabriel Staicu

Keywordsmarginal analysis, costs of production, average cost, marginal cost,
marginal revenue, optimal decision, profit, cost-benefit analysis

Introduction

One of the most important principle in economics is "rational people think at the margin". The aim of this case study is to demonstrate the great power of marginal analysis as a tool for solving managerial decisions in allocating resources. Let's start with a question. Should bus drivers know economics?

Case study

Suppose you run a new business in the transportation and logistics industry. Your local transportation company gets authorization and parking permits for the following route: Berlin – Szczecin and return. You hire Tom, a very smart teenager, to be your bus driver, and he gladly accepts your offer. The bus you owned has a total capacity of 100 seats. After a brief analysis of the costs of production, you identify the following relevant costs: gasoline, parking permits, Tom's salary, and you calculate the average cost per seat, which is 6 PLN. Since your activity should be a profitable one, you decide the selling price for a ticket is 10 PLN.

On the following Monday, the bus departs from Berlin at 12.00 o'clock, according to the schedule. Tom realizes that only 90 out of 100 tickets have sold and there is not enough time to wait for more potential travelers. Despite this, the bus leaves on time with 10 empty seats on board.

On the way to Szczecin, Tom observes a person standing with a placard in his hands with the following information: Szczecin and 2 PLN (exactly Tom's route destination and 2 PLN his willingness to pay for the ride). Tom has to make a decision and fast! So, the question is: *should Tom take this person or not*? Or, speaking like an economist, does the total profit of your company increase or decrease if Tom takes him? Before answering, just keep in mind that the average cost (per seat) is 6 PLN, and the price he would like to pay is only 2 PLN.

To find an answer to this question, Tom considers two methods. The first one is to compute total cost, total revenue and total profit before and after the decision to take him. He has a diploma in economics, and this task should be quite easy, but he realizes this method is time consuming and he cannot afford to be late to the destination. He recalls the needed formulas and the theoretical framework: Total Revenue = Price x Quantity Total Cost = Fixed Cost + Variable Costs Total Profit = Total Revenue – Total Cost TP = TR – TC

If (and only if) total profit increases, then the best option is to take this person to Szczecin! Going back to our case study, Tom has to compare the possible outcomes:

Before making the decision:

TR = 10 PLN x 90 occupied seats = 900 PLN TC = 6 PLN x 100 seat capacity = 600 PLN TP = TR - TC = 900 - 600 = 300 PLN

After making the decision:

TR = 900 + 2 = 902 PLNTC = 600 PLNTP = TR - TC = 902 - 600 = 302 PLN

Therefore, total profit increases!

Did you remember that Tom is a very smart teenager? He quickly realizes that if he stops to calculate according to the formulas mentioned above, he would definitely lose too much time. Therefore, he has to find another, faster method to evaluate this opportunity to increase the company's profit. And the solution is to apply marginal analysis! This concept might sound a little bit sophisticated but it refers to a comparison of marginal benefit and marginal cost of the decision to take the last traveler. The marginal benefit (in our case, marginal revenue) is 2 PLN, exactly the amount paid by this last person. The marginal cost of decision to take him is zero (or close to zero, since the gasoline consumption doesn't change, the parking permits are already paid no matter what the number of travelers is and so on). Thus, the marginal profit, which is the difference between marginal revenue and marginal cost, is 2 PLN. In conclusion, the driver should take the last traveler since the total profit will increase by 2 PLN. Surely, this method helps Tom make a good decision in just a few seconds! Another important insight is to focus attention on the relevant costs of an action and ignore others which are not relevant! For example, the average cost of 6 PLN per seat is not relevant information since 600 PLN is the total cost for the company no matter how many tickets are sold.

Before addressing some additional question, let us describe the theoretical framework of marginal analysis.

Marginal Revenue (MR): [Change in Total Revenue]/[Change in Output]

Marginal Cost (MC): [Change in Total Cost]/[Change in Output]

Calculating Marginal Profit (MP): MP = MR – MC

If MR > MC => MP > 0 => TP increases; therefore, the company should increase the output in order to meet its objective: maximize profit!

If MR = MC => MP = 0 => TP constant (maxim), then the company has reached the optimal level of output and maximized total profit!

If MR < MC => MP < 0 => TP decreases, then the company should decrease the output in order to meet its objective: maximize profit!

Recalling our data:

The marginal revenue (MR) is 2 PLN.

The marginal cost (MC) for taking him/her is 0 PLN (or at least negligible)

The marginal profit (MP) is MR - MC = 2 - 0 = 2 PLN

Therefore, the total profit (TP) increases by 2 PLN!

Questions

1. Sensitivity analysis describes how an optimal decision is affected if key economic facts or conditions vary. For instance, what should Tom's decision be if the willingness to pay of the last traveler is 1 PLN? Or what if the firm's policy is to offer all its customers one sandwich for free (which costs your company 3 PLN)?

3.8. Tenders – selection of the most advantageous offer or entrepreneurs' game?

Ewa Bizoń-Pożyczka

Keywords enterprise, price, costs, alternative costs

Introduction

The tender is a type of competition in which there participate the offers for the delivery of goods or services for the company organizing the tender. In Poland, the whole issue of the tenders is regulated by the provisions of the Act on the Law of Public Procurement. For the application of the Act, there are obliged entities that spend public funds. The parties in the contract are: the entity announcing the proceedings (Ordering Party) and the entity acceding to this tender (Contractor or Bidder). In practice, the following types of the tenders are the most popular:

- 1. unlimited tender the announcement of the tender is public, it is generally available, and any company can participate in it. The participation is declared by submitting the offer of a principal to the company organizing the tender;
- 2. restricted tender in the tender announcement, the Principal indicates the requirements that companies must meet in order to participate in the tender procedure (e.g. company size, age of the company, the bidder's portfolio). The Principals often require payment of a deposit bond or presentation of the tender guarantees. Companies fulfilling the criteria specified in the announcement submit an application for admission to the tender, on the basis of these applications, the principal selects companies that are invited to submit the offers, of which one is ultimately selected.

Another form of limited tender is the situation in which the organizer finds the companies that meet his expectations and invites them to submit the tender offer.

The aim of the tendering procedure is to issue public funds, which were allocated for this purpose in an economical and intentional manner, while maintaining a high quality of public procurement, i.e. obtaining the best results from given expenditures (Articles 35 and 44 of the Public Finance Act). The company announcing the tender must accept an offer that will not only be financially satisfactory, but also materially. The choice will be decided by the price (60%), the experience of the work manager (20%) and the period of the quality guarantee for the work performed (20%).

Often, signing the first contract is the beginning of a long-term cooperation. The tendering procedure, in contrast to the usual market game, is characterized by the fact that entities compete to receive an order on the most equal and transparent basis, knowing in advance the criteria necessary to achieve success. Is it certain? The following situations are of tender procedures and the intentions of the parties to join the tender.

Situation 1

The principal priced the service to be carried out on 9,000 PLN and announced an unlimited tender. Company A is a small specialized company and has all the required permissions to perform the service. In stock, it has the required materials and equipment; there will be no need to buy them, and the company has valued the cost of labor at 5,000 PLN. The company makes an offer of 7,000 PLN and wins the tender.

The situation shows that a small income or even its lack (wear of materials from the warehouse is also the cost of the service) can be profitable for the company. The company will gain a recommendation and the possibility to establish long-term cooperation with the Principal or another company in the industry. It also includes a completed project in the portfolio, which will open its access to some restricted tenders in the future. Although obtaining a small income at the moment, the company builds an image on the account of future orders.

Situation 2

The Principal evaluated the service to be carried out at 10 million PLN and announced a restricted tender. Company A is a large company that meets all the criteria. According to its calculation, its service will be profitable for at least 12 million PLN and makes this offer. Company B also meets the criteria set by the Principal, but in the calculation, it planned a cheaper labor cost – for some jobs, it wants to hire a subcontractor (of course with the appropriate authorizations). The service is priced at 9.8 million PLN. Company B makes the offer and wins the contract.

In practice, it happens that small companies that do not have a clout on the market, establish cooperation with industry giants. Company B, by winning the contract, will earn by engaging only a part of its own resources. A subcontractor company would not have the chance to obtain a contract by itself, therefore, when performing work for company B, it will earn and maintain an adequate financial flow. However, it will not get a recommendation nor enter the tender for itself. It is a difficult task to an entrepreneur at a given moment. The firm chooses earnings, while working on the image of another company

In this situation, it should be mentioned that sometimes it happens that the value of the service or investment is calculated differently by the Principal than potential Contractors. A professional company calculating the offer analyzes all aspects of the work. It is not only the cost of materi-

als used, fuel for commuting and labor. It is necessary to predict possible obstacles, know market forecasts, or simply appraise the work in difficult conditions due to the specificity of the place of the order (e.g. underwater, altitude, and difficult terrain works). If in the course of implementation, for example, electricity, material prices or labor costs increase (in the case of a shortage of workers), the investment time may lengthen and, consequently, a contractual penalty will have to be paid. In the final analysis, the profitability and profit of the contractor will decrease from the realization of such an order. Investment valuation is a subjective assessment, which is why the offers often differ greatly from the amount announced in the tender. If the offer does not affect at the expected value, the tender remains unresolved. The Principal must recalculate the value of the investment again and re-launch the tender. There are cases in which the investment is blocked for many months due to the lack of a contractor. This happens until the discrepancy between the Principal's vision and the Contractor's offer is reduced.

Situation 3

The Principal evaluated the service to be made for 20 000 PLN and announces a restricted tender. Company A and Company B meet the Principal's terms. The entrepreneurs operate in a narrow branch circle and have known each other for years. They get along, establish a consortium and agree that the offer will be submitted by only one of them for the amount of 24 thousand PLN and because of lack of other offers, one company will win it. However, the entrepreneurs will do the work together and earn 12,000 PLN. In the scenario that they did not get along: company A would have submitted an offer for 19 000 PLN and company B for 18 000 PLN. One of them would have won, and one of them would have had to do all of the work itself, incurring higher costs and actually earning less than 12 000 PLN. A separate issue here is of course the decision of both entrepreneurs, which company will stand for the tender and which will therefore enter the tender for its own merits?

The situations described above show different decisions of the entrepreneurs in the face of the possibilities that offer winning the tender procedure Not only are the physical earnings for the work done important, but also the intangible benefits in the form of obtaining recommendations, establishing cooperation, the opportunity for further orders, building the image of a professional company. On the other hand, one should remember the alternative cost of choosing a tender order by a company (the cost of lost profits). A company has limited resources. The resources that the company will direct to the execution of the order from the won tender could be used in another, more profitable venture. It also happens that the entrepreneur must even move part of the resources from the ongoing project to the tender, which has strict deadlines. The company will pay a penalty for delays either at the tenderer's principal or for the other contractor (the profit on the order will be reduced). The lost benefits can also be a lucrative order that will appear after winning the tender, and the company will not have any available resources. There are also cases where the exclusivity clause is included in the tender order – the contractor, during the execution of the order, purchases the entire production of the principal. At first glance, it is very beneficial, especially when the contract is many months. However, the company will not sensibly exist in the industry for a year or two, and the return to the market may be difficult in this case. An alternative cost is the loss of the contractor's recognition and prestige, as well as the volume of production generated at full production capacity (production will be clearly lower during the months of return to the market).

The success of the tender additionally depends on the industry and the period in which it is announced. For example, in the construction industry after winter downtime, the emergence of tenders in early spring causes price wars and the desire to win at all costs. In the spring and summer periods, the price wars weakens due to the large number of current orders. On the other hand, in the autumn-winter period, at the end of the calendar year when budgetary units have to spend the funds saved, there is often a lack of willingness to implement the enterprise – the reason being the market saturation and risk calculation by potential Bidders (lack of people, equipment, time to implement new orders, fear of redirecting resources from another job).

Of course, it is unacceptable to deliberately lower the value of the offer, implore unfair practices of using cheaper alternatives than specified by the Principal, and offer the asymmetry of information. The Principal has knowledge that there may be additional obstacles or difficulties in the implementation of the project (e.g. wet grounds for construction, debris on the bottom of the reservoir, which is reported by him to deepening, or the area covered by periodic environmental protection, etc.). Persons accepting an order without having such knowledge may:

- 1. Bear additional costs and drive to the execution area to make an assessment (or order an expert opinion),
- 2. Accept the order trusting the Principal and then incur additional costs resulting from an unforeseen inconvenience.

In both aforementioned cases of the classic example of the "principal-agent" theory, the agentcontractor is in a losing position. If the principal acted honestly, he would value the work costs higher because of the inconveniences. Game theory and the "Prisoner's Dilemma" may be applied. The principal calculating the valuation of the order will prove to be honest and will bear higher costs of the investment, or will want to cheat, counting on the trust of the contractor and will bear lower costs of the investment. However, if he meets the bidder who predicts possible difficulties (who knows the area or environmental conditions), the tender will not be solved successfully, and the principal will have to bear the value of the order. The winners will then be contractors, because they earn more.

To sum up, the tender process is a kind of game of bidders and principals. There always appears an opportunity cost of lost profits that an entrepreneur could achieve by engaging resources in a different order than the tender. In addition, by asymmetry of information he can be cheated by the principal, then he must go through unexpected difficulties and contractual penalties for delays to finally enter the project implementation in the portfolio, get valuable recommendations and... take part in the next tender.

- **1.** List the basic types of tenders and indicate which is more advantageous for a large or small company.
- **2.** How is the value of service calculated?
- 3. What is the alternative cost of choosing a tender order?
- **4.** How does the game theory apply in the tender process?

3.9. Why are Last Minute Airline Tickets So Cheap?

Aleksandra Gąsior, Sabilah Margirizki, Yike Dai

Keywords Marginal Cost, choices, decisions, efficiency

Introduction

The marginal cost:

$$MC = \frac{\Delta TC}{\Delta Q}$$

where C – change of total Costs

 ΔQ – change of total Quantity

plays an important role in managing decisions of organizations or companies in setting a price for each product, especially a product with a fluctuating price. Cost, together with revenue and profit, can be a parameter in determining if a business is successful or not. If a business has a high revenue, and the total cost is also higher than the revenue, the company will get no profit from it when the available capital runs out. When the marginal cost equals the average total cost, the level of production accrues the most revenue for the company.

Nowadays we can see some airline companies selling economy tickets in a competitive fare. As buyers, of course passengers would like to search for the tickets with the lowest fare and highest quality possible. To make the persistence stable and expand in the market, at least 3 dozen companies have created an alliance within three groups – Star Alliances, Oneworld, and SkyTeam. These alliances formed to allow passengers to more easily find connecting flights and share benefits they have received from one airline to another. Furthermore, a flight ticket can usually be booked a maximum of one year before the departure date, especially if passengers want to book a connecting flight (a flight that operated more than one airline company). Not many people book their tickets at the last minute unless they have an urgent need. Additionally, for a one-way flight, the airline company should prepare the cost for the meal on board and airport tax per passenger. If the company does not calculate it well, they will not gain any money for the work they do.

Willy's Case

Willy is studying medicine; he is already in his fourth year of studies. His dream is to visit the United States. He and his parents agreed that during the summer break he will go to the United States to visit his family and then visit the most interesting and famous places in there. The only condition his parents gave him is to pass all his exams before traveling to the States. Unfortunately, this year the session starts exceptionally late and the exact dates of the exams are still not given. Luckily, for Willy he can take credits at any time; the most important thing is to be prepared for the exams. Willy is one of the better students of his year. All possible examinations that could have been passed have already been passed. He is left with his last exams, but unfortunately he cannot take them earlier, and he still does not know the dates of the exams. This situation complicates Will's intentions. He wants to book a ticket at American United Airlines. However, he cannot set a date of departure because he does not know when his exams will be. Two weeks have passed. Willy manages to reach an agreement with the professor individually and take the exam. Thus, he wants to buy a ticket for the day after the exam. When he tries to book a ticket on the airline's website, he is surprised by the fact that the toll was nearly half as much as it had been when he checked two weeks ago. The company is now offering tickets at a price of USD 650 instead of USD 1820 regularly. On the other hand, the company itself recorded ticket sales at the level of: 190/200 the day before departure.

- 1. Should Willy buy the \$650 ticket?
- **2.** Is it reasonable for the company to sell a ticket for \$650 considering the detailed cost for this route below(assume the flight capacity is 200 tickets):
 - a) Salary \$ 7000 per flight
 - **b)** Airport taxes \$200 per person
 - c) Passenger expenses \$20 per person
 - **d)** Avtur (fuel) \$ 100,000 per flight



4.1. ERASMUS+ STUDENTS

Anna Blajer-Gołębiewska

Keywords market structures, game theoretical approach

Two Erasmus+ students, Ezio from Firenze and Arno from Versailles, came to Sopot to study at the University of Gdansk, at Faculty of Economics. Although the planned period of mobility was finished, they decided to stay there for the summer. They wanted to spend their time at the beach and decided to undertake a holiday job: to sell food on the beach. In fact, Ezio came to this idea, and then Arno followed him. To get a permission, each of them had to decide which product to sell (each student could choose only one product: either ice-cream or corn). Once decided, they couldn't change the selected option, unless wanted to pay 500 PLN for this change. Arno said that he would not use this option for sure.

If they both sell ice-cream, they would share the profit of 20 000 PLN equally. If they both sell corn, they would share the profits of 18 000 PLN equally. If one of them sells ice-cream, and the second one sells corn, the first one gets 12 000 PLN, and the second one gets 11 000 PLN.



Figure 1. The decision tree

- 1. Complete the decision tree by inserting profits of each student in each possible situation.
- 2. Find the solution of the following sequential game using backward induction.
- **3.** What would happen if Ezio said that he is not going to pay for the possibility to change his option?

4.2. Fitness club "Energy Lifestyle"

Ewa Igniaciuk

Keywords costs, break-even point, market structure

Introduction

Fashion for a healthy lifestyle and increased awareness of the impact of movement on the human somatic system encourages more and more people to use fitness clubs offerings. According to a report prepared by Deloitte Germany and the EuropeActive organization at the end of 2017, 2.91 million Poles attended fitness clubs, that is 17.3% more than at the end of 2013. Following the growing interest in recreational and sport activities offered by fitness clubs, the number of emerging facilities, where people who are into active lifestyle practice under the supervision of professionals, is increasing. While in 2013 there were 2.4 thousand fitness clubs performing in Poland, at the end of 2017 there were already 2.6 thousand of them, most of which were in the hands of small, private operators, and only 8.38% of clubs operating in the group belonged to 11 of the leading network operators. The growth potential in the fitness industry is still high, and the consolidation processes observed in the world, achieved through mergers and acquisitions, are running at a slower pace in Poland. The growing demand for functional training and aerobic classes for marginalized groups such as: pregnant women, mothers with small children and older people means that not only large network clubs have the chance to gather a large client portfolio.

Description of "Energy Lifestyle" project

As a person who likes movement and constant contact with people, you have decided to open your own business, the subject of which will be running a fitness club. You investigated the market offer and came to a conclusion. Due to the fact that the gym on the neighboring estate does not offer any functional training and aerobic exercises, you will start running your own venture with these kinds of motor activities. The concept itself seems even more attractive since the area where you want to locate your business is inhabited by many young active people. In addition, in the newly established shopping and service arcades there is a lot of space that can be adapted for this type of business activity. The funds needed for adaptation work and furnishing the premises will come from non-returnable subsidies, family loans and bank loans.

You estimate monthly fixed costs (including the rent, payment for utilities, administrative costs, renovation, marketing and depreciation costs, interest on the loan) at 30,000 PLN. The fitness trainers will be paid 8 PLN for every participant of their group workouts.

- 1. What market model is represented by fitness clubs operating in Poland? Justify your answer briefly.
- 2. List three ways to increase profit by non-competitor producers.
- **3.** How does the expansion of global fitness networks in the Polish market affect small fitness clubs?
- **4.** Are global mergers and acquisitions in the fitness industry beneficial for fitness club customers?
- 5. Using the data from the text:
 - **a)** Calculate the monthly break-even point (quantitative), assuming that the average admission fee will be 14 PLN.
 - **b)** Determine how the monthly break-even point (quantitative) will change if the average income from the sale of drinks and nutrients per 1 club customer is 1 PLN.

4.3. God as an economist. Would He create perfect competition in our world?

Tomasz Bernat, Daniel Kubicki, Adam Szyłejko

Keywords decision, freedom, perfect competition, imperfect competition

In this case study we would like to introduce the Perfect Competition Concept, explain its features, the need that lies under the creation of this idea, and why it does not exist in real life economics.

In the beginning, there was chaos. Some people may say that nothing has changed since "then." Others would say that nature begun its cycle billions years ago, and that's where we come from – ergo, we are all subject to nature's rights. Now, we would like to focus on that idea, just to emphasize the nature of the economic concept of perfect competition.

That being said – God created our world, and everything that surrounds us – but what's more important – He created us, humans. God is transcendent, omniscient and almighty. After creation, he let life on Earth go on. Then, we, humans, created groups, countries, economies, the internet, and we still go on – but it's all under "God's rules".

Proceeding to the main idea of the case study – let's take a closer look at the perfect competition concept. It is a theoretical market structure in which some criteria are all met simultaneously. These criteria are, for example, that all firms sell an identical product: in other words the product is a "commodity" or "homogenous". The other is that market share has no influence on price: customers have complete (perfect) information about the product being sold and the prices charged by each firm. Another criterion is that resources such as labor are perfectly mobile. The last exemplary criterion is that firms can enter or exit the market without any cost. As we can observe, these criteria are very strict and do not exist in contemporary economies.

Now that we've learned the criteria, it's high time to get back to our prime economist – to God. Of course, He is not bound by any rules – but we imagine His deeds as perfect – since the whole idea of a God is founded on His almightiness. So – he created the world and he set some rules. What do you think? Would he actually want us to follow the idea of perfect competition or not?

It seems that if we lived in a perfect world, such a concept would work too. But does this actually fit into our world? Do we really seek His guidance in the economy? It may sound like a philosophical question, but it may help us better understand why perfect competition is not that perfect.

Why is it even called "perfect"? What do you think – would you rather have only one, perfect option or multiple unperfect options? It seems very easy. Perfection is perfection, no matter what. If we had the chance, we'd chose the perfect way.

It's good to know all of the features of perfect competition, but why do we even talk about it when we already know that it doesn't exist in the real world? However, this idea is more practical than we think. It was created to depict a very complex phenomenon in a very approachable way. Since the whole economy is a set of very complex laws and internal dependencies, if we were to examine them every time one by one, we would use all of ours labor force trying to explain them instead of drawing the correct conclusions and then using these conclusions to operate in the market.

To sum up, the concept of perfect competition:

- simplifies the complexity of economics phenomena
- is helpful in creating other economic models
- helps with understanding real-life behaviors, even though it doesn't exist in real life.

Now that we know what perfect competition is, let's think about why it does not exist in real life. Although some markets may be close to the requirements of perfect competition, there are some features that can never be met. For example, the requirement of *perfect information* is impossible to achieve since it is infeasible to possess all the existing information. In addition to this, there are several other obstacles that this theory faces when compared to real life. In practice, it is impossible to have a *homogenous product* on the market – the whole concept of competition itself is based on the idea of the diversification of products that would better suit different types of buyers. For example – when we go to the grocery store to buy some carrots, and we look inside the box of them, each is different from the other – they differ in shape, weight, color, size, age, etc. – and this is only inside one store! When we think about this problem including all carrot sellers, the idea of a homogenous product is even less possible.

What does it actually mean to our God-related case? We can observe that the world God has created has lots of differences. If we think about it in a more detailed way, it turns out that even though everything is made up of the same particles, the way they interact with each other make huge the differences that are all around us. Of course, we can produce, for example, two identical pens, but not knowing the nature of every smallest particle, we may only assume they are identical, because they're not. They may look the same, work the same, but in some way they differ from each other – for example one would last longer than the other. The following conclusion may sound very crass: we are not gods. The whole concept actually, even if we does not treat about it, requires us to achieve some kind of a godly state where we would be able to manipulate reality to create own rules.

Where's the economy in there? Well – nowhere. In a world inhabited by godlike creatures there's no need for economy to exist – since every entity may create what they need – there's no lack of resources. Going further – the economy exists because the world is not perfect, and since it's not perfect, perfect competition cannot occur. It is understandable now – but knowing that we still keep trying to get closer and closer to perfection. Perfection sounds very complex, but in fact it's very simple. However, our world is not simple.

The other example is a little more complex. Let's try to think about the perfect competition concept with the example of a smartphone. Let us assume that in the future there will be only one

model of smartphones, and it would be considered the perfect smartphone – which means that the development of smartphones reached the supreme level of technology. It includes the design, size, shape, color, hardware, software etc. We need to make some more assumptions just to start considering this example – we need to know the purpose of the smartphone, it's capabilities, and we need to assume that not a single person in the world would like to add more functionality to it (is it even possible? Isn't our nature focused on "more and more" incentives?) In addition, let us assume that know-how is known to every producer that would like to produce such a smartphone. In these conditions, how close would this market be to perfect competition? Of course, this market would be closer to the requirements of perfect competition than any other. However – this example embraces only a few of them. It does not, for example, consider entry or exit barriers, which may be very high. We may expand our expedition inside this example ad infini*tum.* What do we expect from our smartphones today? What did we expected from them 4 years ago? What will we expect in 10 years? 20 years? Of course, the answer is simple - more. We don't know what "more" means yet, but there always is more. This may never end; the same as perfect competition may never happen. Why? Because of the human nature. And the few other economic aspects we talked about above.

Finally, lets come back to our leading idea. We know that the economy we talked about is run by us – humans. That's why it might not be perfect. What about God? If He ran the economy, if He was the superior economist of the world, would He like perfect competition to exist? Of course, we will never know that, but – we have some very simple but not that obvious hints everywhere around us. There are two types of humans in the world: men and women. And they are different not only between both sexes – but also within. Why would God create this diversification if he wanted us to have a perfectly competitive economy? We hope that now the perfect competition concept is clear, and especially, that we will remember that it will never exist in real-life economics.

- 1. What are the requirements that perfect competition has to meet?
- 2. What is the concept of perfect competition useful for?
- 3. Why will we never have perfect competition in reality?
- **4.** Do you agree with the hypothesis that God would not introduce perfect competition? Give some examples to support your statement.
- **5.** Imagine that God actually created perfect competition in our world. What do you think our economy would look like? Try to think about the whole economy, what influence would this have, not only in regard to perfect competition?
- 6. In your opinion do you think the free will that God has given us plays a vital role in the economy?

4.4. Monopoly – a destructive or creative power? State monopoly in Poland

Aleksandra Gąsior, Mikołaj Pastuszka, Rafał Mokrzycki

Keywords monopoly, determinants of market monopolization, state monopoly

The subject of this research is whether a monopoly is a destructive or creative power? Basically, when people talk about a monopoly, they often associate it with an organization that has control over the market and with no other competitors. Moreover, when they talk about a monopoly, they do not see the effects of state monopolies on the economic well-being and their future life.

Usually, citizens of different ages may think of state a monopoly as a totally useless feature, unless they see benefits, which may come from it. A brilliant instance is social security, a well-known example of a governmental monopoly. It is a very controversial case in which people are often against pay-as-you-go pension financing, and it is difficult to find adherents of this way of saving money for the future.

Why? Citizens who are working legally are obligated to pay social contributions monthly. They have to pay some amount of money to protect their future pension, but in today's terms it is not worth it at all. Regardless of the fact that a worker is paying money for a future pension, employees should be able to decide whether they would like to pay for something that they may not receive in the future.

In today's terms, under Polish law, people who reach the appropriate age are gaining the rights to get this pension, but as soon as the law changes, they will lose it all in just a few seconds. It shows that people do not have civil liberties, and they are paying just for a chance to get the future pension. An example worth mentioning is the state organization in Poland, The Social Insurance Institution (ZUS), which is strictly connected to the above mentioned pay-as-you-go system. From what we already know, not everyone is happy with today's social security in Poland. Obviously that kind of system works the best for the government because it's an easy way to make additional money, but it also has a significant impact on citizens because a country cuts the right to vote whether a citizen is for or against paying contributions for social insurance.

Additionally, social insurance contributions are high for Polish workers' capabilities. Also, there is a different type of pension financing – open pension funds or individual savings systems. Each generation of legally working people finance themselves by putting away saving, which will be paid out when they reach the age of retirement. However, as a consequence it would cause a lot of problems because it is not that hard to lose a lot of money nowadays, by getting robbed or spending it while having mental distress. To sum up these few words about the state monopoly, it would be great not to pay obligatory social contributions, but also to have a right to choose between paying some amount of money to governmental organization regularly or trying to save money on our own.

Nonetheless, there is more to the meaning of a monopoly than just the state monopoly. It also very important to understand the private monopoly. It has influence on almost every country's market around the world. When a company would like to take part in a monopolistic market, it should meet proper conditions such as: being the only seller on the market, there should not be any close substitutes for the product or service that the seller/company is providing, and seller should have control over the supply of commodity. People may think that the seller would increase the price of goods when a company has a monopoly on market, but the truth is that they can't. That's why it's really hard to tell if the economic well-being might be affected when the whole state may interrupt the market if policymakers believe that the price is unfair for buyers or sellers.

From customers point of view, high prices make monopolies undesirable and the demand drops. However, from owners' point of view, high prices make monopolies very desirable, and they do everything to meet all of the conditions for maximize profit. That's the only reason why a perfect monopoly is a fair option for sellers and buyers. In this case customers are not taking any risk of overpaying for goods and services.

That's why the whole market is free to enter for everyone and only a few companies such as Netflix, Google, YKK and Facebook are monopolists in their branches. Taking everything into consideration, a monopoly is a perfect feature for governments because it may be used as a weapon against people who are not trying to overthink. If the whole monopoly would regulate every single market, people would spend their money in the same way as they obey the law.

- 1. What are the criteria for describing market structures?
- 2. What is a pure monopoly? Use known criteria to describe it theoretically.
- **3.** The Polish state monopoly, ZUS, is a company dealing with whole market. Describe why this is a monopoly?
- **4.** What gives ZUS monopoly power? Why?
- 5. How can small companies become a pure monopoly?
- 6. Is there any difference between state and commercial monopolies?

4.5. LULUCF – how many trees can be cut down in the forest?

Tomasz Bernat

Keywords determinants of market equilibrium, market structure, profitability analysis

The company, Lasy Państwowe, is one of the largest wood producers in Europe. In 2018, its production had Poland in 5th place in all of Europe. In Poland, it occupies first place in forest exploitation. Lasy Państwowe currently supplies around 42 billion of cubic meters of wood per year. At the same time, they generated revenues of almost 9 billion PLN (including about 8 billion PLN from timber production), with a net profit of 453 million PLN in 2017. The market development was dynamic. Production has almost doubled from the years 2001–2017 (from 25 billion cubic meters in 2001).

This increase is mainly due to the growing needs of the wood sector. The development opportunities offered by acquiring this amount of raw material have greatly influenced its development. The State Forests did not limit the production of the tree, thanks to which all the needs of the sector's producers were satisfied. Unfortunately, in the near future, EU regulation LULUCF (Land Use, Land-Use Change and Forestry) will be enforced. This directive is to introduce new principles for the management of forest resources. Its main goal is to reduce greenhouse gas emissions. According to the directive, each EU country will have an annual timber's production limit. Recent estimates made by EC experts, have set the production limit for Poland at 40 billion cubic meters.

Venue: The management of the State Forests

Participants: President and the board of Lasy Państwowe

President	Ladies and gentlemen, I think you are familiar with the latest content from the LULUCF directive. It is extremely unfavorable for our country and our company. The ques- tion is, what can we do and how will this affect our busi- ness?
Deputy President of Production	Mr. President, as we know, plans suggest a limit of 40 bil- lion cubic meters of forestry extraction for Poland. This is less than our current production. However, we must take into account that we are not the only producer of wood in Poland. According to experts, the annual timber production by entities independent of us is over 4 billion. The only thing we can do now is to prepare for this unfa-

vorable change. Unfortunately, it will also affect the entire wood industry.

Deputy President of Finance Yes, that means that if this limit would be set to 46 billion cubic meters for our country, it would ensure that we would operate at our current production level. Also, our revenues and profits would not decrease. With the reduction of production, unfortunately, it will negatively affect our financial standing. It can be assumed that the production limit for Lasy Państwowe will be set at around 36 billion cubic meters of timber. It is easy to calculate how much we will lose if the average sales revenues of one billion cubic meters of the tree is 200,000 PLN. At the same time, production costs account for about 90% of revenues for this production volume.

President Concluding, our company may be forced to reduce production, which will affect our current financial position....

In response to such a thesis, only silent nodding was a sign of the seriousness of the situation.

- 1. What is the name of the market structure in which the Lasy Państwowe operates in Poland? Give arguments justify your answer.
- **2.** How will the LULUCF regulations affect the tree production market in Poland? Draw a market chart that represents this. Specify how the price and the market quantity will change.
- **3.** Assuming that the wood production limit for the Lasy Państwowe will be set at 36 billion cubic meters of wood, determine the revenues, costs and profits of the enterprise.
- 4. Is this situation beneficial for the company? Present arguments both in favor and against.
- 5. Is there a production scale effect? What justifies that?

4.6. We need a lift

Michał Prusinowski

Keywords choice, costs, decision, market structure, opportunity cost, outsourcing

Introduction

You can't have everything. Although it is a universally acknowledged truth and rather obvious, it has particular relevance for economics. This example of common sense supports the most basic idea of the science – scarcity; the limited availability of resources in the world of unlimited wants. And here is where the economics begins. Scarcity forces people to make choices on how to allocate their resources – land, labor or capital. Every decision causes the loss of all the alternative choices. In economics, it is called the opportunity cost. The cost of lost possibilities of the decisions we didn't make choosing one of the available options. This basic concept is a *sine qua non* to the understanding of economics as well as to this case study.

Case study – NASA's new way of getting into space

After forty years of its own space transportation vehicle development, the National Aeronautics and Space Agency (NASA) decided to significantly reduce its rockets and space shuttle development programs in favor of cooperation with private spaceflight companies. The reason behind this was the inefficiency of the initiatives under federal jurisdiction. The two decades of work have proven that the space transportation programs funded by the federal budget and carried out by NASA have generated far greater costs than private-sector solutions achieved by companies on the free market.

On this basis, the agency has chosen to focus its effort on supporting already existing private spaceflight companies in their effort to reach the stars, which has been broadly considered as a more efficient, but most of all the cheaper, alternative. From among these companies, NASA would choose a future partner. The private sector support initiative has been divided into two stages. The first stage is the Commercial Orbital Transportation Services (COTS) program, which aims to choose promising companies and to grant funding to support their research and prototype construction work. The winners of the first stage would thereafter be proposed to become contractors under the second NASA program – Commercial Resupply Services (CRS).

One of the most important CRS contractors and long-term partner in NASA space projects has become SpaceX, the space transportation company founded by Elon Musk in 2002. The series of

CRS contracts awarded by NASA to SpaceX from 2008 to 2016 for delivery of cargo and supplies to International Space Station (ISS) obligated the company to 12 missions. In 2015, due to some schedule changes, NASA decided to extend the cooperation under CRS and to contract Elon Musk's company for an additional 8 ISS resupply missions by March 2020.

What's up with those SpaceX rockets?

In its efforts, SpaceX aims to achieve two main objectives. The first is the lowest possible costs of its services that will generate an increase in the space transportation market and the second – to provide a safe and reliable launch system, which will allow capturing the biggest possible piece of the growing market pie. The crucial means of achieving this target is the development of reusable space rockets. The first SpaceX's reusable launch vehicle reached the orbit in June 2017, and since that time, the technology has been used for commercial purposes, allowing SpaceX to further cut the cost of its services. The significant factor of the cost cuts has also been the production of all necessary components and software in-house, without any external providers. This unusual approach, non-existent on the market so far, lets SpaceX reduce parts' costs, in some cases, up to 90%.

The SpaceX technological achievement and its specific way of rocket production has allowed the company to lower the cost of the single low Earth orbit (LEO) launch form, on average, from \$120 million to \$56 million for a new Falcon 9 rocket or even \$50 million, if the customer decides to launch a vehicle that has already been used.



Chart 1. Number of rocket launches by company in years 2010–2018

The price pressure that SpaceX has been putting on since 2012 forced other competitors on the space transportation market to reduce their prices. Nevertheless, it hasn't stopped Elon Musk's company from a steady increase in its market share. 16 of all 42 commercial cargo launches in 2018 were SpaceX missions. There has also been a significant increase in the annual number of launches in the past four years, mainly due to the growing interest of telecom companies.

The financial results of the cooperation

As it was intended, the cooperation with SpaceX let NASA reduce spending on ISS resupply. The cost of a single Falcon 9 launch on average equaled \$89,000 per kilogram of cargo. Taking into account the payload lift capacity of the rockets used in the CRS program, it gives approximately \$168 million for a mission. It is nearly three times the price of what LEO offered to private customers, but the reason here is the distance the rocket has to travel.

The alternative to cooperation with private entities is the continuation of the Space Transportation System program, which ended in 2011. It is estimated that delivering of one kilogram of cargo to ISS would have cost \$272 000, which nearly triples the price of SpaceX Flacon 9. Furthermore, the cost of the development of the space shuttles also has to be taken into consideration. It would have generated an additional \$1 billion a year – almost 40% more than all the founding granted to SpaceX for the Flacon development under the COST program, in the period 2006–2011.

This is the way!

The most anticipated consequence of NASA's cooperation with SpaceX – the cut in the cost of space cargo transportation – has proven that the path the agency has taken has been right. It has also contributed to NASA's acknowledgment that the future of space transportation is on the free market, which has resulted in the decision of extending cooperation with private entities. In 2016, NASA contracted SpaceX and Boeing six missions each to fly astronauts to ISS between 2019–2024. In the future, NASA plans to involve private companies in its space exploration programs – especially in the return to the Moon and a manned mission to Mars.

- 1. What is NASA's opportunity cost of the usage of SpaceX space transportation services? Give examples.
- **2.** Indicate the possible reasons for private space transportation companies' advantage of efficiency and reducing the cost of space transportation services.
- 3. What was the reason that led NASA to decide to outsource space cargo transportation?
- **4.** Define the structure of the space cargo transportation market. Explain the reasoning behind this market structure.
- 5. What is the competitive advantage of SpaceX?
- **6.** Does SpaceX's development of space rockets lower the barriers to entry on the telecom market? Explain.
- **7.** Is NASA's financial aid for SpaceX's technology development the reason for the company's strong market position?

4.7. Go West

Michał Prusinowski

Keywords comparative advantage, opportunity cost, duopoly, trade

Introduction:

Scarcity is a universal beginning to every economics' story. This claim also applies to the case study. Scarcity and the necessity of choice-making lead to the notion of opportunity cost, which defines the "cost" of choices not made. However, the cost can be reduced – trade is one of the possible ways. In other words, cooperation in economics can be, and mostly is, a win-win situation. The condition for this is the law of comparative advantage.

Two Englishmen

The story might have, but not necessarily, taken place in the year 1675. It begun in London, and more precisely in London's harbor where the Mayflower II, the vessel that was to depart to the New World soon after, was just arriving at the dock. Among the passengers waiting there were Madison Washington and Jefferson Hamilton – two London's craftsmen, two friends as much as rivals, the story's two main characters, but above all two wealth-seeking English migrants looking for a better tomorrow. After many months of high waves, malnourishment and directions wrongly taken – the merits of the captain's maritime experience – the ship, with our protagonists on board, entered the waters of Massachusetts Bay, the last-named water area on the way to the city of Boston. No more than five hours later, drenched to the bone, Mr. Hamilton and equally wet Mr. Washington were already standing on the beach located a bit further from the port, right after docking of the ship at the small, but apparently very sharp rocks. The beauty of the city against the sunset caught their eyes. The place where they soon were about to begin the struggle for a better future and where they would open their workshops to supply the colony with hats and boots – highly desirable merchandise.

The good one and the other one

A few months later, after several weeks of effort for the benefit of other economic operators, our English protagonists made enough money to set up their workshops. In no time Mr. Hamilton and Mr. Washington had become the only manufacturers of boots and hats in Boston, which was due to the price and quality of their merchandise as well as an unexpected and still unexplained series of workshop fires all over the city. The production capacity of the two remaining competitors was far from balanced though.

Madison Washington was a significantly more efficient craftsman, able to supply the city with 60 pairs of boots or 15 hats every month. Jefferson Hamilton – a miner by passion and a craftsman by the choice of his father – was no match for his competitor, at least in boot production. Every month only 10 pairs of new boots were delivered to Boston's market by Mr. Hamilton. He somehow turned out to be an unexpectedly good hatmaker, able to make 20 hats every month. Never more, never less and never both of the items in the same period.

Let's produce both

Many years later – the years of desperate monotony – let's say in the year 1684, Mr. Hamilton and Mr. Washington had concluded it was time to make a change. The duopolists of Boston's head-wear and footwear markets decided to conduct an experiment in the field of production management. The experiment – a major breakthrough at that time – involved manufacturing the boots and hats simultaneously, but in various proportions. The gentlemen had made notes thoroughly to monitor any changes in the production efficiency caused by their decisions. On the basis each of them drew some lines, dots and wrote a few number which occurred to be decent examples of production possibility curves.





Chart 1. Hamilton's workshop production possibility curve

Chart 2. Washington's workshop production possibility curve

Let's trade

The simplicity of Mr. Hamilton's curve, in his sight bordering on boredom, combined with inherent thoughtlessness of the craftsman, made him think the proportion of the production didn't really change anything in his efficiency and therefore in the overall profit of the workshop. No matter what he had done, he thought, the outcome had always been the same and there were no resources he could afford to alter the situation. The gloomy mood of this English mine enthusiast was additionally worsened by the clear difference in the production efficiency between him and his greatest competitor, arch-rival and, under the right circumstances, enemy – Washington.

Mr. Washington looked at the results of both experiments in a completely different manner. In the curves and with his knowledge about the production of his workshop and of Hamilton's, he saw an opportunity for both. He had buried the hatchet and proposed to replace competition with cooperation. The rules were simple. Washington would give up hat manufacturing and Hamilton would do the same with his boots. From then on, the two gentlemen would be obliged to sell to each other the merchandise that wasn't produced by the other party. According to Mr. Washington, the trade between them would allow them to retain their customers, and it would lead to higher profits for both. How would that happen? Washington didn't want to explain that to Hamilton, but he hadn't insisted.

- 1. Identify and interpret the production possibilities curve of Hamilton's and Washington's workshops.
- 2. Calculate the comparative advantage of boot and hat production for both of the competitors.
- **3.** Based on the results of the comparative advantage calculations, indicate the possible reason for Washington's proposal. Was it better for both to give up the production of one of the two commodities? Try to answer on the basis of the production possibilities curves and your knowledge.
- **4.** Explain why the market position of the two workshops can be assessed as concentrated or dominated?
- 5. What are the disadvantages of duopoly? Are there any advantages?

4.8. Tesla, Inc.

Alexandra Horobet

Keywords **imperfect competition, barriers to entry, automotive industry,** innovation, entrepreneurship

Introduction

One of the fundamental topics in Economics refers to firms' behavior in competitive markets. Competition means, generally, that a multitude of firms is offering the same or similar products to consumers, but the degree of market competitiveness depends on how firms behave. The highest level of market competitiveness is delivered by perfect competition, characterized by homogeneous goods, no preferences between sellers, lack of market participants' influence on the price and no entry and exit barriers into and from an industry. Certainly, it is difficult for these criteria to be seen in reality, but economists use perfect competition as a theoretical construct that helps explain more realistic market conditions, which are found in the various market structures operating under imperfect competition. Imperfect competition, at large, is defined by differentiated goods and services, customers' preference for particular sellers and, as a result, market power for the participants that are able to influence market prices. Moreover, barriers to entry and/or exit are common in imperfect competition frameworks; usually, firms from industries that make it difficult for new competitors to enter enjoy high levels of profitability for longer periods, while industries where the entrance is easy attract new firms when the profitability is high. This case study explores the strategy behind overcoming the high barriers to entry in the automotive industry by one of the most innovative and successful companies, Tesla Inc.

Case study – Tesla, Inc.: innovation in a world of giants

The automotive industry changed dramatically in the last decade, shaped by sustained market dynamics where firms were forced to design products for each market and to shape customized relationships with their buyers anywhere in the World¹. Back in 1979, Michael Porter wrote that "In the auto industry economies of scale increased enormously with the post-World War II automation and vertical integration – virtually stopping successful new entry"² and for many

^{1 ***,} Global Auto Market. The ranking by manufacturer 2019, <u>https://focus2move.com/world-car-group</u> <u>-ranking/</u>

² Porter, M. (1979). How Competitive Forces Shape Strategy, Harvard Business Review, March 1979
decades his opinion proved to be right. Conventional automobile manufacturing is highly capital and energy-intensive, which determines the manufacturers to produce very similar automobiles in large volumes (this generates economies of scale), thus limiting the customization of the products for users and the entrance of new companies and/or new production techniques into the industry³. The automotive market leader in 2019 was Volkswagen, holding a market share of 11.8% and revenues of 186.62 billion euros for the first nine months of 2019, consolidated based on a good global management of its brand portfolio⁴. But a newcomer holds a leading position in the industry, with a market capitalization⁵ of 130 billion US dollars at the beginning of 2020 – this is Tesla, Inc.

How it all started?

Tesla Motors – whose name honors the famous physicist Nicola Tesla – was founded in July 2003 by a group of Silicon Valley engineers, with Elon Musk among them. From the beginning, Elon Musk's plans for Tesla were very ambitious. In 2006, Musk wrote a blog post "The Secret Tesla Motors Master Plan (just between you and me)"⁶ where Tesla's mission is seen as speeding up "the move from a mine-and-burn hydrocarbon economy towards a solar electric economy" and the long-term plan for the company is introduced as building "a wide range of models, including affordably priced family cars".

In 2007, Ze'ev Drori, an Israeli businessman and engineer, replaced co-founder Eberhard as Tesla's CEO, and his task was to bring Tesla's electric Roadster, its first car, to the market no later than April 2008. Musk's strategy to enter the automobile market was to start with a "minimum viable product"⁷ and then expand. The car was expensive and produced in low volume, but the "starting small" strategy helped Tesla overcome the time needed to bring technology to mass consumption and the lack of economies of scale, since the company did not have at the time large factories to produce the Roadster. Therefore, their initial objective was to bring to the market a niche product that may be profitable on low volume. On February 1st, 2008, Tesla handed the keys of the first Roadster to Elon Musk (he was the company's chairman then). One month later, Tesla began the regular production for the Roadster, and the vehicle was produced until 2012. The car was priced at \$109,000, and Tesla sold 2,450 units in over 30 countries until January 2012⁸.

³ Bubna, P., Humbert, M., Wiseman, M., and Manes, E., (2016). Barriers to Entry in Automotive Production and Opportunities with Emerging Additive Manufacturing Techniques, SAE Technical Paper, <u>https://www .sae.org/publications/technical-papers/content/2016-01-0329/</u>

⁴ Figures collected from <u>www.investing.com</u>

⁵ The market capitalization of a company is calculated as the product between the company's current stock price and the number of shares issued.

⁶ https://www.tesla.com/es_ES/blog/secret-tesla-motors-master-plan-just-between-you-and-me?redi rect=no

⁷ Rancic Moogk, D. (2012). Minimum Viable Product and the Importance of Experimentation in Technology Startups, Technology Innovation Management Review, <u>https://timreview.ca/article/535</u>

⁸ Woody, T. Tesla Hits Accelerator Despite Q2 Revenue Miss, Forbes, 25.07.2012, <u>https://www.forbes.com</u> /sites/toddwoody/2012/07/25/investors-hit-accelerator-despite-tesla-q2-revenue-miss/

Successful partnerships

The production of Roadster was the result of a partnership that began in 2004 with Lotus, a British company, whereby the latter company would help Tesla design, engineer, support technology development, and assemble Tesla's first vehicle. Elon Musk and the other co-founders knew perfectly well that they could not afford to wait, as they had neither the massive capital needed, the diversified range of products, or the luxury of spending as much money as the existing competitors in the automobile industry. The partnership with Lotus provided Tesla with a viable solution for bringing an innovative product into the market quick and efficiently.

However, in 2008 Tesla felt strongly the effects of the Global financial crisis, and in October Musk announced that he was stepping in as the company's CEO. He delayed the launch date of the Model S to mid-2011, a needed decision, given the bankruptcy that knocked at the door at the end of 2008. The Board of directors approved a 40 million US dollars financing in convertible bonds⁹ that entered into force only at the end of 2009 (this generated supplementary problems for Tesla). This financing helped the company survive, but it needed more resources to develop its technology. And soon those resources appeared. Daimler bought 10 percent of Tesla's shares in May 2009 for 50 million US dollars, a follow-up of the strategic partnership the companies had for about a year regarding the integration of Tesla's lithium-ion battery packs and charging electronics in the first Daimler electric smart car. The companies announced that Daimler's investment would enable them to strengthen cooperation on "the development of battery systems, electric drive systems and in individual vehicle projects¹⁰. Panasonic also invested 30 million US dollars in Tesla in 2010 and formed a partnership aimed at developing batteries, as well as Toyota, which bought 50 million US dollars when Tesla became public – its shares were listed in 2010 on NASDAQ at 17 US dollars per share and the company raised 226.1 billion US dollars of financing. Moreover, Toyota sold Tesla its plant in Fremont, California, for \$42 million US dollars, thus offering Tesla a space for the higher-volume production of its future vehicles. The company's first electric sedan type of car, Model S, was already announced in March 2009, and by May of the same year Tesla had more than 1,000 reservations for the new model.

Dealing with network externalities

There are many industries – such as payment processing, social media, software development – where the value of many products depends on the number of users – this is called the network effect¹¹. These effects are a potential source of market power for larger firms with many users, since it makes it costly for smaller companies or for potential newcomers to enter the market; therefore, it is attractive for new entrants to offer subsidies to the initial users in order to reach the

⁹ Convertible bonds are coupon-paying bonds that can be converted into a preset number of common stocks at certain moments until maturity and usually as decided by the bondholder.

¹⁰ https://www.tesla.com/es_ES/blog/strategic-partnership-daimler-acquires-stake-tesla?redirect=no

¹¹ Van Alstyne, M.W., Parker, G.G., Choudary, S.P. (April 2016). Pipelines, Platforms, and the New Rules of Strategy, Harvard Business Review

critical mass needed for the product to be profitable¹². Musk understood that a larger network of charging stations for electric cars would increase the value of Tesla vehicles. Thus, Tesla created a Destination Charging program whereby participating hotels, restaurants and shopping centers were subsidized to install Tesla Wall Connectors¹³. Also, the company built a network of faster charging stations – each costing 500,000 US dollars for Tesla – that in a 30-minute charge provided cars with electricity for 270 km. In the same vein of exploiting network effects, Tesla built its own operated service centers through Tesla Service Division, that offered customers remote diagnostics and the full support of Mobile Service technicians, which reduced the clients' need to even visit a physical center¹⁴.

Lastly, but not least, one of the biggest steps Tesla has taken towards using network effects was the decision to open their patents to the public, thus encouraging other firms to develop electric cars – somehow following its own example of using other companies' technological and manufacturing infrastructure. Besides encouraging competition in the automobile industry and putting pressure on the other automotive companies, this step was considered "a critical nudge that the ground-swell of electric cars being planned worldwide are a key part of the fix for climate change"¹⁵.

Entrepreneurial thinking as industry disruptor

From the beginning, Tesla's approach to the automobile industry was deeply rooted in the entrepreneurial ideas developed and implemented in Silicon Valley. Thus, despite disbeliefs in the potential competition between electric cars and traditional vehicles, Elon Musk and Tesla were able to overcome the high entry barriers in the automobile industry. Understanding and living in the Silicon Valley's highly competitive, innovative and uncertain environment, Musk positioned himself and Tesla as leaders¹⁶. More than 15 years ago, when Tesla sold its first cars, the fundamental change of the automobile industry began, without the "giants" coping with it. Tesla established the direction for the entire industry and now almost all car companies already developed or are in the process of developing electric or hybrid cars. This was made possible by thinking "outside the box", which avoided following trends and creating new markets.

¹² Tucker, C. (2018). Network Effects and Market Power: What Have We Learned in the Last Decade?, Antitrust, Sping 2018

^{13 &}lt;u>https://www.tesla.com/en_EU/destination-charging?redirect=no</u>

^{14 &}lt;u>https://www.tesla.com/en_EU/service?redirect=no</u>

¹⁵ Schmidt, B. – Tesla's free-to-use patents are all about sustainability – and strength, The Driven, 4.02.2019, https://thedriven.io/2019/02/04/tesla-patents-free-to-use-sustainable-strength/

¹⁶ Ferenstein, G. – Elon Musk: Tesla will be 90% automated next year, shame on Silicon Valley if 'we're not the leader', Venture Beat, 2.10.2014, <u>https://venturebeat.com/2014/10/02/elon-musk-tesla-will-be-90-automated-next-year-shame-on-silicon-valley-if-were-not-the-leader/</u>

Questions

- 1. Identify the conditions for imperfect competition in the automobile industry.
- 2. Which were the most important entry barriers in the automobile industry that Tesla faced?
- **3.** Discuss the strategy that Tesla employed in order to overcome the entry barriers in the automobile industry.
- **4.** Compare Tesla's experience with the strategies of companies from other industries that had to overcome entry barriers. How would you assess Tesla's success?

Useful links

- <u>https://www.researchgate.net/publication/283001846_Overcoming_Barriers_to_En</u> <u>try_in_an_Established_Industry_Tesla_Motors</u>
- <u>https://blogs.ufv.ca/sasi/files/2019/08/Thomas-and-Maine-2019-Market-entry-strate</u> <u>gies-for-electric-vehicle-start-ups.pdf</u>
- https://www.cambridge.org/core/journals/management-and-organization-review/ar ticle/tesla-and-the-reshaping-of-the-auto-industry/5E551257839D03D5E430F61CB9 3AFA62/core-reader

4.9. How much is coronavirus?

Tomasz Bernat

Keywords gambling market, determinants, profits, market structure

Introduction

Have you ever wondered how much a virus attack can cost? It does not matter whether it is the "popular" influenza virus, measles or "recently fashionable" coronavirus. What is the cost really about? Of course, this is not related to the production of the virus or its transport, especially for military purposes. It is more appropriate to accept all the opportunity costs associated with the operation and functioning of people or businesses that will be affected by virus attacks. The attack of such a biological enemy is in this case quite similar to the attack of computer viruses. Certainly, it can interfere significantly with ordinary activities.

Coronavirus: How Many People Have Recovered?

What is the notorious coronavirus? As reported by the World Health Organization, Coronavirus is a large family of viruses found in both animals and humans. Some infect people and are known to cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). A novel of coronavirus (CoV) is that it has not been previously identified in humans. The new, or "novel" coronavirus, now called 2019-nCoV, had not previously been detected before the outbreak was reported in Wuhan, China in December 2019.

As coronavirus continues to spread, global media coverage has been predominantly focused on the number of new cases of the virus recorded around the world as well as the number of deaths it has inflicted. Statistics regarding the number of people recovering from the coronavirus have not attracted as much attention, but they do exist. For example, the number of who people died in car accidents is still bigger, as with the number of victims in gun shootings.

As of February 11, 2020, at least 4,200 people have recovered, the vast majority of them in China. Similarly, other countries have seen 10 recoveries. Even though the statistics are promising, there are still more than 43,000 confirmed cases of coronavirus worldwide. Below, the chart presents the number of cases on the world scale.



Chart 1. Number of People recovered from Coronavirus

Small virus vs. big business

Can such a small thing like a virus, invisible to the naked eye, affect business? It turns out that yes! Wherever business gathers many people in one place at a time, there is such an impact. Probably the most famous example is airlines that not only limited their routes to the most vulnerable places, but even stopped flying to China. Following this obvious example, there are businesses that are also losing. Such an example is the gambling market associated with casinos, especially the large ones. The chart below presents the annual income from gambling in selected places around the world.

According to this ranking, Los Angeles is not the largest business in this area. It is Macau in China that comes first. So, what is the impact of coronavirus on this business industry?

Coronavirus Closes World's Gambling Capital

Gambling revenue in selected cities in 2018



Chart 2. The revenue of casinos in the most known world places

The Chinese city of Macau shuttered its 41 casinos amid the coronavirus outbreak. At least 492 people in mainland China have died from the virus, including one person in Hong Kong, a special territory near Macau. More than 24,000 have been sickened by the pneumonia-like illness, which began in Wuhan last month. After 10 people in Macau fell ill, including hotel employees at Galaxy Casino, authorities sprang into action. For reference, closing Macau's casinos would be like shutting down the Las Vegas Strip, but nearly six times as worse. As follows from the data presented by FORBES, and as follows from the second chart, Macau is the gambling capital of the world, which reported nearly \$37.9 billion (MOP 303 billion) in Gross Gaming Revenues in 2018. Las Vegas, arguably the most popular gambling destination in North America, is just a part of the business on the world scale.

How can tiny coronavirus affect these achievements? The shutdown of the casinos could result in Macau losing 5 to 15 percent of their gaming revenue in 2020. Closing casinos in Macau for half a month amid the outbreak could turn out to be costly, but it's necessary. "Of course, this was a difficult decision, but we must do it for the health of Macau's residents," Ho Iat Seng, the chief executive of the semiautonomous Chinese territory, said in a press conference, according to the *Times.* "Macau can still bear these economic losses."

Questions

- 1. In addition to businesses like airlines and casinos, please list other markets in which coronavirus may interact in a similar way as in these examples.
- 2. How did the impact of the virus become apparent in the example of casino games? Answer whether it affected all casinos in the world or only selected ones?
- **3.** What do you think is the market structure of the casino market in the world? Why do you think so?
- **4.** Can a coronavirus attack in this dimension significantly change the global market structure of gambling? How can it affect it?
- 5. How do you describe changes in the global market caused by coronavirus attack in terms of basic market law (supply and demand law)?

Useful links

- https://www.statista.com/chart/20735/coronavirus-macau-gambling/
- https://www.statista.com/chart/20785/coronavirus-recoveries/?utm_source=Statista +Global&utm_campaign=1837f14a58-All_InfographTicker_daily_COM_AM_KW 07_2020_Tu_COPY&utm_medium=email&utm_term=0_afecd219f5-1837f14a58-303635873
- https://www.who.int/news-room/q-a-detail/q-a-coronaviruses
- https://www.forbes.com/sites/greatspeculations/2019/09/24/is-the-lull-in-macaus-ga ming-market-here-to-stay/#70461e174dc7

4.10. Troubles in a football club

Maurycy Mierzejewski

Keywords opportunity cost, determinants of demand, homo œconomicus, homo RS

Introduction

Football is the most popular sport in Poland. Every week spectators gather at stadiums and many more in front of TVs to watch triumphs of their favorite teams. Many of them consider this activity possibly the most enjoyable way to spend a free weekend. Football brings out a lot of emotions – good and bad equally – which makes it very addictive, and therefore profitable. Football fans are ready to spend big money on their beloved team memorabilia. T-shirts, scarves, balls or whatever is marked with a logo or favorite team's colors for a true fan are more precious than gold. Such a devotion on a nearly spiritual basis creates material opportunity companies are very much aware of and ready to exploit.

Case study – Troubles in a football club

Zbigniew Nowakowski is the owner of a football club in Poland with its headquarters in the country's capital – Warsaw. The last season was very successful for Nowakowski's team. After a series of great games, the team won the Polish Cup, the most important trophy of the league. The final game alone filled up the team's budget with 3 000 000 PLN. The season was clearly perfect for both – the team as well as for the chairman, Mr. Nowakowski. During the summer break, Mr. Nowakowski summoned the team's annual management meeting. In the beginning, the chairman said:

– Ladies and gentlemen, as you know, not so long ago our team won the Polish Cup. We are proud of our players and the couch – Mr. Glik. We are proud. I'll say this again – WE ARE PROUD. And we are richer as well. I'm happy to say that we have 3 000 000 PLN in our bank account, and that is great news, for we have never had such money. However, what is unfortunate for all your plans, ladies and gentlemen, is that I've already decided how to spend the money. The stadium needs to be fixed. The money we have is enough to change all 18 000 seats, and this is what we will do. With rest of the money, we will try to stop the roof leak – Mr. Chairman – Said the coach, Adam Glik – In my view, that isn't a good decision, sir. We won the Cup, that's right, but our position in the league is not certain. Many past seasons we have ended on the verge of relegation. We need to strengthen the team. Recently I have received the report concerning a young player – very promising. He plays at the central stopper position. His club is eager to transfer him for a good price, but there will be competition, of that I am sure. But we can't lose the opportunity, sir. I advise we buy him as soon as it is possible.

– You are wrong, Glik – Said Mr. Jankowicz, the coach of the junior team – I believe that if we want to achieve something in the future, we need to invest in our junior players. It's foolish to spend so much money for only one player. I propose we focus on the training of young players, which will benefit us in the future.

– I can see your points, gentlemen – said Mr. Nowakowski – The choice isn't easy, but we have to make one. Let's take a short break to reconsider both of the pro*posals*.

- 1. In this case, what is the opportunity cost?
- 2. What are the determinants of football demand?
- 3. Who is of homo œconomicus or homo RS?
- 4. What can the management do to earn extra money?

4.11. TRAINING-INFO

Anna Blajer-Gołębiewska

Keywords minimal/maximal prices, surplus/shortage, market structures, price elasticity of demand vs total revenue, break-even point

Dear Sir and Madam,

The management of TRAINING-INFO will face many changes in the near future. Hence, we should prepare the company for a new situation full of changes.

We have the honor to invite you, as respected economic analysts, to attend the next Management Board Meeting. Your opinions about upcoming changes in TRAINING-INFO are highly desirable. We would like you to comment on economic and financial issues, to anticipate changes and then to help us implement your valuable advice.

Please refer to the attached document.

Yours sincerely,

Management Board of TRAINING-INFO



and training materials including:

- Accounting Software Training Courses,
- Microsoft Office Training Courses,
- The Basics of Programming,
- customized courses and workshops.

The management of the company aims to provide high quality learning experiences.

Confidential

TRAINING-INFO

Materials for the Management Board Meeting on Oct. 11th 20XX

We kindly ask members of the board to comment on the following events in the context of our company's activities. These issues will be considered at the next Meeting of the Management Board of TRAINING-INFO.

- 1. There are plans to raise the price of the main product of the company Accounting Software Training Courses. TRAINING-INFO is a market leader in the market of Accounting Software Training Courses in Kołobrzeg. Besides it, there are some small companies. We know that the reaction of consumers on each change in price is huge. When we raise prices, we lose many consumers, so maybe prices should be a bit lowered.
- 2. In order to raise the competencies of human resources in the field of information technologies, the government plans to implement a maximal price on courses and trainings in Microsoft Office. As a result, the management board has to prepare an analysis of predicted changes in the output (number of courses).
- **3.** We received an offer to conduct a series of customized workshops on Financial Analysis. After the preliminary meeting, the client set the price of 500 PLN for one workshop, which is parameterized due to the contract. The pure cost of preparation of one workshop is estimated to equal to 300 PLN, and it contains the salary of the trainer, office supplies, electricity. Moreover, there are other fixed costs that are not dependent from the number of workshops (for instance accounting staff salaries and insurance costs) and these are estimated to be 800 PLN, whatever the amount of workshops is. TRAINING-INFO should set the minimal number of workshops in the agreement.

- 1. Courses and trainings in the Accounting Software.
 - a) What is the market structure in the market for Accounting Software Training Courses (perfect competition / monopolistic competition / oligopoly / monopoly)?
 - **b**) Is the demand for the product price elastic or price inelastic?
 - c) Will an increase in prices lead to an increase or decrease in total revenues of TRAIN-ING-INFO?
- 2. Courses and trainings in the Microsoft Office.
 - **a)** Will the new maximal price (implemented by the government) of courses and trainings in Microsoft Office be lower or higher than the current price?

- **b)** Therefore, should the management decrease or increase the number of courses and trainings in Microsoft Office?
- c) Should the management expect a decrease or increase in the quantity demanded?
- **d)** As a consequence, will there be a shortage or surplus in the market for courses and trainings in Microsoft Office?
- 3. Courses and trainings in the Basics of Programming.
 - a) How many workshops will enable TRAIN-INFO to reach the break-even point?
 - **b)** What will be the value of total revenue at this point?

4.12. RONALD Ltd

Anna Blajer-Gołębiewska

Keywords market structures, game theoretical approach

Handouts for the meeting of the Management Board of RONALD Ltd. on Nov.4th 20XX

As you know, in the market of fast food restaurants in the Republic of Tompalia, there are only two competitors: RONALD Ltd. – our company – and Burger Queen Ltd. – our rival. During this meeting of the Management Board we have to analyze the problem of the Marketing Department.

Problem

We, the Management Board of RONALD Ltd., plan to attract customers by adding gifts to each order. There are three different projects of keychains: Happy Will, Happy Ronald and Happy Donald.

In order to lower costs, we will choose just one of these projects.

Yesterday, we learned that the marketing team of Burger Queen Ltd. also wants to add some gifts to each meal in their restaurant: a pen with a king, a notebook with a queen or a pencil with a princess.

Our analysts have already assessed the predicted additional profits that result from these campaigns. They are listed in the matrix below (in each cell the number on the left represents profits for Ronald LTD. and the number on the right represents profits for Burger Queen Ltd.).

		Burger Queen		
		King	Queen	Princess
Ronald	Happy Will	67	58	47
	Happy Ronald	99	5 10	76
	Happy Donald	10 4	66	82

Table 1. Expected profits (in million) for companies in each possible situation

- **1.** What is the market structure?
- 2. Is there a strategy which would always be better for us than a strategy used by our rival?
- **3.** What profit would each company get, if they both did not cooperate with each other (Nash Equilibrium)?
- **4.** What profit would each company get, if they both cooperated and signed an agreement to form a cartel?
- **5.** Would this cartel be stable?

4.13. Risky laundry

Aleksandra Gąsior

Keywords Market, market structures, competition

The president of a sewing company is considering further steps in the development of his company. "We have mastered the Podkarpackie region when it comes to sewing clothes. Now, I have been inspired by this article about starting a new business such as laundry. Given our region, there seems to be a few significant laundries that shape the market. In addition, the location of our company in the economic zone should help acquire potential customers. I need to gather some more information, and look at what this market really is."

Thursday, the day before Valentine's Day, Ewelina (assistant to the President) thinks all morning about how to surprise her husband tomorrow. Her reflection is interrupted by the boss:

– Ms Ewelino, have you prepared this information about the laundry market in our region?

Panicked, Ewelina tries to remember when the boss told her to prepare it. Unfortunately, he does not usually appoint someone to be responsible for a task. But if something is needed, he always asks Ewelina to answer.

– Mr. President, I don't remember you appointing me to do something like that last week – I don't like to explain myself, she thought. I wonder why he is so happy? – When exactly do you need this information and please remind me what it is supposed to be?

- Ms Ewelina, we talked about this at the end of the year ...

– Aaa, I remember that – it suddenly came to me. He ordered Basia to do it and in January. – Mrs. Basia was supposed to prepare it - she said.

– Ms. Basia has been away since January, so that's why I am addressing you. I need this information, preferably for tomorrow.

– Of course – this one has ideas, better than for yesterday, she thought. – Please tell me exactly what information to prepare?

- We need data on the most important companies in the region that have water laundries: what do their activities look like, what services do they offer, what does their capacity look like, what price do they offer, and which companies give service, etc.

- Mr. President, what exactly do we need it for, since we sew clothes?

The President just mysteriously smiled and invited Ewelina for an interview with the CFO (Mr. Jacek) tomorrow.

During the meeting...

– Mr. President, the materials that are widely available show that there are both dry cleaners and water laundries in the region. Focusing on water laundries, the closest is in Rzeszów (15% of the market), next in Siemianowice Śląskie (30% of the market), Krakow (20% of the market) and Jasło (15% of the market). There are numerous smaller locally oriented customers in their area. The activities of these large laundries mainly focus on servicing / washing work clothes.

– And here I see our competitive advantage – the President interjected enthusiastically. – Mr Jacek, I asked you to calculate the cost of buying laundry machines.

– Mr. President, depending on the size of the washing machines, prices range from 60 thousand Euro to 140 thousand Euro. However, I would like to point out that, in addition to washing machines, we need a chemistry dispensing system for the washing machines. It is not possible to assess the amount here, because it depends on the number of washing machines, and in addition to washing machines, you need equipment for drying work clothes.

– Yes. I took the dryers into account, but I skipped the aspect of the dispensing system – here the President was a bit sad.

– Unfortunately, this is another expense that increases the costs of the entire investment, – continued the Finance Director.

– I would not like to disturb, but the important thing is that I was not able to get information about which companies are their customers, and thus how much they launder during the month. As for the price, I was able to find out through my contacts who dictates the market conditions and what the price depends on - ended Ewelina's presentation.

- As a born optimist, I believe that the fact of having a sewing room gives us a huge advantage in relation to other laundries. What do you think we are risking, Director?

- 1. List the variables in which we distinguish types of market structures.
- **2.** According to the information provided in point 1, complete the information needed to identify the market from the case study.
- **3.** Based on the information obtained from the points above, determine which market was presented in the case study. Provide a definition.
- **4.** Knowing what market was presented in the case study:
 - a) list non-price factors and
 - b) state their impact on the price of the service. Use the example links for this: <u>https://</u> <u>franchise.wearejeff.com/news/are-laundry-franchises-good-business-oppor</u> <u>tunities;https://www.youtube.com/watch?v=1oXnCdMm8HA; https://www</u> <u>.bbc.com/news/business-</u>

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