Considering environmental values in online-purchase decision making

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Spread of Internet usage means the beginning of a new sales era, altering almost every element of the general purchasing process. This change affects the source of information of customers, the way merchants offer their goods, and the ways of inquiry, payment and communication as well[2]. Internet is one of the fastest growing sales channels, with a considerable turnover and more and more significant role in the communication arena. Researches show that most internet users utilize internet during their purchases. Hungarian data reveals that 65% of internet users have already done online purchases, and 92% of them had already collected information about products before their purchases. In Romania, statistics of Romanian National Bank (BNR) and RomCard show that the transactions made via Internet amounted to 93 million Euros in 2009, and this number is growing continuously.

Therefore the effects of Internet could not be ignored when examining environmentally aware behavior, conscious customer behavior, or when we intend to influence human behavior so that environmental values are taken into consideration during purchases. This article is focusing on the aspects of ecomarketing when examining the role of Internet within purchase decisions. We wish to find answer to the following question: what effect does Internet have on the role of environmental information during purchasing decisions?

Keywords: Online marketing, e-commerce, ecomarketing, purchase decision, information search

JEL codes: M31, L81

Literature background

One of the most generally accepted model of purchase decision making process is the Engel-Kollat-Blackwell model, which divides the purchasing process into five stages: (1) recognition of the purchasing problem, (2) information search, (3) alternative evaluation and choice, (4)

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[2] Darley – Blankson – Luethge (2010)

purchasing and (5) post-purchase behavior and consequences[3] (the base model was previously used by other authors and it is generally accepted in literature, and became a basic model ofmany marketing textbooks – see Hofmeister (2003.) as an example). Although individual stages could not be separated in practice all the time, and the process can even be a multiplayer one – it can be divided in the same way in case of Internet purchases as well[4].

Personal characteristics (motivations, values, life style, personality), social influencing factors (culture, reference groups, family), as well as situational and economic factors all have a definite effect on each stage in the model. Therefore we suppose that Internet and its effects also influence each stage – as it is supposed by Darley, Blankson és Luethge (2010), enlarging the model so that it can include the factors of online purchase as well. They had introduced the following factors to the model: website quality, website operation, interface, satisfaction with the site, and customer experience about the site.

It could be easily realized that Internet plays an influencing role on each phase of the process. In case of customers surfing, searching and getting info on the Web, the opinions, news and information on Internet affect the time and frequency of purchasing problem recognition. The source of information will be more and more online sources. Things read on the Web can have a determining effect in case of factors, product features and alternatives considered during the decision making process, and in case of attitudes, beliefs and intentions related to individual alternatives. It is more and more frequent that the purchase itself is made through the Internet. Moreover, online sharing of experiences is getting wide-spread, just like online post-purchase contacts (customer services, bug reports, invoicing, etc.)

A fundamental point of the process is the stage of gathering information – and it has quite a wide literature background as well[5]. It is not only purchasing itself, which makes this stage important. Understan-

[3] Based on Hawkins – Best – Coney (2003)
[4] Schmidt – Spreng (1996.)
[5] Detlor – Sproule – Gupta, 2003

ding information gathering phase is also a significant base of marketing management decisions. Understanding the process is a key factor of effective communication within ecomarketing as well. Searching information in Internet promises to increase the efficiency of online shopping by improving the availability of product information and reducing buyer search costs. Searching for product information and buying goods online have indeed become popular activities.[6] However, with the availability of more Web sites featuring more product options, comparing choice alternatives and selecting the most preferred option can become a daunting task for consumers.

Information search consist of external and internal search processes. When customers perceive the problem, i.e. the feeling of missing something, the difference between their expected and actual situation, it is triggering the purchasing problem, and they switch to search mode. The most simple and obvious way to solve the problem is to retrieve information from their memories, which is internal search. This information gained from experiences of previous purchasing decision processes and use (consumption) of products, as well as from passive search (previously stored information instead of intentional search related to the problem) could determine purchases completely (e.g. routine purchases, restricted problem solving). In case of environmental information it is based on environmental knowledge. Inasmuch as information gained this way is not enough for decision making, customers switch to external (active) search.[7]

Both in online purchasing situations and in traditional offline shopping, consumers collect external information in two ways. The first is a general method, related to the solution of the problem, the second is direct (specific) search.[8] The main point of searching related to problem solving is that customers do not know yet how they can meet their needs (and whether these needs can be met at all). In these cases, customers browse information without a specific information purpose: they have no knowledge (or at least they have less accurate knowledge) about the pro-

[6] Park – Gretzel
[7] Hodkinson – Kiel – Kennedy, 2000
[8] Rowley (2000)

duct characteristics that might be necessary, available or usable for decision making. In such situations, information search of customers is explorative, general and related to information search itself in many cases. In contrast, customers search for a given information or product characteristic during direct search. This type of search is more target oriented, customers are aware of what they are looking for, and usually they have preliminary information about the product, such as the name and manufacturer of it. The two types are not independent of each other, they are rather combined in purchasing decisions. Most authors think that customers almost invariably start the information search stage of purchase decision making process with a general search[9], and then they always get to specific search[10]. These two types can be differentiated well and often have separate names within internet environment: browsing and search.

External search is affected by several factors: perceived risk of customers (their previous satisfaction, involvement, cost), their personality (need of confirmation, striving for optimal decisions), complexity of the purchase, availability of information, disposable time, searching skills of customers (their knowledge, efficiency of earlier searches)[11]. However, as my research does not focus on modelling the entire search process, but getting acquainted with one segment of it, I have not examined most of these factors in the study.

Customers do not search for all the information. There is agreement in literature that customers settle for the collection and process of limited information, and they appropriate the energy needed for satisfying choices instead of optimal results in purchasing decisions.[12] The amount of collected information can be characterized by its depth and width. When examining information, width shows the volume of product features collected during shopping, while depth shows the amount

[9] Shim-Eastlick-Lotz-Warrington (2001)

[10] Not all the authors agree with this. In case of online purchase decisions their are other models. Bryan and Gersham (1999) describes thepurchase process as aset up of only specific searches (while the buyer does not get known the whole market)

[11] Srinivasan – Agrawal (1988) vagy Schmidt – Spreng (1996.)

[12] Ozanne – Brucks – Grewal (1992)

of information collected about individual attributes. They are difficult to examine, because the two characteristics are strongly related to each other, and both amounts can change during search.

The effects of online world can be shown in researches as well: more and more articles and analyses are published addressing the characteristics of online shopping. Naturally, the first wave of researches addressed Internet shopping, optimization of webshops and homepages as well as the attitudes related to them. Later on individual elements of the process, relation to offline shopping, awareness and decision making mechanisms of customers have also been dealt with. The most wide-spread method of research is quantitative survey. The main advantage of this survey is that it is relatively easy to conduct. However, the survey method is limited by people's insight into their own behavior and by their willingness and ability to reveal what they know (Sternthal, Tybout, & Calder, (1994) – which can have quite powerful distortion effects in such a complicated system. This is the reason why experimental methods come to the front, especially when examining causal relationships and focusing on individual parts of the purchasing process. According to Cowart and Goldsmith (2007), the use of these methods will be more and more wide-spread in future researches. [13]

According to the definition of Kerekes and Kindler, environmentally conscious consumers „are really interested in using environmentally friendly products; their decisions are based on criteria which they ponder carefully before their purchases." In their opinion, these criteria are: damaging the health of consumers, negative effects on the environment during the life cycle of the product, energy use, arising waste, materials used and harmful effects on other countries.[14] Other authors also emphasize environmental consciousness of consumption. It is „the realization of ecological consistency in purchasing habits and decisions."[15]

[13] Referenced in: Darley – Blankson – Luethge (2010)

[14] Kerekes – Kindler (1997.)

[15] Meffert – Kirchgeorg (1993) – Environmentally consciuos behaviour is not only connected with consumption, however other aspects are not relevant for this survey in this article.

Environmentally conscious behaviour is a common consequence of various factors. The starting point of models usually is that willingness to act is determined by environmental knowledge, environmental values, and environmental attitudes. Actual action is the result of this willingness.[16] The level of environmental knowledge can change during purchasing as well, therefore there are several things to study when examining this level. Expectations and anticipations (shaped by understanding gained from earlier knowledge and experience), as well as information obtained during shopping, the evaluation and use of them in decisions have to be examined.

According to Szabolcs Nagy (2011): „One of the main drivers of environmentally conscious consumption is the demand for environmentally friendly products. We have to understand thoroughly the (environmentally conscious) consumption behavior of Hungarian consumers, in order to make them more environmentally conscious customers. Schlegelmilch et al (1996) showed in their research that ecological knowledge has a definite effect on environmentally conscious behavior. This effect, however, is not sufficient to explain the behavior in itself, that is, other factors are involved as well.

The research

Searching for environmental information is a complex process, therefore experimental design was used (personal observation was combined with interviews for the examination), since purposes of the examination justify qualitative research preferably. This way we were able to get an insight into the details of purchasing process, the expectations and problem solving mechanisms of respondents. The guide used for the examination of the complex process is focusing more purchase processes, and more steps in case of every process.

The first experimental design is about the examination of a general purchasing situation: the respondent's washing machine is broken, therefore they have to buy a new one. In the first part of the interview

[16] e. g. Nemcsicsné Zsóka Ágnes (2007.)

they were asked what type of information they would search for, what are their expectations regarding a washing machine. In case of every expected information it was examined how much respondents think these information to be available on the internet. Product features and expectations related to the environment, as well as the importance of these, were only asked directly if the respondents mentioned them. The second stage of the research is the actual search: then respondents were asked to make the search to choose a washing machine for themselves, and to comment on what they were doing and the result of it while searching. The third stage is evaluation – finally everyone were asked about their satisfaction in terms of internet information and about their judgement of the search process and its result.

The other design focuses on environmental information: in this experiment the respondents were asked to find the most environmentally friendly washing machine. Importance of environmental values and environmental benefits of the products were asked by the same words that the respondent used all along. However, in this question a general phrasing had been used instead of repeating if the respondent talked only about specific environmental benefits previously (i.e. in case of those who talked only about energy saving, they were asked to choose the most environmentally friendly machine and not the one with the most energy saving). The course of the interview was the same as in the first task: expectations, search, evaluation.

The sample used during the research consisted of 17 people: this means 34 purchasing tasks, more than 75 searches and 100 examined sites altogether. The interviews were made by the students of MUTF (Business school in Tatabánya, Hungary) Marketing MsC programme as a part of the consumer behaviour course (along other primary surveys).

Convenience sampling method was used. All the Internet usage segments were included with quotas. Therefore there are people in the sample from much to no experience in online shopping. All of the respondents had been looking for some product information on the internet previously – although this filter condition is not a really strong filter, since most of the internet users (92 %) say in researches that they had

collected information about products before purchases.[17] Respondents were aged between 21 and 62 years, and there were both male and female respondents.

Results

(1) Expectations

All respondents had a very positive attitude towards information available on the internet. Most of them are convinced that all the information important for them (in order: price, size, place of opening/loading, energy saving, number of programs) are available on the Web – although sometimes they are not sure where they would find answers to their questions, but they solve it with the help of search engines. When purchasing washing machines, they name distributor and manufacturer sites as the primary information source in case of every product feature. In this direct purchasing situation most of them already have preliminary concepts as to where they would search: they consider the websites of shops and brands to be good starting points.

In terms of washing machines, environmental expectations relate to energy- and water saving (although most of the respondents mentioned energy saving, water saving was mentioned only by 20 % of them). They identify these characteristics with the environmental performance of washing machines. The source of environmental information is the same as it was in case of other product features: manufacturer and merchant websites. Respondents are convinced that this aspect will be included in the list, together with other aspects. Alternative information sources almost entirely were ignored in this stage.

A significant portion of respondents did not know exactly what they would look for. Answers like „a minimum of B energy rate" or „A++ is the best, but A is enough" signal that respondents are aware of these features of the machines. Most of the others also have some information, a lot of them do know the ratings as well, but they are uncertain about them („I think that class A is the most energy saving").

[17] In Hungary - based on the 2009. 2nd semiannual quick report of NRC

Finding the most environmentally friendly washing machine caused more headache, respondents hesitated a lot during this task. Most of them trust general search and would not start toward specific contents. They simply plan to enter the referred keywords („environmentally friendly + washing machine") into Google and they would search for appropriate information amongst the hits of the search engine. Only a few of them mentioned specific starting sources, where they are convinced to be able to find appropriate information. Although there is a clear need for examining sources other than manufacturer sites, respondents almost have no preliminary conception of these options. Very few of them mentioned customer generated sites (forums, blogs) among their preliminary expectations, and product tests appear in pre-search ideas (in the expectation-interviews) in almost no cases. Even so, respondents are optimistic in terms of the results of the search: they have faith in the presence of these information on the Web.

(2) The actual search

The search process did not cause any particular problem for the respondents in case of purchasing washing machines. It is general to use search engines as starting points. Even those who had named a specific site (usually a retailer) as the starting point do set off to find the site from the search engine.

Those who had pre-search ideas (named a specific site or brand) are not distracted by the list of results in the search engine, and follow their original intention. They find their originally planned target even if it is not the first place of the search engine – although sometimes they take by-pass roads toward sites found during their search (this can be seen mainly in case of search by washing machine brand: respondents check the official website of the brand. Although this is not the first site to check, but this was the site they planned to check originally).

The starting search queries chosen most frequently are brand names, names of retailers (mostly big chains), as well as the term „washing machine" combined with some other word ('washing machine' + respondents' location, 'washing machine' + 'purchase'). Paid advertisings (so called 'sponsored links') in the search engine were also

checked by the respondents if the wording seemed to be relevant.

During their search for purchasing information, all of the respondents used retailer sites. Frequently these sites were mainly the homepages of shops and chains known offline (have a store near their location). In the second place came the online shops, which were followed by the brand-sites, and some comparative sites. Use of this latter type is not typical (it can be seen only in case of respondents who had these types of sites among their first search results or in the sponsored links).

Respondents did not even think about other types of sites. Information is re-evaluated during the search, price becomes even more important during specific search, while some factors depreciate and become secondary (energy saving, programs). In other words, these factors are not used when narrowing the search and comparing brands (respondent mention these factors less and less while they keep on commenting their steps forward and valuing the results). These aspects come up again at the end of the search process: either before the final decision (respondents only check the presence of expected minimum levels in case of models among the possible choice options) or even after the search (reasoning their choice).

Respondents did find environmental information without problem (on product pages) – and they did not continue searching at all. They did not try to check it more deeply – not even those who were not sure how the rating works, what this information means. Most of the cases respondents had no idea about the real meaning of a rating and the difference between the levels – this was our feeling during the interviews and this feeling was confirmed later by the closing (evaluation) stage of the interviews. This information is only interesting so that the chosen machine brings at least the minimum expected level. Many of the respondents had totally forgotten about water consumption – also those who mentioned water consumption among their expectations – if it was not directly added to the product page. Respondents were not interested in new aspect found within product descriptions (level of noise or water consumption in case of those not mentioning it among the expectations). They commented the presence of these aspects as being positive

while reasoning their choice. They wondered „oh, really, this can be checked as well" – but they did not carry on these aspects to the later stage of purchasing. Although they thought existing filters to be useful, and they used these filters for narrowing washing machine search results where it was possible, no one mentioned the need for filtering by environmental aspects and they never missed the possibility of this.

Up to closing the information search stage of purchase decision process, respondents on the average did look at four sites in detail (not counting sites left within one minute, as being irrelevant or not meeting their expectations). Many respondents did not want to search outside of retailer sites, most of them did not even attempt to get information from other sources. They used only the inside search functions of the sites.

Based on their comments we can conclude that respondents trust information found on merchants' sites. And this was the answer they gave in the third (evaluation) stage of the interview. Information stemming from other sources were rare, but consumer information influenced choices to a great extent. When respondents found consumer comments next to product descriptions, they carefully read the comments and changed their opinions accordingly – i.e. took the products out of possible options. This behaviour shows that such information might be stronger than those given by the retailers and the producers – however, it is still to be confirmed by additional research.

Finding the most environmentally friendly washing machine usually caused a lot of headache (as we expected based on the pre-search expectations). Typically respondents made a very general query in the search engine (mostly 'environmentally friendly' + 'washing machine'). However, quite a few of them chose previously known sites dealing with this issue as a starting point.

If the respondents did not find more detailed information in the first results of the general search, they usually settled for considering the best of the categories they came to know earlier (A++ energy class) to be the most favourable choice from an environmental viewpoint. Some technical novelty (eg. detergent-free washing machine) caused some trouble if found. Respondents realised that the detergent usage is

one of the environmental problems caused by washing, but they had problems to find a washing machine model for this or did not think this reason to be convincing enough for choosing a model.

In most of the cases they failed to make an actual choice or the choice was very haphazard. Respondents originated this failure in lack of information („There is not enough information", „They write only a few lines", „No one writes about it in detail").

(3) Evaluation

Respondents considered the information they found to be enough for decision making. They thought search results to be reliable and usable, even if they did not manage to get detailed information in certain issues. In case of green information they missed trustworthy and available sources („the problem is that many people write about this, but there is almost no authentic source").

Based on the interviews we can say that:

1. There are environmental expectations within preliminary expectations about products and information. In case of the majority of respondents, environmental factor was present in purchasing situations (mostly as energy saving), therefore they listed it among expected information.

2. Respondents try to get information about the environmental value of the product at the same place where they get info about other product features (price, performance, etc.): the retailer sites. When respondents want to know environmental information of an actual item (greener washing machine), they also use these sites, but these are not the information sources exclusively used by them.

3. When searching about the environmental information they mostly use retailers sites, but many of them search other sites as well (consumer generated contents and sites of civil organizations). In this research consumer generated contents were not strongly represented: the role of forums and blogs is low in product purchase.

4. Respondents have no established source for finding environmental information. This is so much true that respondents did not know where to turn for factual information before doing the tasks – and most

of them did not know it either after completing the tasks.

5. Preliminary environmental knowledge about product categories reduces the motivation for outside search of environmental information. Environmental knowledge (preliminary knowledge) makes outside search more efficient.

Conclusions

Most importantly, the research showed that product choice is based on limited information even on the Internet. People make no special complementary search even where it would be possible. Therefore the special quality of the Internet, namely the possibility of making reasonable purchases with the help of information background (at least on the short run, in case of individual purchasing decisions) does not mean a significant difference compared to offline shopping.

Customers trust the information given by shops and brands, and do not search further. This is the reason why environmental information of products should appear at the place of purchasing decisions, within product information. It would play a basic role in passing environmental values. Without environmental regulation, of course, this could be realized by customer expectations. At the same time this shows that greenwashing can work on the short run as well. However, we have to be careful with statements like this, since customers get information about products and brands not only during shopping, and their conceptions shaped beyond shopping have a strong influence on the purchase decision making process.

It is also very important that customers have no stable source of green information. A trustworthy place like this, however, would make getting environmental information easier. Use of product tests is not general yet, use of consumer generated contents is still rare. An easily accessible, searchable, transparent, clear information system could be an excellent background for sites based on green positioning (be them either merchants' or content providers' pages). In case of trustworthy sites, customers will search for every information starting from that site. For example, one of the respondents started to search for environmental

information at the site where she buys washing nuts (kataboltja.hu). Even so, these sites usually have no searchable and visible consumption and purchase support beyond the products they sell.

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Increasing corporate tax competition in Europe

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The new member states of EU tended to maintain their capital absorption capacities and incentives aimed at the inflow of foreign direct investments by reducing their corporate tax rates. The decline in the implicit tax rate on capital was linked to the slowdown of economic growth. Governments fight not only for capital but also for the budgetary receipts. In most countries, changes in the tax legislation aiming at reducing tax rates will have no macroeconomic effects without comprehensive reforms in the redistribution systems and the administration aiming at cheaper government. This article presents the substance of corporate tax competition and summarize the conclusion of arguments for and against tax competition.

Keywords: European taxation, harmful taxcompetition, tax harmonization, corporate tax rates, financial externalities, double taxation

JEL codes: H21, H23

The significance of tax competition

The expression „tax competition" – though commonly used worldwide – is not the proper term for describing the phenomenon lying behind. The typical features of real economic competition (profit oriented effectiveness, economic rationality, self regulatory and price sensitive market, substitutable competitors, etc.) cannot be perceived in national legal systems. From the countries' point of view, tax competition implies that relying on their sovereignty in taxation, certain countries want to attract investors by establishing more beneficial tax regulations compared to other countries in order to acquire a broader tax base. Tax competition is related to regulatory power, „an institutional intervention of a country in the economic behaviour,"[2] the problem of reconciliation national jurisdiction in taxation and supranational regulation. The problem is originating in the fact that whereas the tax systems still be-

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[2] Deák Dániel (2005) p. 19

long to national competence, their effects are becoming more and more international. The sovereign tax policies of the individual countries cause financial externalities.[3]

The evaluation of the significance of tax competition is rather diverse. There are views that emphasise its magnificent role while others say that its importance is overrated in investment decisions, its role is actually peripheral.

According to the common opinion of the literature, when a multinational company decides where to make investments, the most important factor is the general state of the host country's economy. Depending on the type of investment, factors considered with specific weighting are as follows: political and economic stability, state of the infrastructure, the main features of human capital (productivity, qualifications, relative costs, etc.), the size of the market, income level, economic policy and regulatory environment and institutional background. The role of specific investment incentives is gaining in importance when the factors analysed are more or less similar in the potential target countries. In recent years, the relocation of production centres of EU based companies is becoming more and more widespread fuelled partly by the enlargement of the EU. The factors that encourage this process can be mainly derived from the differences between countries concerned.

Procedures that lead to tax competitions

The direct tax systems which are still in force evolved in the years following World War II. The economies were much more closed at that time than now. Companies invested their capital in the country of their headquarters, individuals earned their income in their own country. Applying the principle of headquarter country did not mean a problem in the tax system and it did not cause a conflict with the tax authorities of other countries.

When a national tax system was formed, other countries' tax related actions were not needed to be considered. They did not affect the deci-

[3] Mike Károly (2003) p. 260.

sions of indigenous economic participants, the economy's competitiveness and the formation of the national tax base. With the collapse of Bretton Woods System, obstacles to international capital flows gradually diminished and capital markets became more and more interlinked and global. The new development trends of the world economy strengthened the mutual dependence of national economies stronger.[4] Due to the acceleration of the globalisation processes, not only trade is becoming international but investments and production as well, reducing the significance of geographical boundaries and fuelling global competition. In this process, one of the main integrating factors is the EU – with its single market, economic and monetary union and with its common policy established in other areas.

With the deepening of globalisation, capital markets are becoming geographically more mobile which makes the tax bases more flexible. This gives the opportunity for some countries to create a more favourable tax environment than other countries have in order to attract capital. The differences in certain countries' tax burdens play an increasing role in investment and financial decisions in general and the selection of the geographical location of affiliates in particular. As a result of these factors, a special market is evolving that of countries, or „the market of sovereignty".[5] Thereby, the competition for the investors, workplaces and taxpayers among countries is placed on a new foundation.

The *political base* for the countries' market is formed by the priority of the principle of human rights according to which the rights and the freedom of citizens are more important than the self-determination and sovereignty of individual countries'. The *economic base* of the „market of sovereignty" is created by the fact that the expenses of leaving a country and its tax system is becoming lower and lower if more beneficial economic conditions are offered somewhere else. The mobility of the tax bases will probably grow further, which can be strengthened by the commercial and financial innovations of the Internet. Apart from

[4] Tanzi (2010)
[5] Mázsa Péter (2001)

the traditional political aspects of measuring performance (like for instance fairness), the requirement of economic effectiveness is gaining in importance in the countries' market.

The problem of harmful tax competition

Both positive and negative elements appear in the overall effects of globalisation on tax systems. The tax-collector countries do not like the fact that the capital flow which is freer than before provides new possibilities for minimising payable tax and avoiding tax payment. At the same time, tax competition encourages countries to reduce the taxes of mobile production factors themselves in order to attract capital. This effort can increase the tax base of the country attracting investments and it can lead to the erosion of the national tax bases in the capital exporting country endangering its tax revenues.[6]

Governments are interested in protecting their revenue sources. In order to stop the decrease in tax revenues and to reduce the budget deficit caused by overspending (within the conditions of tax competition) governments tend to enhance the taxes and duties levied on less mobile productive factors, like labour and consumers. These trends can lead to the fall of employment and it can distort the tax system as well. In a system, which does not prefer the internal capital accumulation, external source can only be obtained at the expense of the domestic taxpayer.[7]

The OECD plays a leading role in the international fight against damaging tax competition. It deals with this issue in a comprehensive project. According to the OECD[8] the tax competition can be potentially damaging if it distorts the financial and investment procedures, and thus undermines the fairness of tax structures, damages taxpaying morale, changes the desired levels and structures of taxes and public expenditure, shifts part of the tax liabilities towards labour, immobile assets and consumption which increases the administrative costs of tax authorities and taxpayers and the burdens of tax collection.

[6] Galántainé M. Zs. (2003)
[7] Balogh (2004a) p. 18
[8] OECD (1998)

The question is the border between damaging and non-damaging tax competition. According to the *„Code of Conduct for Business Taxation"*[9] member countries of the EU made commitments (the provisions of the Code are not obligatory) that in the future, their taxation systems will exempt from practices of harmful tax competition and, on the other hand, they will withdraw those previous provisions on tax allowances influencing the selection of the geographical location of business and compete with each other in the EU. According to the Code of Conduct, a tax provision can possibly be harmful if it results in a significantly lower tax burden than that, prevailing in the economy. According to Community law, taxation practices can be regarded harmful which constantly and systematically damage the fiscal neutrality, if it is not in line with the „tax system's nature or internal structure."[10]

Based on this, it must be examined whether the provisions of the actual tax law are integrated in the overall tax system.[11] In corporate taxation, exceptional preferences and selectivity are prohibited means not only in taxation, but in the Community's competition law as well.

The harmonisation of national tax systems can be one way to stop tax competition, but this may face political opposition in many cases – especially in the field of indirect taxes.

Tax harmonisation and tax competition

Legal harmonisation in the EU aims to ensure the free movement of goods, services, people (labour force) and capital by establishing the same competitive conditions in the single market. In the field of taxation, the requirement is that differences in national tax laws should not inhibit and distort trade and the flow of production factors among member countries.[12] The differences in national tax laws that inhibit integration may spontaneously fade away partly as a result of market trends, partly that of by tax competition among the countries. On the other

[9] OJ (1998)
[10] ECR (1974) p. 709.
[11] Deák Dániel (2005)
[12] Losoncz Miklós (2004)

hand, differences can be reduced by approximating consciously the different tax systems of the member states as well as by positive Community tax harmonisation. The Treaty of Rome aimed at abolishing taxes in trade among member countries which have the same effect as customs tariffs.

Corporate income taxation is so far in the competence of the member countries, but for establishing an internal market which is free of tax obstacles co-operation is needed among the member states if they want to avoid double taxation or extreme tax competition. In corporation taxation, the Council agreed on two directives and made an agreement in 1990 in order to ensure an uninterrupted international capital inflow.

The aim of the *Merger Directive*[13] is the abolition of tax obstacles to acquisitions, the transfer and the exchange of shares. According to the requirements of competition neutrality, the taxation of capital gain deriving from M&A may be delayed. The intention of the directive is that if there are changes, asset transfer or exchange of shares between companies having affiliates in two (or more) member countries of the EU, should be the same taxation system should be applied for these transactions as if these transactions were accomplished within a member country.

The *Parent and Subsidiary Directive*[14] ensures uniform taxation rules for mother and subsidiary companies working in different member countries. Its objective is to avoid eventual double taxation, which inhibits the free flow of capital in the single market. According to the directive, the profit of the subsidiary company should be taxed where it is operating, the mother company's country can not levy more tax on the profit, or the tax paid may be included in the tax liability. The other relevant legal source of harmonisation is the *Convention 90/436/EC*, which is a multilateral agreement applicable within the Community, and its aim is to avoid the associated companies' double taxation in accordance with the legalised supervision of the accounted price.

[13] 90/434/EC (OJ L 225/1. 20. 08. 1990)
[14] 90/435/EC (OJ 225/6., 20.08.1990)

The „*Code of Conduct*" and the „*Interest-Royalty Directive*"[15] play also an important part in the harmonisation of the direct taxes. The Interest-Royalty Directive is intended to abolish the taxation of royalty and interest payment of two associated companies and affiliates in various member states. The objective of the directive is to ensure that royalty and interest payments among member states are subject to tax only in the member state of residence, through the abolition of any tax thereon in the state of source. This directive aims to eliminate double taxation, and reduce time-consuming procedures and formalities to recover any deductions at source after these have been made. It also intends to avoid cash-flow disadvantages that arise as a result of the lapse of time between the date when tax is levied and the date when such tax is set off or refunded.

In connection with tax competition, tax harmonisation is important from two aspects. *First*, the harmonisation of direct taxes is narrow-ranged and does not contain provisions on the tax bases and the tax rate so far. The freedom of national tax systems is rather big, in the course of their regulations only some principles have to be considered. The national legal rules on taxation must not contain negative discrimination or provisions which might restrict the freedom of competition. They should be in line with the legal rules of the Community – which are much stricter – particularly in establishing provisions which may concern state aid. Member countries should respect the principle of Community loyalty while exercising tax sovereignty. The possibilities for tax competition are rather wide-ranging. *Second*, tax harmonisation could be used to restrain tax competition if proper community rules were established.

The *Common Consolidated Corporate Tax Base* (CCCTB)[16] proposal by the European Commission provides new set of rules for computing corporate tax base of companies operating across-borders in EU Member States. The CCCTB should be a new step of the tax coordination in the EU, but it does not specify tax rates. Member States continue to de-

[15] 2003/49/EC (OJ L 157/49, 26.06.2003.)
[16] COM(2011) 121/4, Brussels, 2011/0058 (CNS)

cide their own corporate tax rates. CCCTB probably will create increased but fairer tax competition within the EU.

Those countries that apply higher tax rates are sensitive to harmful tax competition and are in favour of determining a minimal tax rate. Since the collision of interests is very strong, no directive has been proposed on this issue yet. Furthermore, to harmonise structurally the national tax legislation it would be necessary to elaborate a coherent tax policy at the level of the Community which would be in accordance with the fiscal policy of the EU. However, the tax policy is not part of the EU's common policies yet. The fact that Community decisions on taxation may still be made only by common consent makes harmonisation difficult, and in certain areas even impossible in the enlarged (and still expanding) European Union.

Arguments for tax competition

Differences in taxation in member countries may create the possibility of arbitrage of tax obligations in the case of the mobile factors of production that may affect the international flow of capital influence its size and direction. The different tax systems can have an impact on the investment decisions of multinational companies. Differences incorporate income tax rates may have other consequences as well. Companies registered in different member countries are taxed differently which means they compete under different conditions on the same internal market of the European Union. As regards the promotion of foreign direct investments, the significance of tax allowances cannot be overrated because the general conditions in the host countries are becoming more and more similar within the regions and the wider world as well.[17] This is the outcome of globalisation and the diffusion of information and communications technologies, etc. With the integration of markets the market size loses in significance as a determining factor of foreign direct investments, but it strengthens the importance of those investments that produce for exports.

[17] Taylor (2000)

The increasing tax competition is also expressed in the reduction of corporate tax rates *Table 1.*

Table 1.

Corporate tax rates in 2004 and in 2011[18]		
	2004	2011
Austria	34.00 %	25.00 %
Czech Republic	28.00 %	19.00 %
Finland	29.00 %	26.00 %
France	35.40 %	33.33 %
Germany	39.58 %	15.00 %
Japan	42.00 %	30.00 %
Luxembourg	30.38 %	21.00 %
Netherlands	34.50 %	25.00 %
Poland	27.00 %	19.00 %
Portugal	33.00 %	25.00 %
Romania	25.00 %	16.00 %
Switzerland	24.10 %	8.50 %
United Kingdom	30.00 %	26.00 %
United States	40.00 %	35.00 %

The tax policy which encourages investments has spread in less developed countries, therefore its importance is even bigger now that the EU absorbed eight less developed Eastern –European countries. The new member states tended to maintain their capital absorption capacities and incentives aimed at the inflow of foreign direct investments by reducing their corporate tax rates further. The inflow of foreign direct investments is a particularly significant contribution factor to long-term sustainable economic growth and structural and technological modernisation. The tax treatment of FDI is a very important part of this policy.

[18] Source: KPMG (2004), Deloitte (2011)

The emergence of global companies will have a significant impact on government tax revenues. These companies are likely to be more sensitive to tax allowances, because they will be better able to exploit them by transferring their activities from one country to another. In the delocalization of international companies, the effect of the taxation aspects is more and more pronounced. Considering the entire European Union, those relocations that are not made into member countries (which go out of the EU) can cause direct or indirect, long-and medium-term or immediate difficulties and problems. One of the most directly perceived effects of relocations is that people will lose their jobs and the possibility of finding a new job is decreasing in the affected regions and branches. Those employees are especially endangered who work for an off-shore multinational company's branch or subsidiary. But nowadays it is not rare to see the relocations of small and medium sized companies that produce significantly more technological extra value added or that follow their customers abroad. Problems do not stop at the level of an individual because growing unemployment can have national consequences if, for instance, the budget needs to spend more on social purposes. Losing jobs can also lead to social exclusions and the growth of social extrusion of which affects are rather wide-ranging. The deterioration of the labour market and efforts aimed at saving on labour costs can reduce internal demand with the consequence of a slowdown in economical growth.

If European companies are forced to reduce R+D expenses on experiments, that is, to reduce their innovation capacity which forms the basis of their future while competing with other companies operating on lower costs. The companies which remain in the EU usually have to face higher costs than the competitors. This may ultimately cause a market share reduction and the loss of competitiveness for them.

All in all, it can be stated that the processes and the effects generated by company relocations may affect adversely the fulfilment of the objectives of the Lisbon Strategy, the establishment of more workplaces with better quality, social cohesion and the protection of the environment.

Arguments against tax competition

• The sovereign tax policies of the countries cause financial externalities.

• The reduction of the tax base may endanger the fulfilment of the national objectives and the insurance of public obligations.

• The tax burden of the factors of production will be distorted, the tax structure will be deformed, the tax burden of labour force and consumption will increase, labour force will be more expensive, its competitiveness will decline, and there will be problems with employment.

• Tax competition serves the interests of global capital.

• With the existence of various, often changing, sometimes inconsistent tax rules; the requirement for predictability and planning is not achieved in the national tax systems.

Arguments for tax competition

• Less competition barriers, better resource allocation, bigger welfare.

• Favourable tax policy for the less developed countries, which is an asset for catching-up.

• The general tax burden reduction can increase the competitiveness of the EU as a global partner.

• Tax competition forces the modernisation of the general government.

• At present, there is no political consensus on how to elaborate and run a coherent tax policy in the EU. Majority voting is an obstacle to this kind of changes

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Oligopsonistic resource markets – modelling firm decisions in Maple

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Economic reality offers us several situations in which the buyers of a certain production resource appear only in a limited number on the market, thereby being able to exercise significant market power against the producers. Our article proposes to study these oligopsonistic markets, modelling the behaviour of the buyers using the *Maple* software. Considering the limits of graphical representation we mainly focus on the case of oligopsony with two and three buyers, illustrating their decisions in two- and three-dimensional coordinate systems. During the modelling process we first concentrate on the case of market equilibrium. Since the state of equilibrium is not Pareto efficient, oligopsonistic firms tend to move away from the equilibrium to cooperate with each other in a cartel. Consequently, the last two parts of the article deal with the modelling of the cartel and the breakup of the cartel on an oligopsonistic market.

Keywords: oligopsony, resource market, Cournot-equilibrium, cartel, cartel breakup.

JEL codes: D21, D43

Introduction

Increasing market concentration can be observable in many industries. By market concentration companies on the demand or supply side may gain important market powers, which will result in different steps and decisions on company-level compared to perfectly competitive markets. Our article focuses on the case where the market of a particular production resource is concentrated, and the producers of the given resource face only a limited number of buyers. In economic reality we can find many such oligopsonistic markets, examples include several sec-

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tors of agriculture and the food-processing industry, where agricultural producers face only a limited number of players from the food processing industry (Just and Chern 1980, Sexton 2000, Vukina and Leegomonchai 2006). The same oligopsonistic power applies to the relationship between the logging and wood processing industry in several countries (Kallio 2001, Mohammadi Limaei and Lohmander 2008), but the market power of employers against employees on labour markets can also be considered as a form of oligopsonistic situation (Bhaskar et al. 2002).

The main purpose of our article is to present the oligopsonistic power on factor markets, and to model the behaviour of oligopsonistic firms on such markets using the *Maple* software. Due to the limitations of graphical representation our paper focuses mainly on the case of oligopsonistic markets with two and three buyers (duopsony and triopsony), illustrating them in two- and three dimensional coordinate systems. Numerical data corresponding to our figures can be found in the *Appendix* of our article. The first part of the paper deals with the equilibrium of the oligopsonistic market, while the last two parts focus on the modelling of the cartel and the break-up of the cartel on an oligopsonistic market.

1. Equilibrium on the oligopsonistic factor market

Let us assume that N different companies, using the same resource as input, produce one or more products, which are then sold on perfectly competitive markets. The resource in question is produced by many different producers, thus they do not have a dominant market position. The companies that buy the resource are limited in number so they have an oligopsonistic dominant position on the resource market. These companies are naturally using in their production other inputs besides the examined resource as well (e.g. other material resources, human resources, capital goods etc.). Thus, their production technology can be described as a multivariate function. Let j mark the number of each oligopsonistic company (j=1..N), y_j the j^{th} company's output, and i the number assigned to the examined resource. Hence, the production

function of the companies can be written as follows:

$$y_j = f_j(x_1, x_2, \ldots, x_i, \ldots) \qquad j=1..N \tag{1}$$

Since we focus in our article exclusively on the market of the i^{th} resource, the quantity of other production resources will be considered constant. Thereby we are able to simplify our model by reducing each company's production function to a single-variable function. Since there is no need to further differentiate between types of resources, let the lower index of *x* denote the number of that oligopsonistic company, that is buying the resource in question from the market.

Thus, the partial production function of the j^{th} company can be written as follows:

$$y_j = f_j(x_j) \tag{2}$$

where y_j marks the output of the j^{th} company, x_j denotes the quantity of the i^{th} resource purchased by the j^{th} company, and $f_j(x_j)$ marks the production technology of the j^{th} company.

Let *P* denote the market price of the products produced by the companies (which can obviously vary from company to company, but – taking into consideration the focus of our article on the resource market – we are not entering into detailed examination of the product market), and p_i the price function of the i^{th} resource, namely the inverse supply function of the resource market, which is dependent on the sum of the resource quantities purchased by oligopsonistic companies, namely $p_i(x_1+x_2+\ldots+x_N)$.

Then, the profit functions of the companies are the following:

$$\pi_j = P \cdot f_j(x_j) - p_i(x_1+x_2+\ldots+x_N) \cdot x_j - FCj \qquad j=1..N \tag{3}$$

where FCj marks the cost of all other inputs of the j^{th} company, which is considered to be constant. Equation (3) shows that the profit of the j^{th} company is not only a function of the resources bought by itself, but it also depends on the resource quantities purchased by the other companies.

Since we assumed perfect competition on product markets (meaning that the companies cannot influence the price of the product), and a re-

source market with limited number of buyers (that are able to influence the price of the resource in question), the following relationships hold:

$$\frac{\partial P}{\partial x_j} = 0 \text{ and } \frac{\partial p_i}{\partial x_1} = \frac{\partial p_i}{\partial x_2} = \ldots = \frac{\partial p_i}{\partial x_N} > 0 \qquad (4)$$

All buyer companies seek to maximize their profits, so the derivatives of their profit functions (3) yield the following conditions:

$$\frac{\partial \pi_j}{\partial x_j} = P \cdot MPj - \frac{\partial p_i}{\partial x_j} \cdot x_j - p_i(x_1 + x_2 + \ldots + x_N) = 0 \qquad j=1..N \quad (5)$$

where MP_j marks the marginal product function ($MP_j = \frac{\partial f_j(x_j)}{\partial x_j}$) of the j^{th} company. The $P \cdot MP_j$ product represents the value marginal product function and is marked with VMP_j. The negative elements of equation (5) represent the derivative of the resource's cost function ($p_i(x_1+x_2+\ldots+x_N) \cdot x_j$), which is termed as the marginal factor cost function of the j^{th} company, and is marked with MFC_j from now on.

Based on these, the first order condition of profit maximization for all companies is the following:

$$VMP_j(x_j) = MFC_j(x_1, x_2, \ldots, x_N) \qquad j=1..N \qquad (6)$$

Equations (5) and (6) show that the j^{th} company would be able to decide on the optimum quantity of the resource to be purchased, only if it knew the resource quantities to be bought by the other companies. Substituting these values with anticipated quantities the j^{th} company is able to determine x_j optimal resource quantity which leads to profit maximization.

This relationship – similar to the case of the oligopolistic market – is called the company's *response function* or *reaction function* (Kopányi 2007, Feuer and Szidarovszky 2009). Thus, there exists a gj response function for each oligopsonistic company:

$$x_j = g_j\left(\sum_{\substack{i=1 \\ i \neq j}}^{N} x_i^E\right) \qquad j=1..N \qquad (7)$$

where the x_j quantities of equation (7) fulfil the optimum criteria from equation (6). Let us now assume that the inverse supply function

of the investigated resource, described by equation (3), is linear, namely $p_i = A \cdot (x_1 + x_2 + \ldots + x_N) + B$. Then equation (5) can be reformulated as follows:

$$\frac{\partial \pi_j}{\partial x_j} = P \cdot MP_j - A \cdot x_j - A(x_1 + x_2 + \ldots + x_N) - B = 0 \qquad j = 1..N \qquad (8)$$

Expressing x_j from equation (7) leads to the following response function:

$$x_j = -\frac{1}{2} \cdot \sum_{\substack{i=1 \\ i \neq j}}^{N} x_i^E + \frac{P \cdot MP_j - B}{2A} \qquad j = 1..N \qquad (9)$$

Thus, companies are forced to form expectations of the quantities to be purchased by the competitor(s) present on the same resource market. These quantities are called anticipated volumes. Equation (9) shows that response functions have negative slope. This means that if the anticipated purchase volume(s) is(are) increasing (which also increases the market price of the resource in question, see equation (4)), the company responds by decreasing its own purchase volume, and vice versa.

We have modelled the oligopsonistic market with two and three players (duopsony and triopsony) by implementing equations (1)-(9) in *Maple*. In order to simplify graphical representations and their understanding, we assumed that production functions (see equation (2)) are constant yield functions, however implementing the more frequent decreasing yield functions would have lead to similar results. The parameters of the production functions and the numerical data connected to the figures can be found in the *Appendix*.

We have graphically illustrated both cases (two and three players) in a Cartesian coordinate system, where the axes represent the quantities of resource purchased by the oligopsonistic companies. In case of duopsony the response functions are represented by two curves with negative slope, while in case of triopsony the response functions are represented by response surfaces.

Figure 1 illustrates the case of duopsony (*N=2*). It contains the response function of the two duopsonistic companies, where the continuous

line denotes the *first* (x axis), while the dashed line denotes the *second* (z vertical axis) company's response function. Point *A* marks the intersection of the two response functions.

Figure 2 illustrates the case of triopsony ($N=3$). It shows the response surfaces of the three triopsonistic companies, where the gridded surface denotes the *first* (x axis), the dark gray coloured surface the *second* (z axis), the light gray coloured surface the *third* (t axis) company's response surface. Similarly to Figure 1, point *A* marks the intersection of the three response surfaces.

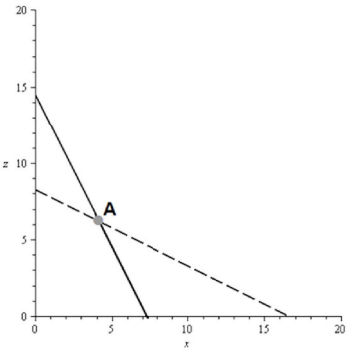
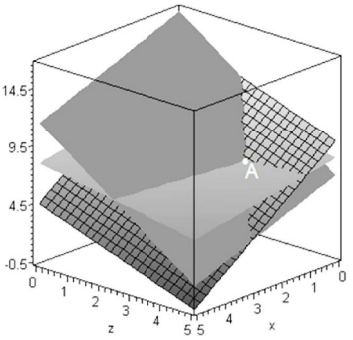


Figure 1. Response functions of duopsonistic companies and the Cournot-equilibrium



Source: own calculation, *Maple*

Figure 2. Response functions of triopsonistic companies and the Cournot-equilibrium

The equilibrium of the oligopsonistic market, also termed as the point of Cournot-equilibrium (marked with point A on the figures), is located at the intersection of the response functions. Early researches were primarily focusing on the existence and uniqueness of the equilibrium, based on the seminal work of Cournot (1838), and demonstrated it for several different market situations (e.g. Szidarovszky and Yakowitz 1977, Okuguchi 1998). Similarly, numerous articles examined the stability of this equilibrium point (e.g. Shone, 2002).

Response functions indicate how an oligopsonistic company deter-

mines the resource quantity to be purchased on the market, based on the anticipated purchase quantities of the other companies. Therefore, the point of intersection of the response functions, namely the point of Cournot-equilibrium, is a point where all expectations of the oligopsonistic companies are fulfilled, and ultimately they purchase exactly the equilibrium quantities (x_j^*) from the factor market (numerical values of purchased resource quantities corresponding to the point of equilibrium can be found in the *Appendix)*. Thus, purchased resource quantities are the following:

$$x_j = x_j^E = x_j^* \,, \quad j=1..N \tag{10}$$

and

$$x_j = g_j\left(\sum_{\substack{i=1\\ i\neq j}}^{N} x_i^E\right) = g_j\left(\sum_{\substack{i=1\\ i\neq j}}^{N} x_i^*\right) \quad , \quad j=1..N \tag{11}$$

However, several articles analyzing oligopolistic and oligopsonistic markets show that the point of Cournot-equilibrium is not necessarily Pareto-efficient, and that companies may shift away from this point (Okuguchi 1976, Dixit 1986). This means that in the point of equilibrium at least one of the companies is able to change its purchased quantity in a way that will increase its own profit, while in the same time the profit of the other companies will not drop. The Cournot-equilibrium assumes that oligopsonistic companies are not cooperating. Thus, their decisions are made at the same time, and are based exclusively on anticipated purchase quantities, namely decisions are made along the response functions. In this way, each and every company tries to maximize its profit separately. The oligopsonistic situation, however, often motivates companies to collude in order to further increase their total profit.

Based on equation (3), profits of individual companies are determined as a function of purchased resource quantities. Let now *isoprofit d*enote those resource-quantity combinations at which the profit of one given company is constant. This is actually a hyper-surface in the N dimensional space. The isoprofits of the individual companies can be written as follows:

$$\text{isoprofit}_j=\{(x_1,x_2,\ldots,x_n) : \pi_j(x_1,x_2,\ldots,x_N)=\text{const}\} \quad (12)$$

Implementing isoprofits in *Maple* we get concave isoprofit curves in case of duopsony, and isoprofit surfaces in case of triopsony.

Figure 3 illustrates the response functions of the two duopsonistic companies and a few of the isoprofit curves for the *first* company. The figure also contains the equilibrium isoprofit curve of the *first c*ompany, which has its most distant point from the horizontal axis exactly in the point of Cournot-equilibrium. In fact, in the coordinate system there exist an infinite number of isoprofit curves. The most distant points from the horizontal axis of these curves form the response function of the company. Besides this, the lower an isoprofit curve is positioned in the coordinate system, the higher the profit level represented by it. This is also shown by the fact that the *first* company would earn the highest possible profit if the s*econd* company purchased zero quantity of the i^{th} resource, namely at that point, where the response function of the *first* company intersects the horizontal axis. In fact, in this case the *second* company would not even be present on the resource market, making it possible for the *first* company to take advantage of its dominant market position as a monopsonistic player.

Similarly to the case of duopsony, Figure 4 illustrates the response surface of the triopsonistic *first* company, and a few of its isoprofit surfaces (in order to simplify the understanding of the illustration the figure now does not show the response surfaces of the other two companies). Similarly to the duopsonistic situation, the isoprofit surfaces situated lower represent higher profit levels, and the most distant points of the these surfaces relative to the horizontal axis form the response surface of the company.

A closer examination of algebraic relationships behind the graphical representation of isoprofits may contribute to a better understanding of the figures. First of all, let us simplify the general oligopsonistic situation to an equation with two variables, by summing up resource quantities purchased by all the other companies (except the j^{th} company) in a single variable (X_j), where:

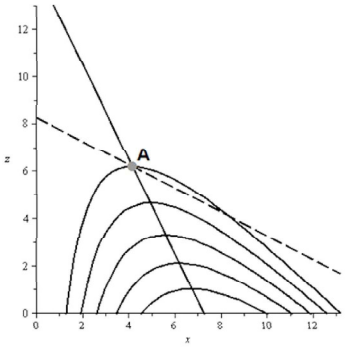
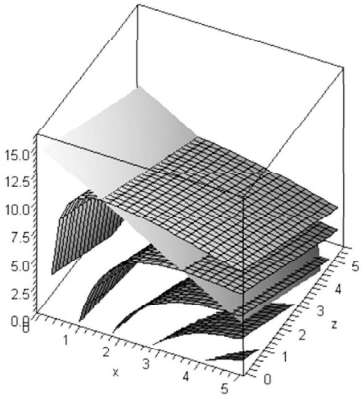


Figure 3. Response functions of the two duopsonistic companies and the isoprofit map of the *first* company



Source: own calculation, *Maple*

Figure 4. Triopsonistic response surface and corresponding isoprofit surfaces of the *first* company

$$X_j = \sum_{\substack{i=1 \\ i \neq j}}^{N} x_i \tag{13}$$

In this case, the slope of the isoprofit curves shows how the purchased resource quantity of the j^{th} company changes as other companies marginally change their purchased quantities, while the profit of the j^{th} company remains constant. In order to determine the slope of the isoprofit curves we are going to use the implicit function theorem. First of all we fix the profit of the j^{th} company at a given π_j level and formulate the following equation, equal to zero:

$$\pi_j^0 = \pi_j - P \cdot f(x_j) + p_i(x_j + X_j) \cdot x_j + FC = 0 \tag{14}$$

Based on equation (14), the implicit function theorem states that the slope of the tangent line to the isoprofit curve is:

$$\frac{\partial X_j}{\partial x_j} = -\frac{\dfrac{\partial \pi_j^0}{\partial x_j}}{\dfrac{\partial \pi_j^0}{\partial X_j}} \tag{15}$$

Calculating the differentials in equation (15), and using the variables introduced in equation (6):

$$\frac{\partial X_j}{\partial x_j} = -\frac{-P\cdot MP_j + \frac{\partial p_i}{\partial x_j}\cdot x_j + p_i}{\frac{\partial p_i}{\partial X_j}\cdot x_j + p_i} = -\frac{-VMP_j(x_j) + MFC_j(x_j, X_j)}{MFC_j(x_j, X_j)} = \\ = \frac{VMP_j - MFC_j}{MFC_j} \qquad (16)$$

Based on relationship (16), while $VMP_j > MFC_j$, the isoprofit curve has a positive slope, and after reaching its maximum point, it decreases (here $VMP_j < MFC_j$). Hence, the maximum point of the isoprofit curve (where $VMP_j = MFC_j$) satisfies the first order condition of profit maximization, presented in relationship (6). Consequently, the response function, which is deduced from the profit-maximizing condition, connects the maximum points of the isoprofit curves. This corresponds to the interpretation of response functions, since – given the quantities purchased by all the other companies – our company will strive to purchase exactly the quantity which will assure him maximum profit, placing the company on the lowest isoprofit curve possible. Another conclusion of relationship (16) is the concavity of isoprofit curves.

Let us now investigate profit conditions in the Cournot-equilibrium of the oligopsonistic market, using the isoprofit curves. On the figures below we first plotted the isoprofit curves, which correspond to the profits reached in case equilibrium quantities are purchased by each company.

Figure 5 contains not only the isoprofit curves of the *first* company, but also those of the *second* company, marked with dashed lines. These have a similar shape to the isoprofit curves of the *first* company. The figure illustrates those two isoprofit curves as well, that pass through the point of Cournot-equilibrium (point *A*).

For better perspicuity, in case of the three triopsonistic companies we plotted on Figure 6 only those isoprofit surfaces that correspond to the Cournot-equilibrium.

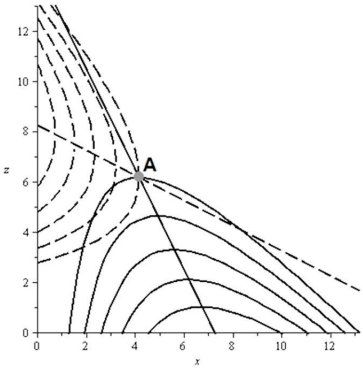
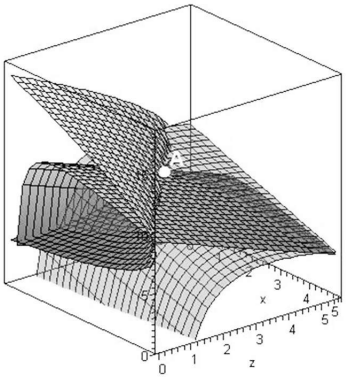


Figure 5. Response functions and isoprofit curves of duopsonistic firms



Source: own calculation, *Maple*

Figure 6. Isoprofit surfaces of triopsonistic firms in the Cournot-equilibrium

On the two-dimensional figure (in case of duopsony) we can identify an area, whose points exclusively assure a higher profit for both companies relative to the Cournot-equilibrium (point A*)*. Let us now concentrate on the two areas delimited by the two isoprofit curves passing through point A and the corresponding axes. Each point of the common segment of these two areas (a lens-shaped area) refers to such combinations of purchased resource quantities that assure higher profit for both companies, placing them on lower isoprofit curves.

Similarly, in case of three buyers we can identify a portion of space again whose points would exclusively assure a higher profit for all three companies compared to the Cournot-equilibrium (point *A*). On Figure 6 there is a common portion of the three spaces delimited by the three isoprofit surfaces passing through point *A* (the three spaces are delimited from "above" by the three isoprofit surfaces towards the direction of their corresponding axis). Each internal point of the common portion of space refers to such combinations of purchased resource quantities that assure a higher profit for all three players, placing them on lower isoprofit surfaces.

The set of points that assure higher profits for the oligopsonistic companies presumes, however, a shift away from the equilibrium (point *A*). The Cournot-equilibrium, marked with point A on the figures, is unstable, since it is not Pareto efficient. However, companies are able to shift away from this point only if they cooperate. One possible way of such cooperation is the cartel agreement which will be discussed in the next section.

The fact, that it is worth for companies to shift away from the Cournot-equilibrium, can be formulated as a conditional extremum problem, as presented below. Let us take a look on the j^{th} company which strives to earn a higher profit than in the Cournot-equilibrium, while the profit of the other players should not change. Let π_i^* denote the equilibrium profit of the i^{th} company. In this case the optimization problem of the company can be formulated as follows:

$$\begin{array}{l} \pi_i^* = P \cdot f_i(x_i) - p_i(x_1 + x_2 + \ldots + x_N) \cdot x_i - FC \qquad i = 1..N,\ i \neq j \\ \hline \pi_j = P \cdot f_j(x_j) - p_i(x_1 + x_2 + \ldots + x_N) \cdot x_j - FC \rightarrow \max \end{array} \tag{17}$$

It can be seen, that the point of equilibrium satisfies the constraints. Besides that, the j^{th} company is able to increase its own profit while not influencing the profit of other oligopsonistic players. A conditional extremum problem similar to problem (17) can be formulated for all oligopsonistic companies. Consequently, there exists a set of combinations of purchased resource quantities, for which the profit of each company is greater than or equal to the profit of the Cournot-equilibrium. This set corresponds to the common section of the areas/spaces delimited by the isoprofit curves/surfaces, as we have discussed it above.

2. Cartel agreement between oligopsonistic firms

The conditions of oligopsony encourage companies to collude, since by that they are able to obtain a Pareto-improvement in comparison with the Cournot-equilibrium. A cartel agreement does not concentrate on maximizing the profit of each oligopsonistic company, but it strives to maximize the sum of all company profits:

$$\pi = \sum_{j=1}^{N} \pi_j \rightarrow \max \tag{18}$$

In this case the sum of profits of the companies participating in the cartel is:

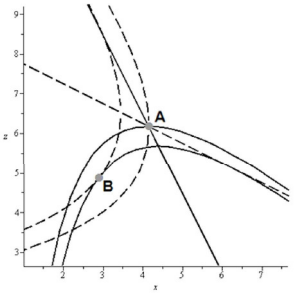
$$\pi(x_1,x_2,\ldots,x_N) = P\cdot\sum_{j=1}^{N} f_j(x_j) - p_i(x_1,x_2,\ldots,x_N)\cdot\sum_{j=1}^{N} x_j - \sum_{j=1}^{N} FC_j \tag{19}$$

Differentiating expression (19) with respect to each variable we get the profit-maximizing conditions of the cartel:

$$\frac{\partial \pi}{\partial x_j} = VMP_j(x_j) - MFC_j(x_1,x_2,\ldots,x_N) = 0, \quad j=1..N \tag{20}$$

Under the fulfilment of the conditions presented in point (20), the total profit of the cartel will be higher than the sum of equilibrium profits of each company (see also the conditional extremum problem (17) and the corresponding explanations). The figures below illustrate one such case each.

Figure 7 illustrates a cartel agreement for two companies. As a result of collusion the companies shift away from point *A* to point *B.* This shift means basically that – as a condition in the agreement – both companies will lower the resource quantity purchased from the market, both reaching thereby higher profit levels. On the figure it can be seen that isoprofit curves corresponding to point *B* are positioned lower than those corresponding to point *A*. The concrete numerical data is presented in the *Appendix*.



Source: own calculation, *Maple*

Figure 7. Duopsonistic cartel agreement

Figure 8 and 9 are similar to Figure 6 (for an easier understanding Figure 8 is shown from a different angle too, this is Figure 9). They illustrate – in a similar manner as on Figure 6 – isoprofit surfaces corresponding to the equilibrium and to the cartel agreement of triopsonistic companies. For a better overview, isoprofit surfaces corresponding to the cartel received a black color, while those passing through point A received a grey color and a gridded texture. It is easily observable that to each grey, grid-textured isoprofit surface a black surface can be associated, which lies closer ("lower") to the corresponding axis, therefore it represents a higher profit level compared to the values of the Cournot-equilibrium (point *A*). In case of three companies the intersection of the three black colored isoprofit surfaces corresponding to the cartel agreement, namely point *B,* is not visible, since it is positioned inside the common portion of space delimited by the three equilibrium isoprofit surfaces. Numerical data corresponding to this point is included in the *Appendix,* hence it can be compared to the situation in point *A*.

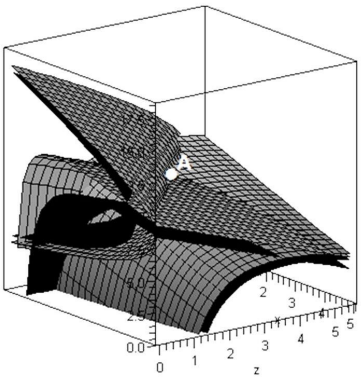
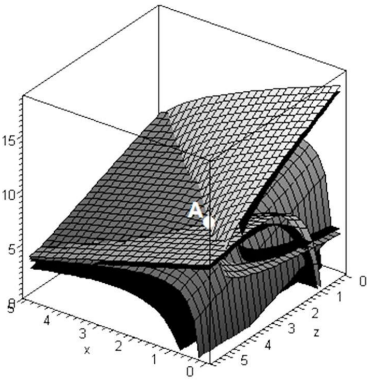


Figure 8. Cartel agreement in case of triopsony



Source: own calculation, *Maple*

Figure 9. Cartel agreement in case of triopsony (different angle)

The collusion in a cartel refers practically to the fixation of quotas (restrictions on resource quantities to be purchased), namely those re-

source quantities that assure a higher profit for each company participating in the cartel. Let x_j denote the restricted quota quantity for the j^{th} company, while x_j^* the quantity corresponding to the Cournot-equilibrium. In this case following relationships stand:

$$\pi(\overline{x_1},\overline{x_2},\ldots,\overline{x_N}) > \sum_{j=1}^{N} \pi_j(x_1^*,x_2^*,\ldots,x_N^*) \tag{21}$$

$$\overline{x_j} < x_j^* \ , \ j=1..N \tag{22}$$

$$p_i(\overline{x_1},\overline{x_2},\ldots,\overline{x_N}) < p_i(x_1^*,x_2^*,\ldots,x_N^*) \tag{23}$$

namely oligopsonistic companies collude in a cartel for higher total profit (21) by setting restrictions on purchased quantities on the resource market (22), which drives resource prices down (23).

3. Cheating in a cartel agreement

Inside a cartel two different interests are constantly in conflict with each other. The collective interest refers to the maximization of the cartel's total profit, when the companies try to push purchase prices down. The individual interest strives to only maximize the company's own profit, even at the expense of pushing down the profit of the other players. Based on Stigler's (1964) seminal work many researchers argued that the individual interest inside a cartel will inevitably lead to cartel breakup. In a more recent study Levenstein and Suslow (2006), after investigating twenty different industries, concluded that the average survival period of a cartel is only five years. One of the most fundamental reasons behind this is that one member company of the cartel may significantly increase its profit by breaking the cartel agreement, while others keep to it. In case the other players stick to the quotas set by the cartel agreement, the company in question may obtain higher profits by purchasing larger quantities than the quota on a lower price level. Cheating in a cartel can, thus, be formulated as a conditional extremum problem, where the constraints represent the fact that all other players besides the j^{th} company stick to the quota limitations set by the cartel agreement, namely:

$$x_i = \overline{x_i}\,,\ i=1..N,\ i\neq j \tag{24}$$

Let $\overline{X_j}$ denote all the resource quantities purchased by companies other than the j^{th} company, quantities that correspond to the quota restrictions ($\overline{X_j} = \sum_{\substack{j=1 \\ i \neq j}}^{N} \overline{x_i}$). Besides the constraints formulated in point (24), the objective function is the profit maximization of the j^{th} company that cheats in the cartel:

$$\pi_j = P \cdot f(x_j) - p_i(x_j + \overline{X_j}) \cdot x_j - FC \rightarrow \max \tag{25}$$

Differentiating the profit function of the j^{th} company we can get the x_j resource quantity that needs to be purchased from the market in order to cheat in the cartel, and, hence, to maximize its own profit on the expense of the other players that stick to the quotas set by the cartel agreement. Thus, differentiating the profit function described by expression (25):

$$\begin{gathered} \frac{\partial \pi_j}{\partial x_j} = P \cdot MP_j - \frac{\partial p_i}{\partial x_j} \cdot x_j - p_i(x_j + \overline{X_j}) = 0 \\ VMP_j(x_j) = MFC_j(x_j, \overline{X_j}) \end{gathered} \tag{26}$$

As a result, we get a similar profit-maximizing condition, than in the base case scenario where oligopsonistic firms do not collude (see condition (6)). Hence, cheating in a cartel is somewhat similar to the procedure described in the base case scenario. However, in this case the j^{th} company is not obliged to anticipate resource quantities to be purchased by other players, since quota restrictions are known. Thus, the company follows its own reaction function, and maximizes its profit.

Figure 10 illustrates the duopsonistic situation, where the *first* company cheats in the cartel on the expense of the *second* company. The *second c*ompany holds on to the quota set by the cartel agreement (point B*)* – this is represented by the horizontal dotted line. Knowing this, the *first* company decides to increase its purchased resource quantity, thereby maximizing its own profit. The situation after the cheating is represented by point *C*, which lies at the intersection of the horizontal dotted line, corresponding to the quota limitation of the *second* com-

pany, and the reaction function of the *first* company. Point *C* represents the profit-maximizing situation of the *first* company, given the quota of the *second* company. The consequences of cheating are illustrated by the isoprofit curves passing through point *C*. It is observable that the *second* company moved to an isoprofit curve placed even higher than that corresponding to the Cournot-equilibrium (point *A*), thereby earning a lower profit compared to both the base-case and the cartel situation. On the other hand, the *first* company relocated itself to an isoprofit curve placed even lower than that corresponding to the Cournot-equilibrium, which resulted naturally in a higher profit level.

Figure 11 deals with the triopsonistic situation where the *first* company cheats in the cartel on the expense of the other two players. For a better overview, in this case we only illustrate the shift between points *B* and *C* (as defined in the duopsonistic situation) by plotting isoprofit surfaces corresponding to the cartel, and to the cheating in the cartel, respectively. Due to the position of the isoprofit surfaces the two points are not observable. Isoprofit surfaces corresponding to the cartel agreement got a dark grey colour, while those corresponding to the cheating in the cartel got a light grey colour. For a better understanding the ar-

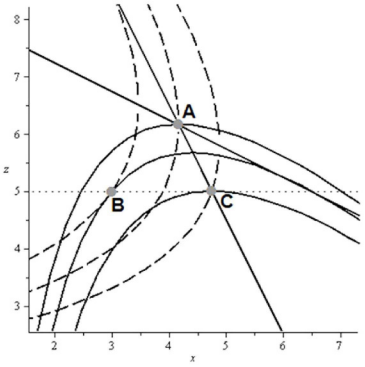
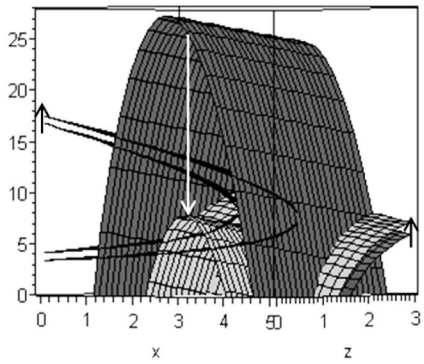


Figure 10. Cheating in a duopsonistic cartel



Source: own calculation, *Maple*

Figure 11. Cheating in a triopsonistic cartel

rows on the figure show the direction of the shift of each company from the isoprofit surface of the cartel towards the isoprofit surface corresponding to the cheating in the cartel. It is obvious that the *first* company repositioned itself on a much lower isoprofit surface (shift marked by the white arrow on the figure), thereby increasing significantly its profit on the expense of the other two players, who thereby got on higher isoprofit surfaces (shift marked by the black arrows on the figure).

Numerical values corresponding to points *A, B,* and *C,* both in the duopsonistic and in the triopsonistic situation are indicated in the *Appendix* of this paper.

Hence, in both situations the company that cheats the cartel agreement gets into a more favourable situation (and, accordingly, on lower positioned isoprofit curves/surfaces), while the companies who stick to the cartel agreement have their profits decreased (and, accordingly, relocate themselves on higher positioned isoprofit curves/surfaces). The players that stick to the cartel agreement may only sense cheating by observing that the price of the resource in question has increased on the market, and, thus, they are able to earn only a lower profit. Naturally they can suspect that cheating could be the reason of decreased profits, however, based on market information they can not unequivocally prove it.

Conclusion

Our paper discussed the behaviour of oligopsonistic firms on resource markets. Algebraic relationships behind oligopsonistic decisions were implemented using the *Maple* software, thereby aiming to illustrate the case of oligopsonistic markets with two and three players, respectively (duopsonistic and triopsonistic markets). The first part of our article concentrated on the situation of market equilibrium, by determining and plotting response functions and isoprofit curves/surfaces. Since the Cournot-equilibrium is not Pareto efficient, the second part of the article dealt with the case when oligopsonistic companies are able to collude, thereby aiming at a Pareto-improvement on market level. Consequently, in the second part we modelled the situation of cartel ag-

reements, while the last section illustrated the unilateral cheating in the cartel in both duopsonistic and triopsonistic situations.

Appendix

The appendix contains the initial parameters of the production technologies assumed, and it also indicates the corresponding purchased resource quantity, output, and profit values, both for the duopsonistic and the triopsonistic situations. For a simpler graphical representation, initial technological parameters refer to a constant yield production functions. Purchased and produced quantities are expressed in natural units, while company profits are measured in monetary terms. In the tables below it is easy to compare how these quantities change as oligopsonistic companies move away from the Cournot-equilibrium (point *A* on the figures of this paper) and collude by creating a cartel agreement (point *B* in the article), and also when one company (in both cases the *first* company) cheats in the cartel (point *C* in the article). Quantitative changes are also marked by the arrows in the table.

Table 1. Values of purchased resource quantity, production output, and profit in duopsonistic scenarios

		First company ($y_1=5\cdot x_1$)		*Second* company ($y_2=3\cdot x_2$)	
	i=1..2	Value	Change	Value	Change
Cournot-equilibrium (point *A*)	Purchased qty (x_i)	4,167		6,167	
	Output (y_i)	20,833		18,500	
	Profit (π_i)	34,722		76,056	
Possible cartel agreement (point *B*)	Purchased qty (x_i)	3	↓	5	↓
	Output (y_i)	15	↓	15	↓
	Profit (π_i)	39	↑	85	↑
Cheating in the cartel (point *C*)	Purchased qty (x_i)	4,75	↑	5	-
	Output (y_i)	23,75	↑	15	-
	Profit (π_i)	45,125	↑	67,5	↓

Source: own calculations, *Maple*

Table 2. Values of purchased resource quantity, production output, and profit in triopsonistic scenarios

		First company ($y_1=5\cdot x_1$)		*Second* company ($y_2=3\cdot x_2$)		*Third* company ($y_3=6\cdot x_3$)	
	i=1..3	Value	Change	Value	Change	Value	Change
Cournot-equilibrium (point *A*)	Purchased qty (x_i)	1,5		3,5		8	
	Output (y_i)	7,5		10,5		48	
	Profit (π_i)	4,5		24,5		128	
Possible cartel agreement (point *B*)	Purchased qty (x_i)	1,3	↓	2	↓	6	↓
	Output (y_i)	6,5	↓	6	↓	36	↓
	Profit (π_i)	13,52	↑	28,8	↑	140,4	↑
Cheating in the cartel (point *C*)	Purchased qty (x_i)	3,25	↑	2	-	6	-
	Output (y_i)	16,25	↑	6	-	36	-
	Profit (π_i)	21,25	↑	21	↓	117	↓

Source: own calculations, *Maple*

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The Future of the Academic Journal[1]

ARTUR LAKATOS [1]

This present volume contains 19 studies centered around an issue of great actuality in current Academic Life, the issue of Academic Journal and the future of publishing in this field, through studies grouped around certain major issues, like publishing management, the future of electronic journals, possibilities of Statistical measurements of scientific writings through indicators, etc. Especially interesting is the last study of the volume, which is dealing with the future of scientific writing in relation with less scientific surfaces, like blogs, wikipaedias and bookmarking sites.

Keywords: Academic Journal, Scientific Writing, Publishing, Publication Management.

Nowadays, in the age of information-boom, when for scholars to become and remain competitive is more important than ever to publish their works, for sharing values with the larger interested Audience, and also to gain reputation and respect by that, the role of Academic Journals experienced an unprecedented growth in importance. The phenomenon brought with itself many questions too, and Management of Academic Journals almost became already a science in itself. In these conditions such a collection of studies as this present volume is more than welcome.

This present volume contains 19 studies, grouped in six part, each part referring on a special Problematic. The two editors are well established scholar of Anglo-Saxon and International World of Science, Bill Cope being a Research professor in the Department of Educational Policy Studies at the University of Illinois, and Angus Phillips is the Director of the Oxford International Centre for Publishing studies and Head

[1] Bill Cope and Angus Phillips (eds), *The Future of the Academic Journal*, Oxford-Cambridge-New Delhi, Chandos Series on Publishing, 2009.

[2] PhD, Researcher, Research Grant TE 206 of the Romanian National Academy of Sciences

of Publishing Department at oxford Brookes University. The list of contributors is also very impressive, with specialists from all over the world, mostly American specialists, but the Far East, Africa and East-Central Europe are also present on this books paged, by their own specialists. Regarding the quality we have to state from the very beginning, that there is no "weak" study in this collection, probably due to the very high standards of the present publication. Every single of them is original, easy to be read and has consistent system of endnotes and bibliography too.

Following to the *Introduction* signed by Bill Cope and Angus Phillips, which practically introduces us in the wide and various Thematic of this present volume, are placed the concrete studies, consisted in collection called Parts. The first thematic group or Part I, *Knowledge systems,* contains two studies related to the functioning of contemporary systems of knowledge, and their major issues. The study of Bill Cope and Mary Kalantzis, *Signs of epistemic disruption: transformations in the knowledge system of the academic journal* , has 40 pages, and is practically an interdisciplinary overview of current state of scholarly journals, and several technological, ethical, sciento-metrical and economical issues. For sure, this study is extremely comprehensive, and even if it does not offer too many solutions – it can't do that, because of extremely high diversification of the problems encountered worldwide – it is a great Synthesis, probably one of the best which can be done without the Authors to be lost in too many details. On the other hand the study of Jose Luis Gonzales Quiros and Kharim Gherab – two scholars from Madrid – is a set of Arguments for digitalization of scientific life (e-science). In their vision, this process actually can bring the replacement of linguistic and disciplinary monopoly to the pluralism of languages and culture, the growth of innovating role of Academic journals and the dissemination of results of actually "working" experts can disseminate easier their results. The Authors are quite realistic: they consider that primal role in this" particular "global village" of science will be of great journals already dominating the market, which are going to keep their prestige since they are still manage the information to attract the attenti-

on of large sectors of public opinion, and as a consequence, of businessmen and politicians. But the authors also consider that literally everyone who wants can get in the secondary market, also very important for other specialists, and this is what brings to the rise of democratization, Internationalization and growing Competitiveness of Scientific World.

Part two, *The journals business,* contains six studies which are centered mostly around economic issues related to publishing. Angus Philipps is presenting several models in journal publishing, the approach being made from a managerial point of view, and on key elements like lifecycle of a journal, issues related to pricing, costs, etc. The following study is also focused on journal-publishing issues, the authors making some predictions too, from which the most important is the growth in importance of electronically-published journals. Stevan Harnad, the *man* of science with Hungarian origins, specialist both in Electronics and Computer Science and Psychology too, has on his turn a very interesting work, which bears the title *The post-Gutenberg open access journal* which makes a comparison between the classical learned journal and post-Gutenberg one, naturally, in the favor of the second one. Claire Bird's and Martin Richardson's study tackles the issue of journal publishing under a hybrid system, using both subscription and open access model. The last two studies of this thematic part are dealing with to very concrete issues, which have great actuality in management of Academic Life: the issues of Copyright, respective Journal Rankings and Impact factors, which determines journal measurements.

The following thematic Part, *Academic Practices,* contains four studies, having as subjects general and more concrete case-studies. Sarah L. Shreeves is writing about role of repositories in the future of journal publishing; J. Eric Davies is analyzing the relations of Libraries with Academic journals of the future, especially in the case of journals published on the Internet; Michael E. Peters's work is an outstanding approach from managerial point of view related to political economy of education journals, the study being illustrated by Tables, Statistics and Diagrams, using relatively recent Statistical data. The last study of this Part consists in the work of four authors, and is dealing with the issue of

a concrete journal in the field of Medical Sciences, the *Open medicine*.

The *Journal internationally* consists three studies, and is introducing the reader in issues of academic journal management in three more exotic" regions of the world, like the African continent, China, and Asia, understood in a wider sense , having case-studies from Japan, Korea and Malaysia. Part five is dedicated to issues of *Digital transformations*, and consists of two studies. And part six, *Coda*, is formed by one single study, whose author is Sally Morris, and its title is *The tiger in the corner: will journals matter to tomorrow scholars?* which also brings in discussion some very serious ideas, worthy to think on them. The main idea is that since Academic world is focusing on business models, issues related to dissemination and certification, etc. the IT world also transformed researcher's attitude, oriented much more on fast dissemination of their results, even by less academic surfaces, like blogs, wikis and bookmarking sites, practices adopted and adapted by more and more researchers. What can be the result of such a challenge, only the future can tell.

Urban Economics[1]

ARTUR LAKATOS [1]

This book is dealing with the issue of Urbanization process and its economic aspects. Divided into several big thematic chapters, it is dealing with general issues of Urban Economic Life like characteristics of Urban Transportation, Urban (Neighborhood) Crime, growth control, involvement of Public Administration in Urban Planning, etc. The case-studies are various, from Ancient Phoenician and Greek city-states till the contemporary metropolises of the USA.

Keywords: Urbanization, Economics, Urban History, Urban Transportation, Economic Growth.

This present book of the professor of Economics at Lewis and Clark College in Portland, Oregon can be considered to be a real scientific bestseller, experiencing, since 1990, seven editions, each one of them being constantly improved to the previous one. Its subject is on Urban Economics, a discipline that lies at the intersection of urban geography and economics. Based on an exhaustive research, in which personal practical experience of the Author in the USA, but also in Asia (in the Far East) it represents the synthesis of a life-long work, with the ambition of covering as much aspects as possible, using a comprehensive methodology from different fields of Natural and Social Sciences, related to its various thematic. The book is a kind of Encyclopedic work, with the intention to present an abstract, but still practical Synthesis of contemporary Urban Economic realities, it is designed to be an Academic reading and some kind of working Manual in the same time, at the end of each chapter being, beside of Summary and Bibliographic Reference, a collection of logical and mathematical problems, whose solutions are in the methods described in the chapter in cause.

[1] Arthur O'Sullivan, *Urban Economics,* Seventh Edition. McGrawHill Publishers, 2009. p 446

[2] PhD, Researcher, Research Grant TE 206 of the Romanian National Academy of Sciences

The book is structured into six great parts, which, on their turn, re composed by several chapters and subchapters. Chapter one, designed to be an introduction for the more specific issues treated later in the pages of this book, bears the title *Introduction and Axioms of Urban Economics,* contains practically the definitions of key concepts like Urban Economics, City, etc. , but also the five Axioms of the Author, each one of them being shortly commented by the Author, and which are interested enough to be reproduced word by word in this review too. These five Axioms of Arthur O'Sullivan's are the following statements:

1. Prices Adjust to Achieve Local Equilibrium
2. Self-Reinforcing Effects Generate Extreme Outcomes
3. Externalities Cause Inefficiency
4. Production is Subject to Economies of Scale
5. Competition Generates Zero Economic Profit

Only after this chapter can we meet the first great thematic Part, entitled *Market Forces in the Development of Cities,* which consists of chapters which are approaching to Economic Production of Cities first of all from an Economic-Managerial point of view, not lacking the methodology of other Social Sciences neither. For example, the subchapter *Trading Cities in Urban History* is offering a Historical look-over on role of trade in emerging of several cities, from ancient Phoenicia and Greece till contemporary metropolises of the USA. A comprehensive Economic Analysis is made to role of Firms of different types and sizes in a City economy ; another good analysis is that made to characteristics of Urbanization Economics through Urban growth in its classical, quantitative sense. Part II, *Land Rent and Land-Use Patterns,* is dealing with urban land-management, from the issue of Great Buildings, till the more Sociologic issue of Neighborhood Choice. Part III is centered around the issue of *Urban Transportation:* in a very curious manner, it dedicates more than half of its quantitative size to the issue of the Congestion Tax, Air Pollution and Vehicle Accidents receiving visibly less space. Part IV is dealing with *Urban Crime,* in a hybrid approach of Legal and Sociologic methodological approach, giving priority to the second one, illustrated also by lots of Statistics and their visual represen-

tation. Part V is probably the most interesting one if we consider to be more important to be made an Analysis on Micro-level, since it is about the issue of *Housing* and consists of chapters having as subject issues like Low-Income Housing Tax Credits, Effects of Growth Controls, the Development/Urban Renewal equation, the problem of Homelessness, Subsidies for Mortgage Interests, etc. The last part , *Local Government,* is dealing with the issue of implications and interferences of Politics and Public Administration with urban development, especially through two very specific revenues, the property tax and intergovernmental grants. The book is completed with Appendix, in which can be found the description of several methodological approaches used in this monumental work, under the collective title of *Tools of Microeconomics,* and Index of names, concepts and locations present through the work.

Guide for Authors

The Economists' Forum invites papers presenting the conclusions of theoretical or applied economic studies, scientific debates, or book reviews.The articles can be written in Hungarian or English (for the special issue). The articles should be submitted to one of the following e-mail addresses:

balint.nagy@econ.ubbcluj.ro,

office@rmkt.ro.

The text should be between 15 and 20 printed pages, numbered, A4 format, characters Times New Roman 12, single spacing.

The first must contain the title of the article, the author's name, their complete scientific title and affiliation (professional address, phone, e-mail), followed an abstract of 5-10 lines, that should present the main results of the article. The abstract will be followed by 5-7 keywords.

The authors are also required to submit an English and Romanian abstract with keywords in a separate document.

The presentation of bibliographical references:

In the text the references quotes will appear between brackets, with the name and the publication date, e.g.: (Gyeroffy 1997). For two coauthors they will use for example (Black and Scholes, 1973). In the case of three or more than three authors, only the first will be mentionod, under the form (Barberis et al., 1998).

If two references have the same author and the same publication year, they will be differentiated through letters (Fanra, 1965a). These letters will also appear in the bibliography.

At the end of the article the references will be presented as follows:

Periodicals: The list of the authors including the first name initial, the year of publication, the title of the article, the name of the periodical in italics without abbreviations, the number of the volume and the number of pages.

Books: The list of authors including the first name initial and the year of publication, the title of the book in italics without abbreviations, the publishing house, the place of publication.