EXTERNAL ECONOMIES OF SCALE OF COMPANIES DOING BUSINESS IN CONGRESS AND BUSINESS TOURISM IN THE CZECH REPUBLIC

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Abstract

The paper deals with firm´s behavior in international markets and analyses of monopolistic firm´s behavior in long run equilibrium using of microeconomic model. The aim of the paper is to describe the behavior of international firms in congress and business tourism using the model of monopolistic competition. The assumption for application of the monopolistic competition model in the international trade area is the idea that trade increases the market size. In the sectors where external economies of scale apply it is valid that both heterogeneity of the goods the country produces and the extent of their production are influenced by the market size. The above mentioned economic results of the congress and business tourism demonstrate validity of the given model regarding behavior of monopolistic firms on international markets with hotel services. While number of guests is stagnant, we see a decrease in implemented prices during growth of average costs per one day of accommodation, all that with extending offer of services (growing number of hotels, respectively increase of bed capacity). On the other hand, however, with higher number of hotel guests, a growth in prices of accommodation was detected in the last period as a result of lower number of hotels, because some of them ceased to exist. Therefore, stays are currently being sold for higher prices (per one night).

Keywords: External economies of scale, congress tourism, company, monopolistic competition, hotels

Introduction

Two basic assumptions are valid for the behavior of companies in the environment of imperfect competition. The first one is that a producer is able to influence the price of a product on goods and services market, or the price of a factor on factor market. The second assumption is that a product is identifiable (differentiated). The impact of multinational firms may be characterized within the imperfect competition theory as oligopoly or as monopolistic competition. A frequent form of structure of the sector is an oligopoly, i.e. several competing firms, each of which is big enough to be able to differentiate the prices of its production, but at the same time too small to fix the prices in the sector. The price policy within the oligopoly can be characterized by mutual dependence. The firms fix the prices of their production both with regard to the assumed consumers' behavior and with regard to the assumed competitors' behavior. Analysis of such behavior is complicated. Analysis of the firms' behavior in another imperfectly competitive structure, which is also often common, namely in the monopolistic competition is much easier.

Material and methods:

A lot of various models are used for monopolistic competition analysis. Bogliacino and Rampa summarize the basic approaches of the economic theory to this issue in their article (2010): "A satisfactory picture should be grounded on some essential building blocks. The first one is uncertainty: the very novelty of goods (ideas, technologies, behaviors, etc.) implies that agents must act using conjectures over some unknown feature, as in standard Bayesian approaches (Young 2005). The second block is heterogeneity: individual models are necessarily different at the outset, since they summarize personal conjectures, previous learning and priori ideas (Cowan and Jonard 2003, 2004; Lopez Pintado and Watts 2006). The third block is interaction: the learning activity on the part of agents exploits past observations, stemming mainly from other agents' choices. Interaction thus shapes the overall process, making it path dependent. Coupling all this with some degree of non-linearity might finally allow for multiple equilibriums, and hence non-uniqueness of outcomes (lock-in: see Aoki and Yoshikawa 2002; Young 2007)."

We have used in this paper the model making use of optimization of the number of firms in the sector, the characteristics of which correspond best to the international trade needs. There are two key assumptions for monopolistic competition in the sector. It is differentiation of the product and the assumption that each firm considers the competitors' price as given. The firm manufactures and sells the more the higher the demand in the sector is and the higher the competitors' prices are. It manufactures and sells the less the higher the number of firms in the sector is and the higher its price is.

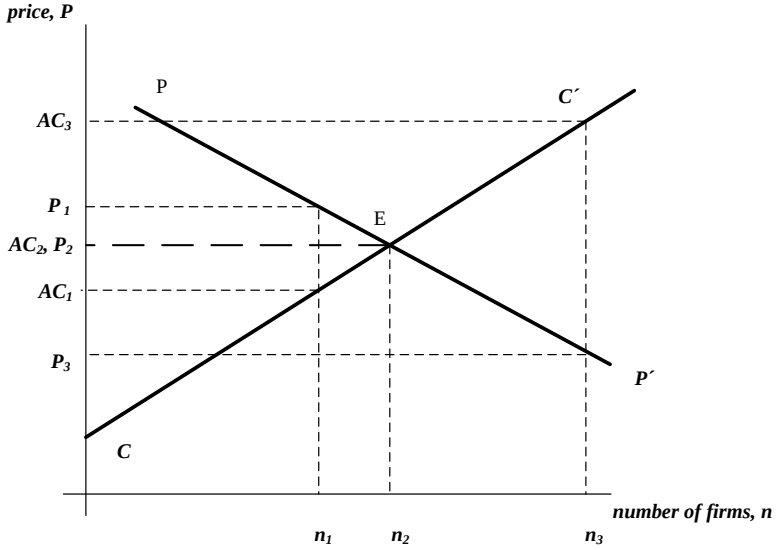
The model of monopolistic competition in sector:

This paper analyses the situation when a company doing business in congress and business tourism enters international trade. The impacts of this entry on creation of optimal number of firms in the sector, of equilibrium quantity and equilibrium price in the given sector are discussed as well.

Average costs (*AC*) depend on the number of firms in the sector (*n*). We assume according to Krugman (2006) that all firms in the sector are symmetric; it means that the demand and cost curves are the same for all firms in spite of the fact that they produce and sell differentiated products. If the individual firms are symmetric, it is easy to find out the sector's status. If we assume symmetricity of the firm models, under equilibrium they shall sell for the same price, which means that each firm's share in the production and sale of goods is 1/n of the total sale volume in the sector. At the same time we know that the average costs are inversely proportional to the number of products manufactured by the firm. The more firms there are in the sector, the higher the average costs are since each firm produces less.

The situation in the sector may be expressed graphically with two curves: growing *CC´* and falling *PP´*. *CC´* curve expresses the relation among the number of the firms in the sector, the sale volumes and the average costs. *PP´* curve expresses the relation among the number of the firms in the sector and the price. The equilibrium state is thus situated in their intersection point, in point *E*, which corresponds to the number of firms in the sector n_2. In case of this number of firms, the profit in the sector is zero (we have in mind the economic profit). If there are n_2 firms in the sector, then the price maximizing the profit is P_2.

Figure 1: Equilibrium of the sector under monopolistic competition



The total firm's costs may be expressed by the relation

$$TC = \beta q + \alpha . \quad (1)$$

For the average costs, it results thereof

$$AC = \beta + \frac{\alpha}{q}, \quad (2)$$

where α,β are coefficients of the cost function.

It is valid

$$q = \frac{\overline{q}}{n}, \quad (3)$$

where $\overline{q}$ is the number of products in the sector, n is the number of firms, q is the number of one firm's products. By means of connecting these two relations we shall receive:

$$AC = \beta + \frac{\alpha}{\overline{q}} \cdot n \quad (4)$$

The price, for which a typical firm sells its goods, depends also on the number of firms in the sector. The more firms there are, the stronger the competition shall be among them and the lower the price shall be. In Fig. 2 this is shown by the relation

$$P = \beta + \frac{f}{n}, \quad (5)$$

where f expresses intensity of this competition.

In the intersection point of both curves, this corresponds to the average costs AC_2. It means that in the long period of time the number of the firms in the sector shall approach n_2, E thus represents the long-term equilibrium point. If the number of firms n_1 was smaller than n_2, then the price of a piece of goods the firm offers would be P_1 while the average costs would be only AC_1 and the firms would thus achieve monopoly profit, which would attract other firms to enter into this sector, and their number, i.e. n_1 would start increasing. In the same way - to the contrary - if the number of firms n_3 was higher than n_2, the price P_3 would be lower than the average costs AC_3, the firms would thus lose interest and leave this sector, and the number of firms in this sector would thus decrease. The economic profit is

$$\pi = \frac{\sqrt{\alpha \cdot f \cdot \overline{q}}}{n} - \alpha , \quad (6)$$

$$\pi_1 > 0,\ \pi_2 = 0,\ \pi_3 < 0. \quad (7)$$

If $AC = P_2$, it must be valid in point E:

$$\beta + \frac{\alpha}{\overline{q}} \cdot n = \beta + \frac{f}{n_2} \quad (8)$$

$$\frac{\alpha}{\overline{q}} \cdot n_2 = \frac{f}{n_2} \quad (9)$$

$$\alpha \cdot n_2^2 = f \cdot \overline{q} \quad (10)$$

$$n_2 = \sqrt{\frac{f \cdot \overline{q}}{\alpha}} \quad (11)$$

It is possible to deduce from it:

$$q_2 = \sqrt{\frac{\alpha \cdot \overline{q}}{f}} \quad (12)$$

$$P_2 = \beta + \sqrt{\frac{\alpha \cdot f}{\overline{q}}} \quad (13)$$

Herewith also the quantity of the products of one firm and the equilibrium price of the final goods are determined.

Firm's involvement in international trade

Let's assume now that a firm under monopolistic competition enters international trade. Increased market size allows each of the firms to produce more and to have lower average costs. Therefore curve AC_1 shall shift to AC_2 in Fig. 2. At the same time, growth in the number of firms and product differentiation occur under the fall of the price of each of the products from P_1 to P_2.

Growth of the total sale volumes shall decrease the average costs under any given quantity of firms n. The reason lies in the fact that if the market grows under the same number of firms, the extent of sale per one firm shall grow and the average costs of one company shall fall.

If we thus compare two markets, where one has higher extent of sale than the other one, AC_2 curve of the bigger market shall lie below AC_1 curve of the smaller market. Meanwhile the other curve P expressing the relation between the price for one product and the number of firms shall not change.

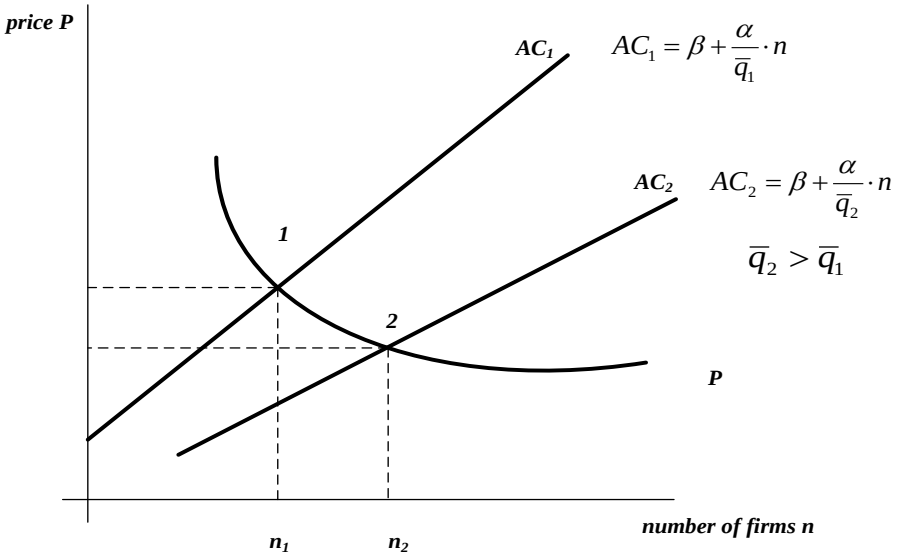
In our model, the international trade influence is expressed by an increase in the magnitude $\overline{q}$ and a decrease in the inclination of AC.

$$n_2 = \sqrt{\frac{f \cdot \overline{q}_2}{\alpha}} > n_1 = \sqrt{\frac{f \cdot \overline{q}_1}{\alpha}} \quad (14)$$

$$q_2 = \sqrt{\frac{\alpha \cdot \overline{q}_2}{f}} > q_1 = \sqrt{\frac{\alpha \cdot \overline{q}_1}{f}} \quad (15)$$

$$P_2 = \beta + \sqrt{\frac{\alpha \cdot f}{\overline{q}_2}} < P_1 = \beta + \sqrt{\frac{\alpha \cdot f}{\overline{q}_1}} \quad (16)$$

Figure 2: Extension of the market size (shifting of AC curve)



The average cost function shows us the long-term consequences of increased market extent. Originally, the equilibrium was achieved in point 1 under price P_1 and the quantity of firms was n_1. Increased market extent shifts *AC* curve more to the right bottom and the new equilibrium is achieved in point 2. The number of firms increased from n_1 to n_2 and the price fell from P_1 to P_2.

Our model assumes that production costs are the same in both countries that trade with each other and that the trade does not require any costs. These assumptions express the fact that even if we know that the integrated market shall support higher number of firms, we cannot say where these will be located. These are the sectors with monopolistic competition where a great number of firms produce differentiated goods.

Similar conclusions have been achieved also by Feenstra and Kee (2010): "We conclude that export variety in the monopolistic competition model with heterogeneous firms is quite effective at accounting for the time-series variation in productivity, but not the large absolute differences in productivity between countries."

Congress and company tourism in the Czech Republic

Congress and company tourism can be an example of monopolistic competition among companies on international tourism market. Congress tourism is - due to the attractiveness and history of the region - quite successful in the Czech Republic, the city of Prague however attracts mostly one-day congresses. The number of events with international participation last year increased by 61 % year-on-year. By that, the year 2012 in large extent confirmed the opinion of those, who are convinced that video- or teleconferences will never replace personal communication in business. Companies threw themselves again on a large scale into organizing events for clients, partners, employees or members of expert institutions. According to current data from the Czech Statistical Office, over 11 000 conferences and congresses took place last year in domestic hotels, with more than 1.5 million participants. Both of these numbers are record-breaking and constitute an increase by 8 and 12 %, respectively.

Company events are getting bigger and bigger in scale and are growing the fastest in three-star hotels. It can be – among other things – noted from published numbers that the events have more and more participants. An average of 132 people was calculated for one conference. Reasons for such behavior of the market can be seen especially in more stable financial situation of companies and in increase of orders by organizing associations. Hotels

are so far counting with further growth for this year as well. They also expect greater volume of middle and bigger events and more international multiple-day events with accommodation (Šindelář, 2013).

This is good news for businessmen in tourism. Congress participants and entrepreneurs on business trips are in fact usually the best clients. According to the state agency CzechTourism, such people spend over 10 000 CZK per day, that is three times as much as a common foreign guest. However, companies have been advised even in this respect by a series of different crises. Hotel managers at the same time add that outside-employment activities during company events have been reduced, which has also decreased overall consumption. Therefore, the biggest dynamics is currently seen in cheaper three-star hotels (growth by 9 %), whereas five-star facilities are growing the slowest (growth by 4 %).

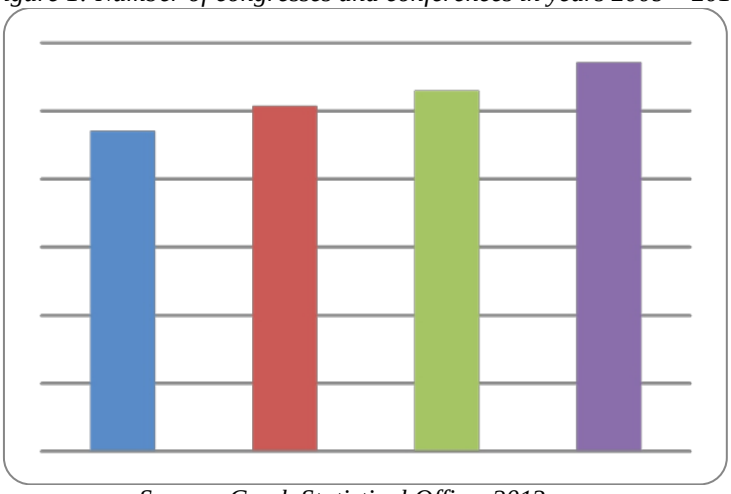
The most conferences are traditionally held in Prague, the city attracts more than half of all participants. South and North Moravia follow, the Moravian-Silesian region improved its position the most of all the regions in the last couple of years (Šindelář, 2013).

Table 1: Congresses and conferences in Czech hotels

Year	Number of events	Number of participants (in thousands)
2009	9411	1193
2010	10146	1295
2011	10601	1350
2012	11430	1516

Source: Czech Statistical Office, 2013

Figure 1: Number of congresses and conferences in years 2009 – 2012



Source: Czech Statistical Office, 2013

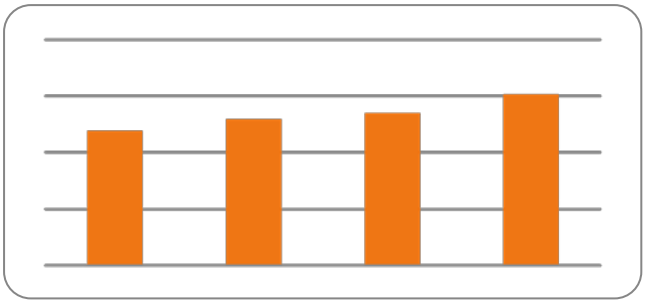


Figure 2:
Number of participants on congresses and conferences in years 2009 – 2012

Source: Czech Statistical Office, 2013

People, however, seem to be the problem; service in Czech hotels still has a lot to improve. This fact arises from the ranking of Hotel.info portal, which is put together based on quality of hotel staff, and where the Czech Republic ranks 15th among European countries. Prague is ranked 16th in the evaluation of staff helpfulness and competency. The number one in the evaluation of quality of hotel staff in Europe is Finland.

Table 2: European countries by the quality of hotel staff

1.	Finland	8,36
2.	Germany	8,36
3.	Austria	8,35
4.	Hungary	8,31
5.	Poland	8 27
...	...	...
15.	**Czech Republic**	8,08

Source: Hotel.info

The table 2 shows the evaluation of helpfulness and competency of hotel staff, the best mark is 10.

Prices of hotel services in Czech Republic

According to a survey by company called KPMG, the average price per room in Czech accommodation facilities was further decreasing during 2011. Hoteliers in this year succeeded in selling a room for 1076 CZK on average, which is almost 100 CZK less than in 2010 and 400 CZK less than in 2009.

A very important indicator RevPAR, which is profit per one available room, decreased to 620 CZK in 2011. In 2009, it was still 760 CZK. Low prices lured more guests to hotels, occupancy rate of hotels increased by 4 points to 56 %. However, the length of visit was getting shorter in a long-term trend.

Current indicators in hotel segment are notably lower when compared to the period 2004-2007. The drop started in 2009, so this sector is going through several years of joyless results. The problems in hotel business will not end this year either. For customers, on the contrary, can be the year 2013 a positive one: prices will continue to oscillate in their lower limits.

The most important aspect is that hotel managers are lately successful in increasing prices. Hoteliers and agency Czech-Tourism predict a growth in tourist indicators in 2013 (Šindelář, 2013).

Final analysis

The above mentioned economic results of the hotel industry demonstrate validity of the given model regarding behavior of monopolistic firms on international markets with hotel services. While number of guests is stagnant, we see a decrease in implemented prices during growth of average costs per one day of accommodation, all that with extending offer of services (growing number of hotels, respectively increase of bed capacity). On the other hand, however, with higher number of hotel guests, a growth in prices of accommodation was detected in the last period as a result of lower number of hotels, because some of them ceased to exist. Therefore, stays are currently being sold for higher prices (per one night). The situation in hotel sector is at the moment complicated by long-lasting economic crisis, which becomes evident in savings of companies' spending intended for organizing and participation in conferences. At the same time, consumers have limited their spending on tourism, which increased the pressure on prices for hotel services.

Conclusion

The monopolistic competition includes some of the features of perfect competition and monopoly. Often there are many firms in the market, for which the entrance to (and the exit

from) the sector is free, if they can compete by the deepened differentiation of their product or services. (Soukup, Šrédl, 2011) The assumption for application of the monopolistic competition model in international trade area is the idea that trade increases the market size. In the sectors where increasing returns to scale apply it is valid that both heterogeneity of the goods the country produces and the extent of their production are influenced by market size. Countries carry on trade among each other and thus create integrated global market that is bigger than any national market. By doing so, the countries get rid of their limitations. Each of them can specialize in production of a narrower spectrum of goods than if it were not for international trade, it can also purchase goods it cannot manufacture itself from other countries. Let's suppose there are two countries and each of them has a market extent approximately for one million accommodated guests on average. When carrying on trade with each other, they may create combined market of two million of accommodated guests. In this combined market, greater possibility of choice is achieved; more types of meal are produced under lower average costs compared to the situation, in which the national markets would be separated.

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