FACTORS AFFECTING THE PRICE OF SELECTED HOTELS IN THE CZECH REPUBLIC WITH AN EMPHASIS ON MACROECONOMIC DEVELOPMENTS

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Abstract

This article aims to define factors influencing the price of selected hotels in the Czech Republic with an emphasis on regional macroeconomic development. The main research will be based on qualitative methods of statistical analysis the hypothesis will be verified or refused. The work will also analyse the differences in the detailed macroeconomic development of the monitored areas and then confront them with the price differentials of accommodation capacities through complementary quantitative research. The work deals with tourism and especially with its important part, which is undoubtedly the hotel industry. At the same time, it tries to observe the macroeconomic impacts on this area in an unusual way. In this respect, the work brings a fresh look at the links between often abstracting outputs of macroeconomic development broken down into individual components and real corporate behaviour, showing the reversal of the impact of macroeconomic developments on price formation.

Keywords: Hotel industry, macroeconomic development, quantitative statistical research, qualitative statistical research

1. Introduction

While research on factors influencing price formation is enough in manufacturing and trading companies (Olson, 1998), the service sector is not looked into by many studies. One of the few studies that deal with the pricing practices of subjects in tourism is a study by Harris. (Harris, 1998) The essence of this work is to understand the decision making processes in pricing in the context of real influences from the business cycle of companies. Several publications and studies focus on the importance of knowledge-based cost management practices (Damitio and Schmidgall, 1990), the impact of the cost breakdowns on the cost structures (Mia and Partiar, 2001), significant differences between the concepts of sustainable tourism and sustainable development (Sharpley, 2010), the causes and the context in implementing the revenue management (Jarvis, 1998, Edgar, 1998, Park D. and Yoon S.), importance of the position of the controller in hotel management (Subramaniam, 2002), pricing and their link to cost management (Pellinen, 2003), or the characteristics of budgeting and their associated practical use. (Sharma, 2002). Nevertheless studies directly related to the aforementioned pricing processes in the hotel sector are there very few or none. The aim of this work is to describe the decision making models and pricing processes used in the practice of the hotel industry with an emphasis on regional macroeconomic development.
2. Hotel and tourism industry theory

Advancement and development of both hospitality and tourism play essential roles in national economy stability, regional development enhancing, unemployment reduction, income increase and higher living standards, which definitely makes them the most important industries today. (Vukosav, 2013)

The subject of the hotel industry is the construction, management and organization of hotels and large hotel chains, ensuring their operation and providing hotel services. (Jakubíková, 2012). It can, for example, find out what guests consider to be an important factor for choosing a hotel, or which tourist subject to choose. Previous studies consider these factors among different client groups to be multidimensional and variable (Wong, 2004), while pointing out the importance of the hotel's ability to respond to multicultural aspects of demand. Further work analyzes the structure of the accommodation itself, where the greatest emphasis is placed on the initial impression, respectively reception, housekeeping, quality and variety of meals and drinks, as well as the price. (Kandampully and Suhartanto, 2000) From the point of view of the definition of tourism, Hunziker and Kempf, who in 1942 defined tourism for the first time as "summaries of phenomena and relationships arising during the journey and stay of non-residents, if the journey as itself is not understood as permanent settlement". (Jayapalan, 2001) As stated by Palatka, for the statistical purposes of monitoring and evaluating of tourism, the term had to be defined as "the activity of passengers traveling to places and staying in places outside their normal environment for a period shorter than prescribed for spending their free time, business and other purposes not related to the activities for which visitors of that site are rewarded ". (Palatková, Zichová, 2014) The main contribution of tourism lies in the generation of positive economic results, resulting in the economic growth of the state or region.

The fact that tourism is one of the most dynamically developing sectors is also confirmed by the economic representation of the World Tourism Organization satellite account. (World Tourism Organization, 2010 - 2013) Tourism accounts for more than 5% of GDP in European countries, tourism employs 2.4 million people in the EU, and the whole industry employs 12-14 million people. (Eurostat, 2012) and (World Tourism Organization 2010-2013).

3. Factors affecting hotel prices

Swarbrooke states that "in a wider context, pricing policy is among the policy of reimbursement policy, and it can be said that:" Price is a critical element of a marketing mix because it is in direct relationship to profit-generating organizations with total revenue and profit. "price policy processes are used to achieve the objectives of the revenue policy and are recognized as a goal of pricing policy according to the following ways:

- Survival orientation; this policy is chosen by companies when they have to resist a large number of competitors, or sudden changes in customer preferences. In the context of survival, a price that does not generate a profit, sometimes even below the cost limit, is set to be applicable only for a short period of time.
- Focus on profit maximization; this pricing policy is based on an estimate of demand. The price is set to bring the highest profit.
• Orientation to the highest market share; this pricing policy is based on the idea that the company with the highest market share will also have the lowest operating costs and therefore will achieve the highest profit in the long run. (Swarbrooke, 2012)

Pricing is based primarily on competitive price analysis. (Srpořá, J, 2011). Targets can also be expanded by return on investment; achieve a certain amount of revenue; acquiring new customers; keeping existing customers, etc. (Jakubíková, D. 2008) Jakubíková further states that: "The enterprise's pricing policy includes all decisions, market-oriented steps that are reflected in product pricing. The customer must be satisfied with the charged price and this price should also make a profit to the company. At the same time, pricing policy affects the turnover and profit of a company as no other direct marketing tool. Pricing policy is an essential part of marketing policy because it is necessary to decide under what conditions a product or service will be offered to customers. Experts further state that a company should have a long-term pricing policy that is not a criterion of price minimization, but a choice of cumulative purchasing conditions that maximizes the contribution to meeting the long-term strategic goals of the company at an acceptable risk. (Mallya, T. 2007)

4. Theory of macroeconomic influences on tourism and the hotel industry and the quantitative and qualitative methods theory

Professional articles and scientific studies that deal with the opposite view are very few. All publications deal with the usual view, that is, how the hotel industry and its developments affect or participate in the development of macroeconomics. One of the few works that monitors the dependence in the opposite direction is the 2012 Chena study. It deals with the impact of macroeconomics on the opposite phenomenon, in this case the price of hotel shares in the Japanese market. A similar study, but with accent on the Malaysian stock market of hotel entities, was carried out by Peyman and Ahmad. Perić states that the macroeconomic environment and its sustainability are a prerequisite for attracting foreign investors in the field of tourism as well. At the same time, it states that macroeconomic policy plays an important role in obtaining foreign capital, since foreign investors are targeting their capital in countries where greater predictability is dominated and where safer return planning of invested capital can be made. (Perić a Radić, 2016) The detailed analysis of macroeconomic factors and their impacts on the hotel industry in Ukraine points to the fact that the high volatility of the monitored indicators has a detrimental effect on the country's credibility associated with the planning of long-term investments to which the development of the hotel sector is undoubtedly ranked. (Bovž L. A., 2015).

To verify the influence of individual regional macroeconomic variables can be used both qualitative and quantitative research. Using quantitative statistical analysis methods, we can confirm the results of qualitative research and point out the information obtained as properly analyzed. For this purpose, methods of regression and correlation analysis, regression matrices will be used and at the conclusion of the Durbin - Watson test. The correlation shows the statistical dependence of two quantitative variables (it measures the mutual relationship of two variables) The two variables are correlated if some values of one variable tend to occur together with certain values of the second variable (Hendl, 2011) Correlation is significant at the significance level $\alpha = 0.01$, ie $H_0$ is rejected for a major significance of 0.01. Correlation is
significant at the significance level $\alpha = 0.05$, ie $H_0$ is denied to the significance of 0.05 (Hendl 2004). For regression analysis, it is necessary to know the shape of the regression function. We usually choose it to match the investigated or considered dependencies as much as possible. It is customary to choose a regression function with as few regression coefficients as possible, but sufficiently flexible and with the required features: monotony, prescribed values, asymptotes etc. However, it is usually based on experience, but at present, when performing a regression analysis on a PC, database of regression functions. (Karpíšek, 2011) Correlation analysis is inextricably linked to the regression, when it determines the existence of dependence and its species, measures the leakage of dependence and verifies hypotheses about the statistical significance of dependence. (Čermáková, 1995) The Durbin-Watson test is particularly useful when data are sorted in a natural way, they are collected in consecutive periods. It examines the autocorrelation of residues, ie whether the successive residues are correlated with one another. If we detect autocorrelation, it means that residues cannot be independent. Conversely, this implication does not apply if we are not sure about the normal distribution of residues. Ideally, the statistic value $d$ should be 2. A value less than 2 may indicate a positive correlation of adjacent residues, a larger value may indicate a negative correlation. The slight disadvantage of this method is that the value of $d$ depends on the specific matrix of the plan. Therefore, it is necessary to calculate the statistics again for each model. It is also necessary to know that this statistic is based on a matrix of a plan that contains a unit vector (absolute member model). (Karpíšek, 2011)

Qualitative research is, according to the well-known definition of Disman (2000, p. 285), a non-quantitative investigation and interpretation of social reality, with the aim of uncovering the meaning underlying the information communicated. The aim of qualitative research is to create new hypotheses and theories. Qualitative research is, in essence, an analysis of texts that lead to an understanding of the phenomena studied. Apart from understanding, the analysis also serves to describe and interpret the phenomena of human life, often by the words of the studied ones. Disman also defines qualitative research as follows: "Qualitative research is a non-quantitative investigation and interpretation of social reality. The aim is to uncover the importance underlying the information communicated. The fundamental difference between the two types of research is the way of learning. The method of quantitative research is deductive, while qualitative research is an inductive method; the theory is induced - from the data obtained as if it "emerges". Examples of qualitative methods:

- case studies
- ethnography (including observation and participatory observation)
- grounded theory
- exploring language-based narratives
- ethnomethodology and conversational analysis
- analysis of discourse, semiotics
- Analysis of documents and texts

Qualitative variables are typically referenced as related to subjects that are categorical, ie they have no natural or logical order such as eye color, type of residence or occupation. Categories or levels of a qualitative variable may be represented by a name (e.g., male / female) or a symbol, and although they may also be encoded by numbers, they still describe categories. (Ogranješek & Gall, 2010) In qualitative research, random or structured samples can be modified from large,
5. Selection of entry data files for measurement and justification

In order to apply the qualitative research methods to the widest extent, or to make the results as relevant as possible, it is essential that selected hotels be selected. This selection must reflect the objectives of the work and should correspond to the intended research objective. As hotels or accommodation facilities are divided into many aspects on the fixed (hotels, motels), mobile (boats, wagons) according to the time perspective of the seasonal and seasonal, according to the location (mountain, seaside and accent on additional services hotels, golf resorts, congress hotels, etc.), it is necessary to choose the ones which are the most suitable for their work objectives. For the research of impacts of the changes in the development of the individual macroeconomic variables are considered hotels that meet the following conditions:

- Hotels located in the very center of the regional city (excluded re such as hotels with wellness focus in the mountain regions)
- These are First Class hotels according to the official methodology of the Association of Hotels and Restaurants of the Czech Republic, which corresponds to the standard 4 ****
- Selected facilities are oriented to business clientele (exclusive hotels such as exclusive boutique hotels or exclusive castle town hotels are excluded)
- All selected facilities have one congress space for at least 150 people (but not the sum of space, excluded are small hotels, even if they are focused on business clients) and offering other lounges rooms, esp. break-out rooms.
- The regions to be compared should be approximately the same size, they should have approximately the same level of unemployment and approximately the same number of inhabitants
- At the same time, both regions have the same features in their geographical location and both are border regions when they are neighboring other EU countries

The aim is to assess the impact of macroeconomic indicators on the prices of selected groups of accommodation establishments in selected regions, by analyzing differences of average rack rates. Two regions were selected for practical use of quantitative research methods, which are similar to input data and comparable data. The Zlín Region (ZLN abbreviation) and Plzeňský kraj / Western Bohemia (the abbreviation PLZ) were selected for analytical research. Both territories have approximately the same level of economic output per capita (ZLN region: CZK 222 thousand, PLZ 217 thousand, difference 2%), both of them are on the border with other EU countries (ZLN - Slovakia, PLZ - Germany) and both regions they have approximately the same population (ZLN region 584,000 vs. PLN 579,000, difference 1%). Nevertheless, there is considerable disproportion between the areas surveyed. While the ZLN region has an average accommodation rack price of CZK 2,250 (in March 2017, eg the Czech National Bank rate of EUR 1 = 27,03 CZK, about EUR 83), the PLZ region shows significantly higher values of CZK
2,710 (approximately EUR 100). In relative terms this corresponds to a average 20% difference. The absolute difference is 460 CZK (approx. EUR 17) RevPAR. Details average room price could be seen in table below.

Table 1: The comparison of average rack room rates

<table>
<thead>
<tr>
<th></th>
<th>Year 2013</th>
<th>Year 2014</th>
<th>Year 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>average rack rate room ZLN</td>
<td>2 050 CZK</td>
<td>2 150 CZK</td>
<td>2 250 CZK</td>
</tr>
<tr>
<td>average rack rate room PLZ</td>
<td>2 600 CZK</td>
<td>2 780 CZK</td>
<td>2 710 CZK</td>
</tr>
<tr>
<td>average rack rate room PLZ vs ZLN</td>
<td>21,2%</td>
<td>22,7%</td>
<td>17,0%</td>
</tr>
</tbody>
</table>

The thesis uses the method of quantitative research, when it uses the correlation analysis to determine which macroeconomic variable affects the average room price and, if so, what extent. The relationship between these indicators is captured using the correlation coefficient R - matrix of correlation coefficients. Table 3 gives a correlation matrix of preselected regional macroeconomic values relative to the Zlín Region, Table 4 a correlation matrix relative to the Pilsen Region.

Table 2: The correlation matrix of the five macro indicators for the Zlín Region and statistical significance
* Correlation is significant at significance level $\alpha = 0.05$

<table>
<thead>
<tr>
<th>Correlation matrix (Zlín region - abbrev. ZLN)</th>
<th>sales of industry ZL</th>
<th>number of participants in ZL conferences</th>
<th>gross monthly wage in the ZLN industry only</th>
<th>gross monthly wage ZLN</th>
<th>GDP ZLN (nominal prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sales of industry ZL</td>
<td>1</td>
<td>0,583</td>
<td>0,886</td>
<td>**</td>
<td>0,856</td>
</tr>
<tr>
<td>number of participants in ZL conferences</td>
<td>0,583</td>
<td>1</td>
<td>0,737</td>
<td>*</td>
<td>0,755</td>
</tr>
<tr>
<td>gross monthly wage in the ZLN industry only</td>
<td>0,886</td>
<td>**</td>
<td>0,737</td>
<td>*</td>
<td>1</td>
</tr>
<tr>
<td>gross monthly wage ZLN</td>
<td>0,856</td>
<td>**</td>
<td>0,755</td>
<td>*</td>
<td>0,995</td>
</tr>
<tr>
<td>GDP (nominal prices)</td>
<td>0,894</td>
<td>**</td>
<td>0,708</td>
<td>*</td>
<td>0,905</td>
</tr>
</tbody>
</table>

All monitored variables show a strong dependence, where the strongest relationship shows the average gross monthly wage and the gross monthly wage related only to industry. The second most significant dependence corresponds to the relation of GDP in nominal prices and revenues related only to industry. The weakest dependence is shown by the ratio of the number of participants in conferences and the sales of the industry, while at the same time the most depends on the gross monthly wage, either in general terms or divided on industry.

Table 3: Correlation matrix of five indicators for the Pilsen region and statistical significance
* Correlation is significant at significance level $\alpha = 0.05$
Correlation matrix (Plzen region - abbrev. PLZ)

<table>
<thead>
<tr>
<th></th>
<th>sales of industry PLZ</th>
<th>number of participants in PLZ conferences</th>
<th>gross monthly wage in the PLZ industry only</th>
<th>gross monthly wage PLZ</th>
<th>GDP PLZ (nominal prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sales of industry PLZ</td>
<td>1</td>
<td>0.568</td>
<td>0.727 *</td>
<td>0.672 *</td>
<td>0.866 **</td>
</tr>
<tr>
<td>number of participants in PLZ</td>
<td>0.568</td>
<td>1</td>
<td>0.755 *</td>
<td>0.753 *</td>
<td>0.629</td>
</tr>
<tr>
<td>conferences in PLZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gross monthly wage in PLZ</td>
<td>0.727 *</td>
<td>0.755 *</td>
<td>1</td>
<td>0.995 **</td>
<td>0.894 **</td>
</tr>
<tr>
<td>industry only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gross monthly wage PLZ</td>
<td>0.672 *</td>
<td>0.753 *</td>
<td>0.995 **</td>
<td>1</td>
<td>0.871 **</td>
</tr>
<tr>
<td>GDP PLZ (nominal prices)</td>
<td>0.866 **</td>
<td>0.629</td>
<td>0.894 **</td>
<td>0.871 **</td>
<td>1</td>
</tr>
</tbody>
</table>

The Pilsen correlation matrix shows similar levels of the effects of the monitored indicators. Equal dependence shows the gross monthly wage in industry on the gross monthly wage in the overall concept. Even in this case, the smallest influence is shown by the variable number of conference participants and industry sales, although the expected weakness of the region's expected GDP should be. A common matrix correlation measurement was undertaken for other variables such as Accommodation capacities in the region, Number of guests arrived, Population and Number of foreign residents. However, no significant dependency or significant effect was found for these variables.

The following table lists selected measured macroeconomic variables on a regional basis, which can influence the price formation and its average level in the monitored regions.

Table 4: Macroeconomic indicators and the power of their influence

<table>
<thead>
<tr>
<th>Regional macroeconomic variables</th>
<th>Average values of the PLZ region</th>
<th>Average values of the ZLN region</th>
<th>Percentage difference vs. ZLN PLZ</th>
<th>Weight of influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation capacities in the region</td>
<td>517</td>
<td>393</td>
<td>24.2%</td>
<td>ISI</td>
</tr>
<tr>
<td>Number of guests arrived</td>
<td>522 543</td>
<td>511 051</td>
<td>2.4%</td>
<td>ISI</td>
</tr>
<tr>
<td>Population</td>
<td>572 355</td>
<td>588 885</td>
<td>-2.9%</td>
<td>ISI</td>
</tr>
<tr>
<td>Number of foreign residents</td>
<td>24 810</td>
<td>8 050</td>
<td>67.5%</td>
<td>ISI</td>
</tr>
<tr>
<td>GDP of the region</td>
<td>195 749</td>
<td>183 390</td>
<td>6.3%</td>
<td>SI</td>
</tr>
<tr>
<td>Average wage</td>
<td>22 536</td>
<td>20 747</td>
<td>8.0%</td>
<td>SI</td>
</tr>
<tr>
<td>Average wage in industry only</td>
<td>24 188</td>
<td>21 759</td>
<td>10.1%</td>
<td>VSI</td>
</tr>
<tr>
<td>Number of conference attendees</td>
<td>57 466</td>
<td>43 005</td>
<td>34.1%</td>
<td>VSI</td>
</tr>
<tr>
<td>Sales of industry</td>
<td>55 109</td>
<td>42 012</td>
<td>31.8%</td>
<td>VSI</td>
</tr>
</tbody>
</table>

VSI=very significant influence, SI= significant influence, ISI= insignificant influence

A seen above the indicators with the most significant influence are Sales of industry as the strongest variable followed by Number of conference attendees and Average wage in industry only. Contrary the weakest influence is proven in the indicators such as Population, surprisingly Number of guest arrived or amount of Accommodation capacities in the region, although the relative difference of average values was high.
6. Conclusion

The aim of this work was to describe possible influences on price processes used in the practice of the hotel industry. The point of the research was to find out whether the average prices of selected hotels in the monitored regions may show dependence on the development of rational macroeconomic indicators. In particular, the relationship between the cost of accommodation and regional macroeconomic development, or its selected components, was examined, such as the average wage in industry, industry sales, conferences, or regional performance measured by GDP. Using correlation matrices, the impact rates of individual indicators were assessed, which were then ranked according to the impact strength into three groups of factors: on the factors with very significant impact, on the factors that had a significant impact, and on the factors that had an insignificant effect.

The macroeconomic variable Average wage only in industry has a very strong impact. This can be explained by the structure of the industry. If a high value-added industry is developed in the region, which also makes a major part of the industry's revenue, it is obvious that it will also employ a large number of experts whose labor costs are high. On the other hand, these mostly educated employees with higher pay rates are more willing to spend on higher standard accommodation and, of course, at a higher price. Most of these are business visits in the corporate, business or MICE segment. Sales of industry is then an indicator that corresponds to this finding.

Although the number of foreign residents in the two monitored regions shows the highest relative difference, almost 2/3, this factor has a small impact on the accommodation price. It can be assumed that this group of residents is only a small part of the guests of the monitored hotels and although their purchasing power is greater than that of the residents, the overall average house price is not influenced or minimal.

Limitations of this research is certainly a small sample of measurement. It would be appropriate to expand the measurement of both the regions more and also more indicators, which can reasonably be expected to influence. Infrastructure assumptions such as the development of the motorway network or the number of international airports in the monitored area, respectively the distance from the center of these areas, can be considered as such indicators. Another restrain was the limited time that the research was conducted. It can be concluded that more accurate results would be achieved in the longer term or that inaccuracies in the form of price deflection or deflection in the values of monitored macroeconomic variables could be eliminated.

References


