WERE THE CZECH HOTELS ABLE TO CONFRONT CURRENT APPRECIATION OF THE CZECH CURRENCY BEFORE THE END OF THE EXCHANGE RATE COMMITMENT?

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Abstract

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This paper has focused on the issue of foreign exchange markets in relation to tourism and hotel industry in the small open economy such as the Czech Republic. After more than three years when the Czech National Bank (CNB) intervened on the foreign exchange market, everybody look forward to development of exchange rates after the end of the exchange rate commitment. The aim of this study is to show how Czech hotels were been able to confront current appreciation of the Czech koruna before the CNB had ended the exchange rate commitment. According to this aim it was necessary to investigate relations between exchange rates and turnover of Czech hotels as the first. Therefore, it has been obtained time series of the hotels' profit and loss statements from Bureau van Dijk's Amadeus international statistical database as well as exchange rates from the CNB online database. Other data is from the Eurostat and the World Bank online statistical database. As the main estimation method it is used the GMM approach with panel data for period from 2007 till 2014. After the estimation of those statistical significant relations it is essential to describe the ways, how were the hotels been able to face the exchange rate risk before the end of the commitment. Furthermore, it has been differentiated between natural hedging for smaller hotels and the usage of the financial derivatives for these bigger. Three types of hedging are described: (i) natural hedging, (ii) usage of a currency forward, and (iii) taking a loan in foreign currency.

Keywords: Czech Republic, FX interventions, tourism, hotel industry

INTRODUCTION

The Czech National Bank (CNB) started the expansionary monetary policy when its board members accepted the foreign exchange (FX) interventions in November 2013. It caused strong depreciation of the Czech currency (CZK) which was affected by these interventions till the spring of 2017. Time has changed and the CNB has informed the public about the end of the exchange rate commitment in the start of April 2017. The FX rates volatility would affect business revenues of not just export/import companies. Domestic tourism and the Czech hotels can suffer in a case of a possible domestic currency appreciation due to customers from abroad. Therefore current paper is highly motivated. An economic importance of tourism as well as of the hotel industry as a whole, both has still attracted the attention of researchers from entire world (Atan and Arslanturk, 2012; Chou, 2013; Dwyer *et al.* 2004; Onetiu and Predonu, 2013). It should not have been underestimated in a small open economy, as the Czech economy is well known. Even though that specific business industry of the Czech hotels suffered by the impact of the global financial crisis (GFC) in 2009 and 2010 (Heryán and Kajurová, 2016), the hotels had to affect a new situation on the FX market, as the rest of

the Czech businessmen, according to the exchange rate commitment taken by the CNB. Heryán (2017) concludes before the end of the commitment that there is statistically significant relation between development of the Czech hotels and the exchange rates. He had made the suggestion to hedge against a possible appreciation of the Czech currency even before the CNB ended the exchange rate commitment.

This paper aims to show how Czech hotels were been able to confront current appreciation of the Czech koruna before the CNB had ended the exchange rate commitment. The estimated period is from 2007 till 2014, so the period affected by the GFC as well as by the interventions of the CNB. This study contributes to the issue of the policy implications not just within the business of the hotels. From results it is possible to deduce future implications for other business industries, as well. Foreign tourism in contrast with economic development is the frequent issue among the research abroad. However, Czech hotels have more revenues in foreign currency, the costs are almost all in the domestic currency. Therefore it is not investigated the impact on the earnings of the hotels. Otherwise, it is investigated relationship between selected economic variables included FX rates and the revenues in form of the hotels' turnover.

The paper is structured as follows. After the Introduction the second section is divided into two parts. Firstly, it has been reviewed recent literature focusing on the economic and financial issues of the hotels, and secondly, it has been described selected economic events in the Czech Republic within estimated period. The third section describes used data as well as the methodology. Whereas in the fourth Section it has been reported our results for the panel regression analysis, the possible ways to confront the exchange rate risk are described in next section. The sixth section finally concludes.

The current state of knowledge

This Section is divided into two parts. As the first it is made a review of a few selected papers connected with financial and economic issues of the hotel business. As the second it is described a few economic events which has affected the Czech economy.

Selected empirical studies within the hotels' financial issues

It is argued by Dwyer *et al.* (2004) that the importance of tourism to economies is well recognized. As the result, when tourism changes or policy shifts are being considered, there is an interest in determining what impact on the economy they might have, they argue as well. However, the approach to economic evaluation typically undertaken in the tourism context, is both incomplete and misleading. Among others they mentioned a few interesting research questions. (i) What impact will a change in domestic or international tourism, have on economic activity in a country or region? (ii) What impact will an increase in outbound tourism have on activity in the home country? (iii) What impact on economic activity within a state will intrastate tourism have? (Dwyer *et al.*, 2004).

Chou (2013) examines causal relationships between tourism spending and economic growth in 10 transition countries for the period 1988–2011. Panel causality analysis, which accounts for dependency and heterogeneity across countries (including V4 countries), is used herein. The empirical results support the evidence on the direction of causality. He mentioned that the relationship between tourism spending and economic growth for both developing and developed countries has been extensively researched over the past several decades. In detecting causal linkage between tourism spending and economic growth, he utilize the panel causality approach instead of the time series method, since panel data sets include information not only from the time series dimension but also the cross-section dimension. Based on this advantage of panel data analysis he argue that non-stationary panel tests (unit root, cointegration and causality) have become a more powerful econometric methodology in recent years (Chou, 2013).

It is noticed by Atan and Arslanturk (2012) that tourism is the world's largest industry and one of the fastest growing sectors, accounting for over one-third of the value of total worldwide traded services. They also argue that tourism, in the last few decades, has become an indispensable source of income for developing countries, Turkey in particular. This aspect of tourism has managed to catch the attention of a number of countries, principally developing ones. The tourism literature abounds a number of studies into tourism and economic growth nexus through a variety of methods such as Granger causality, cointegration as well as regression analysis.

However, there are hardly any studies incorporating input-output analysis according to them. According to their opinion, in Turkey, tourism is growing very fast and its contribution to the economy is highly significant. According to their results for output multiplier values of the tourism, especially for the output significance of hotel and restaurants indicator of tourism sector to be transformed into growth of the economy, sectors that benefit from it should be equally vibrant. Identification of such sectors is important for policy purposes as they may constrain the growth impact of tourism due to them. Their analysis shows that tourism sector has important and significant impact on economy especially with hotel and restaurant indicator. In conclusion tourism is not the key sector in economy, but especially for hotel and restaurants and supporting and auxiliary transport activities.

Activities of travel agencies indicators, tourism sector has high backward linkage in the economy, as well. According to their results, it has been also seen that the total amount of the input from the other sectors for the output in tourism sector is high and tourism sector is in a structure of nurturing other sectors hence. In their study it is supported the idea that tourism sector will support the production in other sectors, with a considerable impact on growth (Atan and Arslanturk, 2012).

Onețiu and Predonu (2013) argue that efficiency is a fundamental development and tourism is an integral part of the economy of a state. Tourism is considered very important for both social and economic development of Romania. In their paper they intend to show economic and social efficiency that can bring tourism to a state. First of all, to show the economic efficiency of tourism in their country. They started from the principle of economic efficiency by comparing the effects with the effort. Second, tourist activity, using resources available to that, generates not only economic, but also social effects. These effects have been analyzed in the study as well as economic and social indicators such effects and efficiency of each component separately. Furthermore, they show which factors can lead to economic efficiency and also the social, from the general formula for determining the efficiency. Last but not least, they argue that tourism is very closely related to the civilization and culture, between them instituting an interdependent relationship. By harnessing the natural resources, human and financial placed at its disposal, tourism generates these economic and social effects that increase the economic efficiency, progress and civilization. According to that they considered this issue with particular relevance and importance to the growth and economic development and social welfare as a whole (Onetiu and Predonu, 2013).

The exchange rate commitment taken by the Czech National Bank

According to the Czech National Bank (CNB, 2017) the aim of using the exchange rate as an additional monetary policy instrument, and therefore of using FX interventions to weaken the koruna, was the same as in the case of interest rates. In line with the CNB's statutory mandate, the objective was to maintain price stability in the Czech economy. It was expressed by the CNB's inflation target of 2%. In other words, the aim was to prevent deflation, to ensure that the 2% inflation target would be achieved in a sustainable manner and to accelerate the return to a situation where the CNB will again be able to use its standard tool, i.e. interest rates. The use of FX interventions as an appropriate tool for countering deflation risks was recommended by an IMF mission in 2013. So, the Bank Board decided to use the exchange rate as a monetary policy instrument, and therefore to commence FX interventions, on 7 November 2013.

In the Fig. 1 we see development of FX rate of CZK to EUR as well as CZK to USD with both linear trends. The correlation coefficient between logarithmic growth rates of both currencies is 0.85, statistically significant at 1% level. We can see that the 2013 monetary interventions of the CNB influenced both selected foreign exchange rates. Even recent events have showed that a need to maintain expansionary monetary conditions to the current extent persists, the Bank Board firstly stated that the CNB would have not discontinued the use of the exchange rate as a monetary policy instrument before 2017 Q2. So, earlier the Bank Board considered it likely that the commitment would have been discontinued around the middle of 2017 (CNB, 2017).

According to the decision of the Bank Board from 30 March 2017 the exchange rate commitment was just one-sided. This time, it had meant the CNB will not allow the koruna to appreciate to levels it was
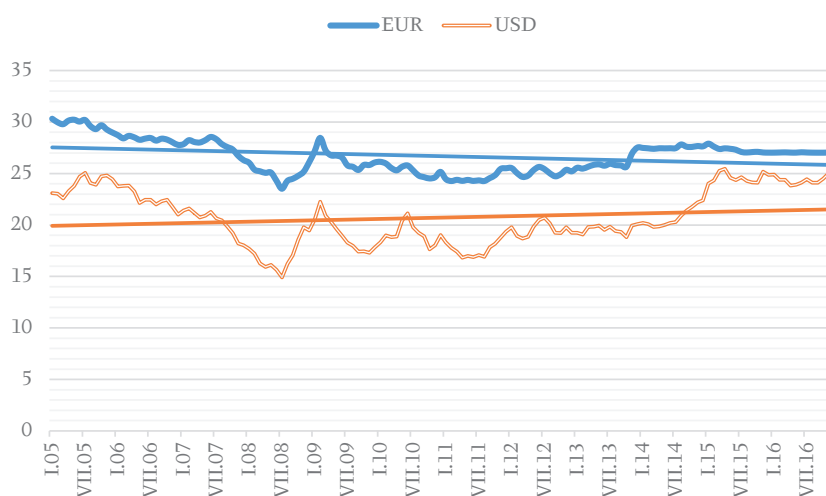
1: *Development of selected foreign exchange rates*
Source: Author's illustration from the CNB online database.

no longer be possible to interpret as "close to 27 EUR/CZK". The CNB prevented such appreciation by means of automatic and potentially unlimited interventions, i.e. by selling koruna and buying foreign currency. They promised, if the exchange rate departs from 27 EUR/CZK on the weaker side, they allow the koruna exchange rate to move according to supply and demand on the foreign exchange market (CNB, 2017).

Nevertheless, even the banking sector itself was affected by the situation on the market. The Czech National Bank argued in its past monitoring (CNB, 2016, p. 12) that the current central question was whether banks would have continued to earn enough money to be resilient and stable. The central bankers also argued that opinions are divided, however, on the issue of how to solve the difficulties facing the European banking sector. One side argued that banks must radically alter their business models, while the other side argued that this would have not been enough to end the sector's plight and that further market consolidation had been needed, which meant a further reduction in volume in the banking and financial system.

Finally, at its extraordinary monetary policy meeting 6 April 2017, one week later, the CNB Bank Board decided to end the exchange rate commitment. The discontinuation of these monetary interventions means that the koruna exchange rate will now move according to supply and demand on the foreign exchange market. As a result, it may fluctuate in either direction in the short term (CNB, 2017). Nonetheless, only the appreciation means the risk for the hotels in our case.

MATERIALS AND METHODS

It is obtained time series for 1484 Czech hotels from Bureau van Dijk's Amadeus international statistical database (BvD data). Annual data has been obtained for period from 2005 till 2014. Among panel data of those hotels it is used their turnover in mil. EUR, from their profit and loss statements. To estimate whether or not there are some significant relations between foreign exchange market and its impact on the business of the hotels in the Czech Republic, it has been used exchange rates (to EUR as well as to USD) from the online database of the Czech National Bank. From the World Bank statistical database (WB data) it has been used expenditures of international outbound visitors in the Czech Republic, excluding payments to foreign carriers for international transport. All of these data above have been obtained in panels and furthermore, our dataset has been standardized through the examining the natural logarithms.

Then it is used the rate of inflation from the WB data, which is measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP was not used according to the fact, that we do not

know national structure of foreign clients within hotels in the Czech Republic. Moreover, for support examinations it has been used three other variables: (i) number of individual arrivals taken from the WB data, which includes international inbound tourists (overnight visitors), the number of tourists who travel to the Czech Republic for a period not exceeding 12 months and whose main purpose in visiting the country is other than an activity remunerated from it. The data on inbound tourists refer to the number of arrivals, not to the number of people traveling. Thus a person who makes several trips to a country during a given period is counted each time as a new arrival. Then, (ii) number of hotels' employees is taken from the BvD data. Finally, (iii) number of nights spent in hotels by non-residents is taken from the Eurostat online statistical database.

GMM model with panel data

As the key estimation method it has been employed the two-step Generalized Method of Moments (GMM) approach with data in panels through examining their differences within the GMM process. Because of that it is estimated models for 2007 till 2014 period in the paper. To reach the aim of the paper these three selected relations has been investigated through the estimation of equations (1), (2) and (3):

$$\Delta \log TO_{it} = \iota_{it} + \varphi_1 \Delta \log TO_{i(t-1)} + \gamma_0 \Delta \log C_{it} +$$
$$+ \gamma_1 \Delta \log \Delta C_{i(t-1)} + \xi_0 \Delta \log E_{it} +$$
$$+ \xi_1 \Delta \log E_{i(t-1)} + \omega_0 CPI_{it} + \qquad (1)$$
$$+ \omega_1 CPI_{i(t-1)} + \beta_0 \Delta \log ER_{it} +$$
$$+ \beta_1 \Delta \log ER_{i(t-1)} + \iota_{it}$$

where the endogenous variable TO_{it} is the turnover of i hotels in time t. Among exogenous regressors it has been employed these variables: C_{it}, which means the costs of employees within each hotel; E_{it} is the expenditures of foreign guests; CPI_{it} is the rate of the inflation; and finally, variable ER_{it} means the average exchange rate of the Czech koruna against foreign currency, either EUR or USD. According to the usage of the GMM estimation method with the panel data it has been used variable $TO_{i(t-1)}$ which is the turnover of i hotels in time t lagged by one year. According to Heryán and Tzeremes (2017), the tests by Arellano and Bond show that the first order statistic is significant, whereas the second order it is not. This is what it would be expected if the model error terms were serial uncorrelated in levels. Therefore, it is rejected the presence of significant serial correlation, thus implying that GMM estimators are consistent.

A relation between a partial turnover and selected economic variables is described by equation (2):

$$\Delta \log TS_{it} =_{it} + \varphi_1 \Delta \log TS_{i(t-1)} + \gamma_0 \Delta \log C_{it} +$$
$$+ \gamma_1 \Delta \log C_{i(t-1)} + \xi_0 \Delta \log E_{it} +$$
$$+ + \xi_1 \Delta \log E_{i(t-1)} + \omega_0 CPI_{it} + \qquad (2)$$
$$+ \omega_1 CPI_{i(t-1)} + \beta_0 \Delta \log ER_{it} +$$
$$+ \beta_1 \Delta \log ER_{i(t-1)} +_{it}$$

which varies from equation (1) only by the endogenous variable TS_{it}. It is also the turnover of i hotels in time t, just weighted by a share S_n of nights spent by non-resident tourists on the number of nights spent by all tourists, $S_n = (nights\ of\ non\_residents)/(nights\ by\ all\ tourists)$. Through this share we are able to see how much is approximately the turnover produced by foreign guests. However, there are a few theoretical assumptions: (i) each hotel has to have the same share of tourists from abroad, (ii) foreign guests have to spend the same amount in the hotel explored in CZK, as those domestic guests, and (iii) the guests from abroad pay only in foreign currency.

Finally, a relation between an individual turnover produced by one employee and selected economic variables is described by equation (3):

$$\Delta \log TN_{it} =_{it} + \varphi_1 \Delta \log TN_{i(t-1)} + \gamma_0 \Delta \log CN_{it} +$$
$$+ \gamma_1 \Delta \log CN_{i(t-1)} + \xi_0 \Delta \log EX_{it} +$$
$$+ \xi_1 \Delta \log EX_{i(t-1)} + \omega_0 CPI_{it} + \qquad (3)$$
$$+ \omega_1 CPI_{i(t-1)} + \beta_0 \Delta \log ER_{it} +$$
$$+ \beta_1 \Delta \log ER_{i(t-1)} +_{it}$$

which differentiates from equation (1) again by the endogenous variable TN_{it} but also the regressors CN_{it} and EX_{it}. Variables TN_{it} or CN_{it} are hotel's turnover or the staff costs, both examined to one employee. Therefore, the whole expenditures of hotel guests have been examined to one arrival. We are able to see whether one arrival's revenues for the hotel as well as the costs to one employee have an impact on individual turnover to one staff.

Akinci *et al.* (2013) arg that applying a pseudo general model reduction method in the application of the GMM estimator avoids multicollinearity problems. The pseudo general model includes the current and first lagged value of variables $C_{i(t-1)}$, $CN_{i(t-1)}$, $E_{i(t-1)}$, $EX_{i(t-1)}$, $CPI_{i(t-1)}$, $ER_{i(t-1)}$. They also argue that the two-step coefficient estimator is asymptotically efficient and robust to whatever heteroscedasticity, autocorrelation and cross-correlation is modeled by the new variance-covariance matrix. Therefore, within the equations (1), (2) and (3) the instruments are also restricted to be the same for each model; these are the current values and the first lag of each of our instruments.

Below, in Tab. I we can see several characteristics of logarithmic values made from our panel dataset that has been used in changes within the panel GMM estimation. In particular, even though maximum and minimum always vary, we see that there are not any abnormal values. Nonetheless, the standard deviation, which means the measurement for risk, could be understood as a key characteristic. In the case of all endogenous variables, TO_{it}, TS_{it}, and TN_{it}, the standard deviation is really similar. So, our analysis can be really comparable. It is also obvious that the lowest standard deviation values are evident for both exchange rates, EUR/CZK and USD/CZK.

Next important value included in Tab. I is number of observations. It varies due to the missing data. Number 14,840 is the maximum value, which is obvious only in cases of macroeconomic data such as E_{it}, EX_{it}, CPI_{it}, and both selected exchange rates. On the other hand we see just 8,148 (55%) within cross-sections of panels for endogenous variables, and even only 5,811 (40%) in the case of C_{it}, or 5,358 (36%) in the case of CN_{it} when the staff costs are explored to one employee. Therefore the usage of panel GMM approach is the only solution for such incomplete time series with missing data within panels. The least squares panel regression is neither sufficient nor applicable in our case.

RESULTS

Although it has been employed the first lagged values according to Akinci *et al.* (2013), because of the potential problem with multicollinearity among regressors due to significant higher level of correlation coefficient between logarithmic changes of selected FX rates (0.85) it has been estimated three models with each FX rate variable separately.

I: *Descriptive statistics of panel variables in natural logarithms*

	TO_{it}	TS_{it}	C_{it}	E_{it}	CPI_{it}	EUR/CZK	USD/CZK	TN_{it}	CN_{it}	EX_{it}
Mean	5.29	4.82	4.36	22.14	1.30	3.28	2.99	−3.87	1.83	6.07
Median	5.61	5.15	4.62	22.22	1.45	3.27	2.97	−3.55	1.96	6.16
Maximum	11.00	10.53	9.32	22.37	3.53	3.39	3.18	1.78	6.95	6.29
Minimum	−3.32	−3.78	−3.31	21.68	−1.45	3.20	2.84	−12.59	−5.93	5.62
Std. Dev.	2.15	2.15	1.99	0.22	1.40	0.06	0.10	2.15	0.88	0.22
Observations	8,148	8,148	5,811	14,840	14,840	14,840	14,840	8,148	5,358	14,840

Source: Author's calculation in EViews 9.5.

From the results of the panel GMM models in Tab. II below it is obvious that all exogenous of exchange rates, EUR/CZK as well as USD/CZK, are statistically significant. According to the estimation output when we also employ selected macro- and microeconomic variables, it is possible to see a few significant economic relations. Nonetheless, as the first we should control several technical indicators within panel GMM models describing the period from 2007 till 2014. According to Sargan-Hansen tests, the tests of over-identifying restrictions, any of the models do not display problems with orthogonality. Null hypothesis, which is that the instruments are valid instruments as well as uncorrelated with the error term, is accepted in all our cases. Further, Arellano-Bond testing for serial correlations does not indicate such problem within any of the estimation. The tests show that the first order statistic is statistically significant, whereas the second order statistic is not, which is what we would expect if the model error terms are serial uncorrelated in levels.

Current paper focuses on the foreign exchange (FX) risk. Therefore, the next few paragraphs, differenced due to the FX rate EUR/CZK or USD/CZK, will mainly focus on the relation between the turnover of the Czech hotels and selected exchange rates. First, in Tab. II we see that within all three estimation outputs of panel GMM models made using the changes, with endogenous dependent variable TO_{EUR}, TS_{EUR}, and also TN_{EUR}, an evident biggest impact of the FX rate EUR/CZK. This negative relation would be caused by that decreasing linear trend of the FX rate in estimated period (see Fig. 1). However, Fig. 1 is made by using daily data and when we look at the average annual data trends (linear and logarithmic) of both selected FX rates are decreasing. So, it looks like differences between

models using different FX rates are not caused by different development and trends within selected currencies. On the other hand, it has been estimated models for the period 2007–2014 (data for 2005 and 2006 are excluded due to the theoretical basics of two-step GMM model). Although the development of FX rate after exchange rate commitment taken by the CNB in November 2013, could not have affected our estimations, the development at times before November 2013 could have affected it. At that times before the commitment there were usual that the Czech koruna had appreciated. It means, higher negative shocks among FX market. Second, we see positive impact of the staff costs within all GMM models. Therefore we argue that increasing of these costs would result into a higher turnover. Third, tourists' expenditures for each stay in the hotels have negative impact on the turnover. It looks abnormal, however, these expenditures which means returns for hotels in fact, are taken in USD from the World Bank statistical database. So, the highest negative impact of the FX rate EUR/CZK caused this negative impact of those expenditures. Fourth, when we look at positive impact of non-lagged inflation, we see that the hotels could have been able to adjust their prices according to the inflation. Therefore, the inflation could have positive impact to the hotel business.

Whereas the impact of the FX rate EUR/CZK is negative, the impact of USD/CZK is positive in all three estimated cases, with dependent variables TO_{USD}, TS_{USD}, and TN_{USD} as well. First, while the FX rate EUR/CZK was affected by negative shocks because the Czech koruna appreciated in the period before the commitment, the FX rate USD/CZK was affected by positive shocks in the same period. Second, on the other hand, the coefficient of staff costs is simultaneously positive within all

II: *Estimation results of panel GMM estimations (turnover is dependent variable*

	TO_{EUR}	TO_{USD}	TS_{EUR}	TS_{USD}	TN_{EUR}	TN_{USD}
Turnover(1)	0.1162	0.3122[a]	−0.2744[a]	0.0285	0.2595[a]	0.2445[a]
Staff Costs	0.5115[a]	0.5033[a]	0.5281[a]	0.5143[a]	0.2747[a]	0.2941[a]
Staff Costs(1)	0.0030	−0.0821	0.2211[a]	0.0828	−0.0294	−0.0322
Tour. Expenditures	−0.2594[a]	0.7062[a]	−0.4423[a]	0.6117[a]	−0.2335[a]	0.9669[a]
Tour. Expenditures(1)	0.3928[a]	−1.2582[a]	0.1822	−1.5166[a]	0.3285[a]	−3.6788[a]
Inflation	0.0253[a]	−0.0138[a]	0.0385[a]	−0.0066	0.0818[a]	−0.0987[a]
Inflation(1)	−0.0249[a]	−0.0076[b]	0.0144[a]	0.0245[a]	−0.0190[a]	−0.0476[a]
EUR/CZK	**−0.8563**[a]		**−0.8575**[a]		**−0.6735**[b]	
EUR/CZK(1)	2.2532[a]		1.8693[a]		2.1496[a]	
USD/CZK		**0.9692**[a]		**1.1699**[a]		**0.5328**[b]
USD/CZK(1)		−1.8073[a]		−2.1560[a]		−6.4885[a]
Sargan-Hansen (*p-value*)	0.2563	0.3498	0.1345	0.1264	0.6264	0.8391
Arellano-Bond (*p-AR1*)	0.0003	0.0000	0.0191	0.0015	0.0001	0.0000
Arellano-Bond (*p-AR2*)	0.6614	0.6429	0.7344	0.3040	0.6462	0.5915
Panel Observations	3689	3689	3689	3689	3268	3268

Note: Symbol [a] or [b] means statistically significant results at 1% or 5% level.
Source: Author's calculation in EViews 9.5.

models. Therefore we can argue that a motivation of employees through increasing their salaries can really positively affect increasing of hotels' turnover. Third, even tourists expenditures for their stay in hotels in the Czech Republic, which means revenues for the hotel, have positive impact on the turnover. The negative impact in previous paragraph was caused by the fact that these expenditures are in USD, not in EUR. We can also see that within these estimations with the FX rate USD/CZK is this positive impact of tourists' expenditures higher that the positive impact of staff costs, which is logical as well. Finally, however, whereas the impact of inflation was positive in the previous paragraph, in the case of models with the FX rate USD/CZK the impact is negative. So, we cannot conclude whether or not the Czech hotels included costs of inflation into their prices.

Authors among recent literature, e.g. Atan and Arslanturk, 2012; Chou, 2013; Dwyer *et al.* 2004; Onetiu and Predonu, 2013, have mainly estimated relations between GDP and the tourism development. Here we can see what affected also the hotels' turnover. In times of higher foreign exchange rate volatility among the EU is necessary to see how exchange rates can affect the output of not only the hotels. However, if the hotels' turnover is affected, it can analogically have impact on the earnings as well as on whole GDP.

DISCUSSION

According to the results in previous section the impact of those exchange rates changes is evident. We see that it is necessary to deal with the FX exposure among hotels. Nevertheless, the end of the exchange rate commitment can affect the business of the Czech hotels. As the Czech koruna (CZK) have appreciated after the commitment was ended, the hotel revenues earned in foreign currency will have decreased if they will be changed into the CZK.

It would be suggested to the hotels to use the cheapest way of hedging through making costs in EUR, as well. For example they could change their suppliers to these from Germany, Austria or Slovakia. Except Poland all of our neighbor countries have accepted euro. Therefore, when foreign companies can sell some kind of goods to hotels, they will pay these costs in EUR then. Moreover, they could prefer only domestic currency due selected payments (e.g. restaurant, or for taxes). Unfortunately, it is impossible to make the same amount of costs in foreign currency as the amount of revenues is. Hotels cannot also prohibited some payments in foreign currency, if they would like to be competitive on the market. So, hotels would also need other way how they can confront to FX risk. Tab. III shows us another risk from using financial derivatives, concretely a currency FX forward.

In Tab. III above we see how risky would be hedge planned turnover through the currency FX forward, when the Czech hotel will not realize that turnover. A currency forward is a contract between two parties to buy and sell an amount of currency at an agreed price on an agreed future date. The price of the currency (future exchange rate) and the date of the future transaction are set when the forward is contracted. No money is exchanged at the beginning of the forward contract, currencies switch hands on the agreed execution date of the currency FX forward. Nevertheless, when a hotel would not realize planned turnover in future, it is the obligation to buy rest of the hedged amount of EUR on the FX market. When planned revenues would have decreased to 70%, the costs unfortunately decrease less to 80% (see Tab. III). It is caused by existence of fixed costs. In our case EBIT is negative due to higher costs than revenues which means loss –540,000 CZK. However, it is still necessary to sell planned 1,000,000 EUR due to the currency forward. If CZK have appreciated to EUR and foreign exchange rate decreased to 26 EUR/CZK, it means earnings 300,000 CZK due

III: *Illustration of a risk due to unrealized hedged revenues while using an FX forward*

Planned turnover in the foreign currency	1,000,000 EUR
Planned turnover hedged by FX forward 27 EUR/CZK	27,000,000 CZK
Planned costs with 10% margin	–24,300,000 CZK
Hedged 10% margin	2,700,000 CZK
Realized turnover in the foreign currency (70%)	700,000 EUR
Realized costs in the foreign currency (30%)	–300,000 EUR
Realized turnover hedged by the FX forward (70%)	18,900,000 CZK
Realized costs hedged by the FX forward (80%)	19,440,000 CZK
Earnings before interests and taxes (EBIT)	–540,000 CZK
Foreign currency purchase (appreciation to 26 EUR/CZK)	7,800,000 CZK
Sale due to the FX forward 27 EUR/CZK	8,100,000 CZK
Foreign exchange earnings	300,000 CZK
REALIZED LOSS	–240,000 CZK

Source: Author's illustration.

to missing 300,000 EUR within planned hotel's turnover. Development of FX rates means hotel's earnings in our case. The CZK depreciation, on the other hand, will deepen the hotel's loss.

Because of that taking a loan in foreign currency (EUR) is more appropriate than a currency forward. This loan should be immediately changed into the CZK and whole amount of the money should be used as a long-term deposit to secure that loan in foreign currency. Through that way a bank will not be affected by foreign exchange risk and the interest rates on the loan would be at their minimum. Every time, when hotels will earn foreign currency (EUR), the money would have been paid to a bank as installment of that loan. Because of this kind of hedging hotels managers would not be afraid of the shocks connected with the changes on the foreign exchange market due to possible future appreciation of CZK. Furthermore, they will also lead the financial costs to their minimum (compared to other ways of the hedging (i.e. through financial derivatives).

From the Fig. 2 above is obvious that the Czech koruna have really appreciated after the end of the CNB exchange rate commitment. The FX rate EUR/CZK has decreased from 27.00 close to 26.00 EUR/CZK. A similar thing we can argue about the FX rate USD/CZK that decreased from 25.00 close to 22.00 USD/CZK. Nevertheless, only those hotels who fixed FX rates before the end of the commitment, can now earn from the current situation on the market. Only time will show how the exchange rates will develop.

2: *FX rates after the end of the exchange rate commitment*
Source: Author's illustration from the CNB online database.

CONCLUSION

The aim of the paper was to show how Czech hotels were been able to confront current appreciation of the Czech koruna before the CNB had ended the exchange rate commitment. Firstly, it has been proved that development on the foreign exchange market really affected the business of the Czech hotels. Therefore it is still impossible to ignore financial development in the Czech economy, especially nowadays, when the Czech National Bank has already ended its exchange rate commitment which was adopted in November 2013. According to that fact, hotel managers should pay more attention to the problematic of the financial hedging within exposures of exchange rate risk.

The CNB (2017) argues it has never, in the past or since the exchange rate commitment, been pledged to provide information about every transaction it makes in the market. The exchange rate commitment was announced completely transparently and its parameters were described openly and publicly (including the fact that interventions in the market do not require a special decision of the Bank Board). According to that it was not clear whether or not it had still been intervene before the official end of the exchange rate commitment. However, they officially ended the period of monetary interventions during the start of April 2017.

Nonetheless, according to prevailing revenues in foreign currency that exceed the costs. Secondly, it was therefore discussed three possible ways to confront the foreign exchange risk. It was highlighted the suggestion to use the natural hedging through increasing of those costs to hotels. Then there was discussed several risks connected with using financial derivatives when the hotel would not reach its planned turnover in foreign currency. Finally, it was suggested a possible usage of the loan in foreign currency to hedge foreign exchange risk. However, all these ways how to diversify and lower exchange rate risk were absolutely useful especially before the end of the exchange rate commitment.

Within a future research it could be interesting to compare results reached by the empirical approaches behind current paper with the results among few countries such as Visegrad countries. Furthermore, financial situation of tourism agencies would be estimated, too.

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