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THE CONTRIBUTION OF BREWERIES TO THE V4 ECONOMY

Xénia Szarková, MSc[1]; **Radovan Savov**, Associate Professor[2]

Faculty of Economics and Management, Slovak University of Agriculture in Nitra

ABSTRACT

The consumption of beer can be considered a cultural element of many European countries. Therefore, it represents a great contribution to Central European economies mainly in terms of employment, value-added or taxes and duties. Since beer has a plentiful history and permanent popularity, the most powerful global multinationals gradually took over the global market over the last few decades. Therefore, globalization highly affected the structure of the brewing industry that caused the homogenization of products. The aforementioned and also other factors have led to the increase in the establishment of local craft breweries which produce the beloved beverage characterised by traditional recipe and uniqueness. Hence, in this article, we are focusing on the selected macroeconomic indicators like employment or excise duties generated by breweries in Poland, Slovakia, Hungary, and the Czech Republic. Since there is no separate economic data available on industrial and craft beer yet, we focused on the economic impacts of the brewing industry in general, during the period 2010–2019. In the first part of the results, we provide the rate of excise duty on beer as opposed to other alcoholic beverages and in the second part, we focus on direct employment in the industry. The last part focuses on the relation between these two variables by using regression analysis.

Key words*:* excise duties, direct employment, V4, the brewing industry
JEL codes: E24, F60, L66

INTRODUCTION

Beer is one of the most popular alcoholic beverages in the V4 countries which have a rich history of brewing behind them. When it comes to the global economic impact of this industry, the beer industry reports about 294.5 billion USD annual revenues globally (Feng, 2017). Among other countries, the Czech Republic and Poland reached the highest per capita beer consumption rate globally in 2018 (Kirin Holdings Company Limited, 2019). Therefore, the brewing industry has a great impact on the economies of Central European countries, for example in terms of the labour force and government revenues. During the last few decades, two main trends were formed that are still present on the market, one is the acquisition of various breweries and the expansion of craft breweries (Pokrivčák et al., 2018). In 2019, the most powerful multinational was AB InBev with 29.3% of the global market share, which was followed by Heineken with 12.6%, China Resources Snow Breweries with 6%, Carlsberg with 5.9%, Asahi with 3%, and with other giants. Consequently, 71.6% of the global market share was owned by the leading global breweries (Statista, 2021). On the other hand, many new craft breweries were established recently in

[1] Corresponding author: Trieda Andreja Hlinku 2, Nitra, Slovak Republic, xszarkovax@uniag.sk, +421 376414138
[2] Corresponding author: Trieda Andreja Hlinku 2, Nitra, Slovak Republic, radovan.savov@uniag.sk, +421 376414138

Central European countries. Between 2010 and 2019, there were more than 350 new craft breweries set up in the Czech Republic and 79 in Slovakia (Wojtyra et al., 2020). Therefore, besides the dominant industrial breweries, also craft breweries have a significant impact on the food and beverage market and the economies.

THEORETICAL BACKGROUND

The structure of the brewing industry has been significantly impacted by globalization, which caused many acquisitions in the sector globally. Since consumers in Poland, Hungary, Slovakia, and the Czech Republic affect relatively high demand for various beer products, the structure of the brewing industry has changed, as well. In Hungary, three main companies control the majority of the domestic market, Heineken Group, Asahi Group, and Molson Coors (Jantyik, Balogh and Török, 2021). After becoming independent, Slovakia and the Czech Republic experienced the privatization of breweries which were later taken over by multinationals such as Heineken and SABMiller (later assets were sold to the Japanese Asahi Group) (Kandráčová and Kulla, 2012). In the case of the Polish beer market, the same multinational companies are dominating the market (Wojtyra, Grudzień and Lichota, 2020).

During the last few decades, a new trend is present on the market of beer products that was caused by globalization and further homogenization of beer products (Howard, 2014). Traditional craft breweries started to gradually appear on the market in several countries. The characteristic of craft breweries is very specific since they use traditional recipes and production methods, high-quality ingredients and they produce smaller volumes of beer, which is differently set for every country (Carroll and Swaminathan, 2000). Based on research conducted in Hungary, microbreweries are often short-lived but there is a potential for the creation of a new market segment that is generated by younger generations who demand more expensive craft beers and are concentrated mainly in big university cities or the capital (Fertő et al., 2018). The production of beer has a significant impact on the Slovak economy, as in 2015 the total consumption of beer reached 372 million l, which means 73 l of beer per one citizen. Based on another article, in the case of 1 500 employees in this industry, each of them creates another 12 job positions in other industries, such as hospitality, trade, and supply chain (Dudić et al., 2018).

When it comes to taxation, the tax rate on beer is decided per hectolitre and per percentage volume of the actual content of alcohol, which means that the basic tax rate is set at 3.587 EUR and the reduced tax rate, which is applied for small breweries is 2.652 EUR in Slovakia (Financial Administration of the Slovak Republic, 2021). As the Czech Republic has a strong history of brewing, it has experienced an interesting development of this industry between 2000 and 2010. During this period, there was a rise in the number of existing breweries from 54 to 151, which was caused mainly by microbreweries, and from 2010 to 2019 there were more than 350 new enterprises set up (Březinová, Havelka and Bartoš, 2019). In Poland, beer is the second very-highly globalised industry sector besides other industry sectors, like tobacco, alcohol, confectionery, oil, and sugar (Chechelski, 2017). As opposed to spirits, fuel, and tobacco revenues, the budgetary revenues almost doubled for the last decade (Gołaś and Ścibek, 2010).

When it comes to the structure, the most interesting changes happened in the 1990s and 2000s, when foreign giants started the privatization and therefore various small-size breweries were liquidated. On the other hand, between 2010 and 2018 the number of new breweries rise from 70 to 372 (Wojtyra et al., 2020). In 2017, the beer production exceeded 30 million hectolitres in Poland, as Polish consumers are positioned among the top European consumers of beer in terms of the average consumption (Perkowska, Gromada and Golonko, 2019). According to Smoluk-Sikorska and Kalinowski (2011), there was a 0.99% share of production and sale of beer in total value added generated in the Polish economy in 2009.

MATERIALS AND METHODS

The main aim of this research paper is to analyse the impact of the brewing industry in terms of excise duty and direct employment in Poland, Hungary, Slovakia, and the Czech Republic. Therefore, its purpose is to emphasize the importance of industrial and craft beer producers on the beverage market. Our results include both industrial and craft beer producers. However, we believe that industrial breweries have a remarkably higher impact on the economies as opposed to craft breweries. The macroeconomic data was obtained from the dataset of the EC. To obtain relevant data, we analysed the data from the EC and also from the last reports of Brewers of Europe, which besides the data collection connects national brewers' associations from 29 European countries (Brewers of Europe, 2021). In the case of Hungary, we added data from the Brewers of Europe dataset, and we used the yearly average exchange rates for Hungary based on the Euro foreign exchange reference rates by the ECB. For the second part of our research, we obtained data about the total labour force in the selected countries from The World Bank's online database and data about direct employment by breweries from the statistics of Brewers of Europe (World Bank, 2020; Brewers of Europe, 2021). In the last part of our research, we quantified the relationship between excise duty rate on beer and direct employment share by using the method of regression analysis (Directorate-General for Taxation and Customs Union, 2021). Therefore, this method analyses the interrelation between the obtained set of data (Chatterjee and Hadi, 2006).

RESEARCH RESULTS AND DISCUSSION

The results of our research paper provide a brief overview of the economic impacts of the brewing industry and the importance of the need to empower the sector of industrial beer production and especially craft beer production that maintains a great potential to grow and to support the production of local products in the food and beverage sector in the V4 countries. As was already mentioned, our paper consists of three main parts: (i) the rate of excise duty on beer in the V4 countries, (ii) the rate of direct employment by breweries in the V4 countries, and (iii) the relationship between excise duty rate on beer and direct employment share.

The rate of excise duty on beer in the V4 countries. In the first part of our analysis, we focused on the economic impacts of breweries from V4 countries in terms of excise duty.

Based on Figure 1, it is clear that there were no significant fluctuations in the share of beer as opposed to other alcohol products in the observed countries between the selected period. In the case of the Czech Republic, the percentages were moving between 32.81% (2019) and 42.12% (2012). The most noticeable increase in the percentage share of beer in excise duty happened between 2011 and 2012 by 3.36%. In Hungary, the percentage share was slightly fluctuating. Therefore, the biggest increase happened

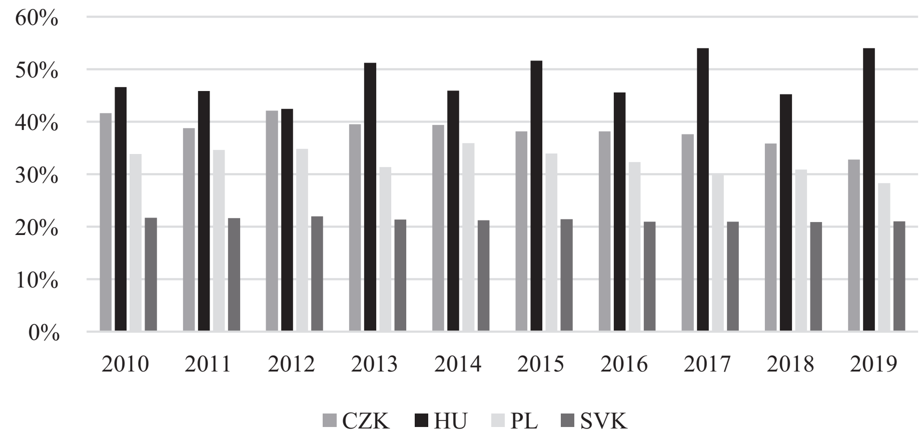

Figure 1. The share of beer on excise duty on alcohol products

Source: own study.

between 2018 and 2019 (45.24% to 54.01%) and the most visible decrease between 2017 and 2018 (53.99% to 45.24%). A similar trend could be observed in Poland, where the share of excise duty and consumption tax generated by beer was moved between 28.33% and 35.92% during the observed period. The highest value was reached in 2014 and the lowest in 2019. Similarly, to the Czech Republic, Slovakia reached the highest value, 21.97%, in 2012. Furthermore, the lowest percentage share was 20.89% in 2018.

The rate of direct employment by breweries in the V4 countries. In the second part of our research, we were analysing the impact of breweries on the labour force of the V4 countries between the years 2010–2019.

As it can be seen in Table 1, employment by the sector of breweries has a very slight influence on employment in the V4 countries. This result could be explicated in several discussions since the percentage values from Table 1 represent only the share of breweries in the labour force in the production sector. The beer itself generates many jobs in other sectors, such as hospitality, retail, supply, and others. Unfortunately, the collection of such complex data is very difficult because of many reasons. On the other hand, our results that are provided in Table 1 demonstrate that the rates of direct employment are not fluctuating, so this industry has retained its strong position on the market of V4 for the last decade. Based on our research the rate of direct employment by breweries changes between 0.10% and 0.13% in the Czech Republic, 0.04% and 0.05% in Hungary, 0.05% and 0.09% in Poland and 0.05% and 0.07% in Slovakia. However, the indexes that represent the percentual change between 2010 and 2019 resulted in a decrease for all observed countries.

The relationship between excise duty rate on beer and direct employment share. In the last part of our analysis, we quantified the relationship between the excise duty rate on beer and direct employment share in the V4 countries during the selected period.

- H0: There is no dependence between the excise duty rate and direct employment share.

Table 1. The rate of direct employment by breweries to the total value of labour force in the V4 countries

×	×	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2010–2019
CZ	LF	5 241	5 233	5 269	5 323	5 324	5 337	5 388	5 419	5 452	5 441	–
	DE	7	6.8	7	5.8	5.9	6.1	5.8	5.6	5.6	5.6	–
	%	0.13	0.13	0.13	0.11	0.11	0.11	0.11	0.10	0.10	0.10	–22.94
HU	LF	4 299	4 316	4 369	4 403	4 527	4 617	4 685	4 714	4 732	4 750	–
	DE	2	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.9	–
	%	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	–15.60
PL	LF	18 036	18 103	18 227	18 269	18 388	18 315	18 378	18 444	18 390	18 318	–
	DE	15	–	16	16	16	10	10	9.3	9.5	9.5	–
	%	0.08	–	0.09	0.09	0.09	0.05	0.05	0.05	0.05	0.05	–37.64
SVK	LF	2 683	2 686	2 710	2 718	2 724	2 739	2 763	2 762	2 754	2 749	–
	DE	1.8	1.7	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.52	–
	%	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.06	–17.14

Source: own study.

Table 2. Regression analysis

×	CZ	HU	PL	SVK
Multiple *R*	0.68	0.17	0.00	0.92
R^2	0.46	0.03	0.00	0.85
p	0.02	0.61	0.99	0.00

Source: own study.

– H1: There is a dependence between the excise duty rate and direct employment share.

Based on the regression analysis (Table 2) for the Czech Republic and Slovakia we reject H0 and accept H1, while in the case of Hungary and Poland we accept H0 and reject H1.

CONCLUSIONS

We would like to emphasize the importance of the brewing industry since it contributes to the V4 economies in many ways, and they include a promising potential to invite foreign direct investments and also support the production of traditional local beer products, at the same time. In our article, we pointed out two economic indicators, excise duty, and labour force. The percentage share of beer on excise duty and consumption taxes on alcohol products was moving between 20% and 55% from 2010 to 2019 in the V4 countries. These results prove the importance of the presence of this industry in the Central European market. Therefore, it has a significant part in job creation that does not have an impact only on direct employment but also on employment in general, since it also influences other sectors, like hospitality, supply, retail, or others. Consequently, the rate of direct employment by breweries to the total value of labour force in the V4 countries was moving between 0.04 and 0.13% during the selected period. To support the growth of this industry, it should be essential for the government to provide financial support to the local microbreweries. They represent local enterprises with a focus on beverage production that can have many positive impacts on the economies of the V4. Besides job creation and strengthening of local production, this segment has far greater potential and impact on the economies. This proves that further government support is needed in the sector of local small breweries since it could be an effective way to support agrotourism and rural development in all the observed countries. In addition, the support of the sector of craft breweries could increase the level of employment in rural areas, which is currently considered a significant problem in Slovakia. The issue of the brewing industry, in terms of economy and consumption, is much broader than indicated in this paper, which provides us the possibility to propose further research in subsequent articles. Therefore, we remain positive about the development of the brewing industry, especially of craft breweries, and continue with further research of the impacts and promising opportunities of this industry.

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