

Development of beer industry and craft beer expansion

JÁN POKRIVČÁK – SOŇA CHOVANOVÁ SUPEKOVÁ – DRAHOSLAV LANČARIČ –
RADOVAN SAVOV – MARIÁN TÓTH – RADOSLAV VAŠINA

Summary

The objective of this paper is to evaluate how globalization of Slovak economy and its economic growth affected not only the structure of the traditional beer market in Slovakia but also the rise and expansion of craft breweries. The theory is focused on examining an interplay between the standardized and globalized traditional beer industry, development and dissemination of craft brewing technologies and changing of life styles. Results and main outcomes are based on a survey where 20 owners of craft breweries in Slovakia were interviewed using a focus group approach. We identified main factors affecting expansion of craft breweries as well as barriers to craft breweries expansion. The expansion is positively affected by increasing demand for diversified beer, different beer styles and the increase of income. The main barriers are the increasing consumption of substitutes, lack of qualified brewers and taxation policy. Main motivation factors to start a craft brewery are lack of diversified beer and good business opportunity.

Keywords

craft beer; globalization; product diversity; demand; quality; Slovakia

Global trends in brewing Industry

The beer industry in Europe and in the world has been going through significant changes recently. On the one hand, the process of consolidation is going on, which has been reflected in a series of mergers and acquisitions of large commercial breweries. This process is driven by economy of scale and is reflected in growing market share of top breweries. On the other hand, there is a trend of formation and expansion of craft breweries that started in the 1970s in the USA. Western Europe joined the trend in 1980s while in Eastern Europe, Slovakia including, the craft beer revolution started after year 2000.

The growth of total beer consumption in the 21st century is caused by increased consumption in developing regions. Consumption in developed regions is either stagnating or even declining. By

country, China (489.9 million hectolitres) is the largest beer-consuming country in the world, followed by USA (241.7 million hectolitres), Brazil (131.5 million hectolitres), Russia (100.1 million hectolitres) and Germany (84.4 million hectolitres). Overall consumption in European Union (EU) countries was 359 million hectolitres in 2016. Beer consumption in Slovakia was 3.97 million hectolitres in the same year, which accounts for 1.1 % of total EU consumption [1]. The highest beer consumption per capita in Europe is in the Czech Republic (144 l), followed by Germany (107 l), Austria (104 l), Poland (98 l) and Lithuania (95 l), while per capita beer consumption in Slovakia reached 73 l. [2].

Craft beer represents 3–5 % of total beer consumption in Western Europe and USA, while in Eastern Europe it is only about 1 %. Beer con-

Ján Pokrivčák, Department of Economic Policy, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Trieda Andreja Hlinku 2, 94976 Nitra, Slovakia; Department of Economics and Quantitative Methods, Faculty of Economics, University of West Bohemia, Univerzitní 8, 30614 Pilsen, Czech Republic.

Drahošlav Lančarič, **Radovan Savov**, Department of Management, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Trieda Andreja Hlinku 2, 94976 Nitra, Slovakia.

Marián Tóth, Department of Finance, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Trieda Andreja Hlinku 2, 94976 Nitra, Slovakia.

Soňa Chovanová Supeková, **Radoslav Vašina**, Department of Management and Marketing, Faculty of Economics and Entrepreneurship, Pan-European University, Tematínska 10, 85105 Bratislava, Slovakia.

Correspondence author:

Drahošlav Lančarič, e-mail: drahošlav.lancaric@uniag.sk

Tab. 1. Overview of Anheuser-Busch InBev acquisitions and mergers [3, 5–7].

Year	Acquired or merged companies	Bought by
1988	Brewery Artois (Leuven, Belgium) + Piedboeuf Brewery (Jupille-sur-Meuse, Belgium)	Interbrew (Leuven, Belgium)
1995	Labatt Brewing Compnay (Ontario, Canada)	Interbrew (Leuven, Belgium)
1999	Brahma (Sao Paolo, Brazil) + Antarctica (Sao Paolo, Brazil)	AmBev (Sao Paolo, Brazil)
2002	SAB (Johannesburg, South Africa) + Miller Brewing (Milwaukee, Wisconsin, USA)	SABMiller (Johannesburg, South Africa)
2004	Interbrew (Leuven, Belgium) + AmBev (Sao Paolo, Brazil)	InBev (Leuven, Belgium)
	Harbin Brewery (Harbin, China)	Anheuser-Busch (St. Louis, Missouri, USA)
2005	Bavaria Brewery (Lieshout, the Netherlands)	SABMiller (Johannesburg, South Africa)
2006	Cerveza Quilmes (Quilmes, Argentina)	InBev (Leuven, Belgium)
2007	Lakeport Brewing Company (Hamilton, Ontario Canada)	InBev (Leuven, Belgium)
2008	InBev (Leuven, Belgium) + Anheuser-Busch (St. Louis, Missouri, USA)	Anheuser-Busch InBev
2011	Foster's Group (Melbourne, Australia)	SABMiller (Johannesburg, South Africa)
2012	Cerveceria Nacional Dominicana (Santo Domingo, Dominican Republic)	Anheuser-Busch InBev
	Grupo Modelo (Mexico City, Mexico)	Anheuser-Busch InBev
2015	Meantime Brewing (London, United Kingdom)	SABMiller (Johannesburg, South Africa)
2016	Anheuser-Busch InBev (Leuven, Belgium) + SABMiller (Johannesburg, South Africa) – including Pilsner Urquell Brewery (Pilsen, Czech Republic), Radegast Nošovice Brewery (Nošovice, Czech Republic), Šariš Brewery (Veľký Šariš, Slovakia)	Anheuser-Busch InBev (AB InBev)

sumption is changing over time because of various factors. The most important are governmental regulation and production as well as trade conditions for beer and its substitutes [3]. Consumption pattern has changed among countries over the past 25 years. In traditional beer-drinking countries in Europe and the United States, per capita consumption of beer decreased. For example, in Germany, Belgium, USA and United Kingdom the beer consumption has declined by 14 % to 30 % since 1980. Similarly, in Slovakia the consumption of beer declined by 19 % from 2003 to 2016 [1].

Global brewing industry consolidation (1960–2017)

In the second half of the 20th century, there were two key trends in brewery industry: expansion of biggest breweries into new regions and industry consolidation – acquisition, mergers and entering the capital market. Due to these trends, brewery industry became global. Until that time, beer was only a local product. Changes in the market structure during last decades have led to a large consolidation, which resulted in a smaller number of active breweries around the world [3]. The trend of globalization is significant. In 1998, the cumulative market share of four biggest beer companies was 22 %. The situation was completely different in 2010 when four biggest breweries represented almost 50 % of the global beer market [4].

Due to globalization, the current world beer

production is under control of “Big Three”: Anheuser–Busch InBev (AB InBev, Leuven, Belgium) including SAB Miller (London, United Kingdom), Heineken (Amsterdam, the Netherlands) and Carlsberg (Copenhagen, Denmark). These companies account for around 65–70 % of global beer production. Transaction between AB InBev and SAB Miller in 2016 created a new brewing giant and changed the world of beer. Due to the EU regulations, AB InBev had to get rid of companies in Eastern and Central Europe, which were sold to Asahi Group (Tokyo, Japan). The acquisitions of central and Eastern European breweries occurred earlier in 1990s or 2000s.

The process of mergers and acquisitions had started earlier, however. In 1988, two Belgian breweries Artois (Leuven, Belgium) and Piedboeuf (Jupiler, Belgium) merged and created Interbrew (Leuven, Belgium) (Tab. 1). Next important company was AmBev (Sao Paolo, Brazil). It was founded in 1999 as a result of merger of two Brazilian breweries – Brahma (Sao Paolo, Brazil) and Antarctica (Sao Paolo, Brazil) [5]. In 2004, Interbrew and AmBev merged, creating a new entity called InBev (Leuven, Belgium). Another big transaction took place in 2008 when InBev merged with a US brewery Anheuser-Busch (St. Louis, Missouri, USA; established in 1852), which previously (in 2004) acquired Harbin Brewery (Harbin, China). SABMiller was created

as a result of the merger between SAB (Johannesburg, South Africa) and Miller Brewing (Milwaukee, Wisconsin, USA) in 2002 [6] (Tab. 1).

Heineken started acquisition activities in 1968 when it bought Amstel Brewery (Amsterdam, the Netherlands). This step aimed to improve the home market share and eliminate a threat from foreign competitors. From 1992 to 1995, Heineken focused on Eastern European countries to become the market leader in Hungary, Poland, Slovakia and Bulgaria [7] (Tab. 2).

Carlsberg started to brew beer in Denmark in 1847 and, due to many mergers and acquisitions, the company became an important player on the global beer market with brewing activities in 140 countries around the world. Carlsberg started internationalization in 1966 by brewing beer in Cyprus through Leon Brewery (Nicosia, Cyprus). First important acquisitions were in Denmark and Finland where Carlsberg bought Tuborg Breweries (Fredericia, Denmark) in 1970 and Sinebrychoff (Helsinki, Finland) in 1972 [7] (Tab. 3).

Craft beer revolution (1980–2017)

“Craft beer revolution” has been a phenomenon in recent decades. USA is considered to be a cradle of modern microbrewing. A breakthrough year was 1976 when the first microbrewery was created in California (The New Albion Brewery; Sonoma, California, USA). During the late 70s of the 20th century, consumer dissatisfaction with uniformity of beer was rising and, at the same time, pressure to legalize activities of so-called home brewers was increasing. In 1979, US Congress adopted a law, which left a decision on the possibility of home brewing in national competences [8].

Craft brewer is usually defined as a small, independent and traditional brewery. In this definition “small” is defined as “annual production of 9539238 hl of beer or less”, “independent” is defined as “less than 25% of the craft brewery is owned or controlled by an alcohol industry member” and “traditional” is defined as “a brewery that has a majority of its total beverage alcohol volume in beers whose flavour derives from traditional or innovative brewing ingredients and their fermentation” [9, 10].

There are three main categories of brewers producing craft beer – brewpub, microbrewery and regional craft brewery [9, 10]. Generally, craft brewers differentiate themselves as small, independent brands and focus on the use of traditional or innovative brewing techniques and ingredients [2].

The popularity of craft beer has significantly

increased lately. Based on this fact, large breweries started to adapt by including special types of beer into their portfolio. Even though these beers were tasty and their taste was hard to recognize compared to beers from microbreweries, consumers did not show much interest. The reason was that consumers still considered these types of beer as an industrially produced beer. Therefore, some large breweries began to establish subsidiaries [11].

Tab. 2. Overview of Heineken acquisitions and mergers [3, 5, 7].

Year	Acquired or merged companies
1968	Amstel Brewery (Amsterdam, Netherlands)
1970	James J. Murphy Brewery (Cork, Ireland)
1972	l'Espérance, French ALBRA group (Strasbourg, France)
1979	Dreher Group (Trieste, Italy)
1982	Brouwerij de Ridder B.V. (Maastricht, Netherlands)
1991	Van Munching & Company (Darien, Connecticut, USA)
1992	Komáromi Sörgyár RT. (Komárom, Hungary)
1994	Żywiec Brewery (Żywiec, Poland) Zagorka Brewery (Stara Zagora, Bulgaria)
1995	Zlatý Bažant (Hurbanovo, Slovakia)
1996	Fischer Group (Strasbourg, France) Birra Moretti (Udine, Italy)
2000	Grupo Cruzcampo S.A. (Sevilla, Spain)
2003	Brau-Beteiligungs A.G. (Linz, Austria) Karlovac Brewery (Karlovac, Croatia)
2006	Quang Nam Brewery (Quang Nam, Vietnam) Société de Production et de Distribution des Boissons (Tunis, Tunisia)
2007	Krušovice Brewery (Krušovice, Czech Republic) Rodic Brewery (Novi Sad, Serbia) Syabar Brewing Company (Bobruisk, Belarus)
2008	Scottish and Newcastle (Edinburgh, United Kingdom)* Tango Brewery (Rouiba, Algeria) Bere Mures (Ungheni, Romania) Drinks Union (Ústí nad Labem, Czech Republic) Rechitsa Brewery (Rechitsa, Belarus) Eichhof Brewery (Lucerne, Switzerland)
2009	United Breweries Limited and Asia Pacific Breweries (Mumbai, India)
2010	FEMSA (Monterrey, Mexico)
2011	Bedele and Harar (Harar, Ethiopia)
2015	Lasko Brewery (Lasko, Croatia) Lagunitas Brewing Company (Petaluma, California, USA)
2017	Brasil Kirin Company (Sao Paulo, Brazil)

Company bought by Heineken together with Carlsberg (Copenhagen, Denmark).

Tab. 3. Overview of Carlsberg acquisitions and mergers [3, 5, 6].

Year	Acquired or merged companies
1966	Leon Brewery (Photiades Breweries, Nicosia, Cyprus)
1970	Tuborg Breweries (Hellerup, Denmark)
1972	Sinebrychoff (Helsinki, Finland)
1988	Hannan Brewery (Krefeld, Germany)
1996	Falcon Brewery (Falkenberg, Sweden)
1998	Tetley Brewery (Leeds, United Kingdom)
1999	Svyturys-Utenos Alus (Vilnius, Lithuania)
2000	Feldschlösschen (Rheinfelden, Switzerland)
2001	Carlsberg (Copenhagen, Denmark) + Orkla (Orkla, Norway) + Pripps (Gothenburg, Sweden) + Falcon (Falkenberg, Sweden)
2002	Shumensko Brewery (Shumen, Bulgaria) Irbis brewery (Almaty, Kazakhstan) Industrie Poretti (Milan, Italy)
2003	Ak-Nar Brewery (Almaty Kazakhstan) Celarevo Brewery (Bačka Palanka, Serbia)
2004	Pirinsko Brewery (Pirin, Bulgaria) Panonska Brewery (Koprivnica, Croatia) Holsten Brewery (Hamburg Germany) Ringnes (Oslo, Norway) Okocim (Brzesko, Poland) + Bosman (Szczecin, Poland) + Kasztelan (Warszawa, Poland) + Piast Brewery (Wrocław, Poland)
2005	Olivaria Brewery (Minsk, Belarus)
2006	South Asia Breweries (Paonta Sahib, India)
2008	Baltika Breweries (St. Petersburg, Russia) Aldaris Brewery (Riga, Latvia) Saku Brewery (Saku, Estonia) Kronenbourg (Strasbourg, France) Scottish and Newcastle (Edinburgh, United Kingdom)*
2013	Chongqing Beer Group (Chongqing, China)
2014	Olympic Brewery (Thessaloniki, Greece)

Company bought by Carlsberg together with Heineken (Amsterdam, the Netherlands).

Craft beer customers are usually men with a high income level [12]. The significant growth in this segment was recorded especially in North America (12%) and Western Europe (14%). There were more than 10000 craft breweries in 2015 in the world with 86% of them located in North America and Europe. Craft beer became the key driver of a new product development in Western Europe showing a double-digit expansion in the number of craft breweries since 2011.

Analysis of current scientific literature regarding the beer industry gives a possible explanation for the recent growth of the craft beer segment.

One possibility is that craft brands offer a variety on the market, which was trending towards commoditization. Major advantages in costs of production held by large producers have reduced the number of firms in the industry, as well as the number of offerings available to consumers. Brewing industry is a very interesting example of an industry in which a decades-long trend towards consolidation of production held in hands of a small number of producers of uniform and undifferentiated products was in place, and then reversed [13]. Until the late mid- to late-nineteenth century, most brewers were locally based and privately owned. National, let alone global brands, barely existed. The evolution of the industry into the global behemoth it is today attracted considerable attention, first amongst business and economic historians and, subsequently, by scholars interested in industrial economics and strategic management [14]. Beer brewed by these large companies is very homogenous. The homogenization of macro-beer is one of the reasons for the success of craft (and imported) beer [5].

People's interests in food and drink are changing. Craft beer consumers do not drink the product for its functional attributes. They spend more money than traditional beer drinkers. The main motivation for drinking craft beer seems to be the quest for authenticity. Motivations to drink craft beer are generated by three important factors: desire for more knowledge, new taste experience, and move away from the mainstream beer consumption [12]. Another reason for increasing craft beer consumption is a variety of special flavours, which increase the probability of perceiving craft beer with higher quality than industrial beer [15]. Craft beer is perceived as a high-quality product, especially for men [12]. According to TREMBLAY, IWASAKI and TREMBLAY [16], factors such as changes in local demand conditions and a more favourable regulatory environment have created profitable niches in many local markets for craft beer. Another reason is a continuous growth of personal income. A 2009 survey of beer drinkers found that high-income consumers are more likely to buy craft beer [17]. For these consumers, a growing personal income increases demand for craft beer. In addition, growth in personal income increases consumer demand for variety [18]. GRUENEWALD et al. [19] also showed that greater income is associated with more purchases of alcohol at on-premise places (e.g. brewpubs) and at higher prices. The increase in consumption of craft beer is primarily driven by younger consumers [20]. As more youngsters are reaching legal drinking age, it can be expected that the craft

beer segment will grow. Craft beer producers are challenging large beer producers and changing the beer industry and market structure with higher diversity of beer. Question of the quality of craft beer is usually connected with inputs and the technology used in the brewing process. Craft breweries often use the latest technologies comparable to those used by big brewing companies.

Economic drivers of craft beer revolution

Brewing industry is characterized by monopolistic competition as a market structure with large number of competitors, specific product differentiation, and with free entry and exit. Product differentiation reduces the intensity of competition between firms and therefore firms can acquire some market share. Specific and differentiated consumer preferences in the brewing sector lead to differentiation.

Monopolistically competitive firms try to maximize profit or minimize losses by producing quantity of production where marginal revenues equal marginal costs. Economic profit in the industry is an attractive motive for other firms outside the industry to get involved in the same industry and motivating them to enter. This fact reduces the profit of the incumbent firms inside the industry, which results in economic pressure causing inefficient firms to leave [21]. The remaining firms earn normal profit. Therefore, the marginal revenues are equal to marginal costs in the point where market price equates to average total costs and long-run zero-profit equilibrium is established. If firms in the brewing industry want to maximize profit, they should cut average total costs and operate with excess capacity to the point where average total costs are equal to marginal costs [21].

On the demand side, a growing number of craft breweries parallels with the rising consumer demand for diversity. Consumers are becoming more interested in brands that are offering an alternative to macroproducers with international presence and widespread distribution. Many attribute this change to the increased buying power of millennials, individuals born between 1981 and 1997, who are more conscious of what they are consuming and the brands they are supporting compared to previous generations [22].

Development of breweries following craft beer revolution can be characterized by three main patterns [23]:

- U shape – characterized by a steep decrease of number of breweries followed by its steep increase (can be observed in Belgium and Germany),
- J shape – characterized by increase of the stable number of breweries (United Kingdom),
- L shape – characterized by stabilization of the number of breweries after its decreasing (Japan).

MATERIALS AND METHODS

The research team conducted structured interviews, using focus groups approach, to gather information about opinions of craft brewery owners on the development of the brewing industry in Slovakia, as well as about their perspectives and new ideas for further diversification. The research was focused on collecting information that would be used for description and analysis of the current state of affairs in the brewing industry with focus on the craft beer segment.

The interviewed respondents were 20 owners of craft breweries in Slovakia, out of the total number of 66 that existed at that time. The survey particularly covered the following topics:

- factors affecting demand for craft beer,
- the impact of traditional beer market characterized by homogenous products on demand for differentiated craft beer in Slovakia,
- types of beer produced by craft breweries,
- motivation behind starting a craft brewery,
- factors influencing the supply of craft beer,
- availability of inputs, know-how for craft beer production,
- regulation of craft beer production,
- governmental support for craft beer production,

Tab. 4. Characteristics of the craft breweries owners which were interviewed.

Production per year	
Less than 100 hl	15.8 %
101–500 hl	26.3 %
501–1 000 hl	21.5 %
Over 1 000 hl	36.8 %
Type of beer produced	
Only lagers	10.5 %
Only ales	15.8 %
Both	73.7 %
Share of lager production	
Less than 25 %	42.1 %
25–50 %	15.8 %
51–75 %	26.3 %
Over 75 %	15.8 %

- vertical and horizontal co-operation in micro-brewing.

Characteristics of the craft breweries, owners of which were interviewed, are presented in Tab. 4.

The advantage of our approach was the possibility to understand ideas shaping the development of craft beer industry, getting to know the expectations of major actors, their opinions, interests and previous experience [24]. This approach is suitable for examining the behaviour of the focus group as a whole, for ascertaining the differences in perceptions between different categories in the focus group and for searching the ways how to overcome various discrepancies. The method used consisted in the following three stages [25]:

- planning the study by means of the Focus Group research method,
- implementing the interview itself,
- analysing the results and creating the research report.

It is a useful method for understanding the behaviour, needs and interests. During the discussion and from the reactions of the group members, we could find out preferences, experience and opinions. The interpretation can also facilitate understanding the reasons behind actions and decisions.

The key questions in our focus group research were:

- Question 1: Does the situation in the beer market influence the type of beer you produce?
- Question 2: Which factors determine the demand for craft beer?
- Question 3: Do customers react sensitive to the change in the price of your beer?
- Question 4: Are the ingredients for brewing craft beer available? Which ingredients are imported and from where?

- Question 5: Are there enough professionals in Slovakia to produce craft beer? Do you personally (or relevant person in your brewery) have previous experience in beer production?
- Question 6: Why did you decide to set up a microbrewery?
- Question 7: What is your opinion on the relation of the government and microbreweries?
- Question 8: Do you co-operate with other microbreweries?
- Question 9: Do you think that there is still market space for more microbreweries?

RESULTS AND DISCUSSION

Brewing industry in Slovakia: structural changes, consumption and trade

At the beginning of twentieth century, there were over 40 breweries in Slovakia. Stein brewery (Bratislava, Slovakia) and Bavernebel (Košice, Slovakia) were the largest, however, their combined production was less than 20 % of the production of Pilsner Urquell (Plzeň, Czech Republic) at that time. After the World War II, 12 existing breweries were nationalized and re-organized into 3 state-owned companies. In 1953, the number of breweries reached 8. Later, because of steadily increasing beer consumption, new breweries were launched. Some of them were established after reconstruction and rebuilding of the formerly active breweries in Bratislava, Nitra, Poprad, Bytča, Michalovce, Martin and Košice. Some breweries were built in cities where there was no brewery in the past (Topolčany in 1964, Rimavská Sobota in 1966, Veľký Šariš in 1967, Hurbanovo in 1969, Banská Bystrica in 1971 and Trnava in 1974). Data on the development of numbers of breweries in Czechoslovakia or Slovakia are presented in Fig. 1.

Beer production in Slovakia was centrally

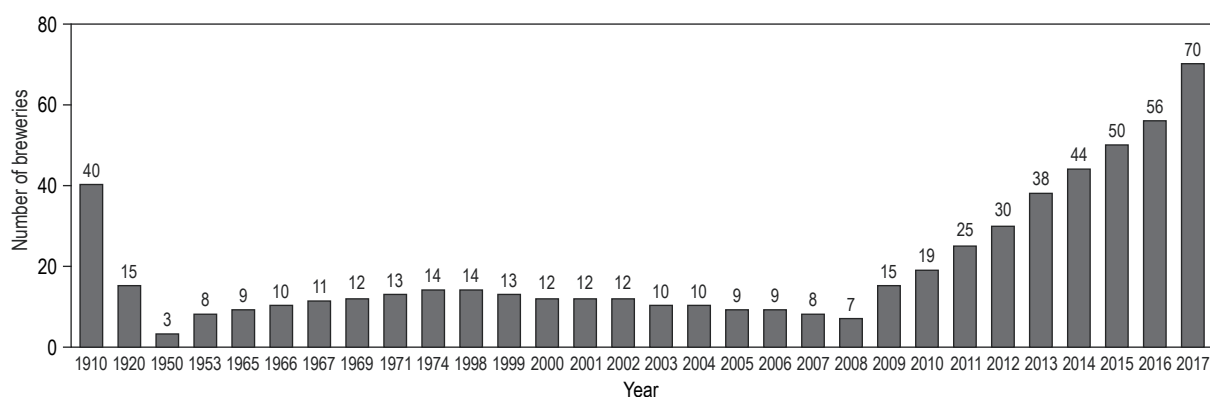


Fig. 1. Total number of breweries in Czechoslovakia or Slovakia [24].

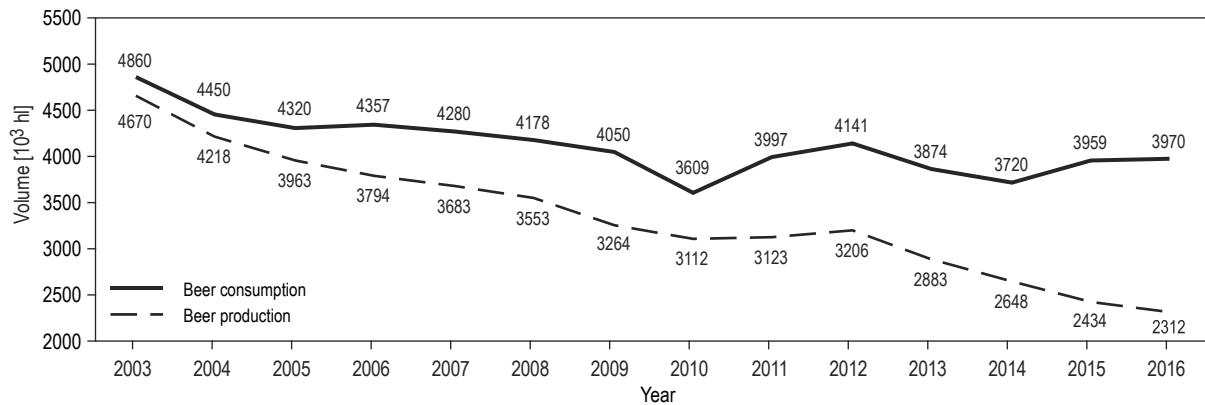


Fig. 2. Development of beer production and consumption in Slovakia in 2003–2016 [1].

planned during the „socialist” period (1948–1989). Local breweries were supplying beer to their surrounding areas, beer was therefore a regional product. Some brands (e.g. Pilsner Urquell) were distributed in the whole territory of Czechoslovakia and internationally. However, there was no or weak competition between the beer brands or breweries and, therefore, consumers did consume mainly beer produced in their region. The number of breweries and their location was decided by central planners and so was the quantity of beer as well as export and import of beer. During this period, almost no beer was imported to Czechoslovakia. Concerning the beer types, the only produced and consumed beer in that period were lagers. However, lagers produced during that period were more differentiated in taste and quality than nowadays.

Transition from socialism to democracy and market economy had a strong impact on the beer market in Slovakia. Breweries were privatized and later on taken over by multinational corporations Heineken and SABMiller (later merged with AB InBev), which nowadays dominate the beer industry [26]. Heineken bought the biggest Slovak brewery Zlatý Bažant (Hurbanovo, Slovakia) in 1995, followed by Corgoň (Nitra, Slovakia) in 1997, Martiner (Martin, Slovakia) in 2003 and Gemer (Rimavská Sobota, Slovakia) in 2006. SABMiller bought brewery Topvar (Topoľčany, Slovakia) in 2005 and Šariš (Veľký Šariš, Slovakia) in 2007. Due to the biggest merger in the history (when AB InBev took over SABMiller in 2016), AB InBev had to sell some Central and Eastern European assets to Japan's Asahi Group. In Slovakia, this led to the change of name of Topvar Breweries, which included Topvar and Šariš, to Pilsner Urquell Slovakia.

Privatization and foreign direct investment into

Slovak breweries led to an increase in efficiency of the sector because of the inflow of international know-how and technology, improving vertical coordination in the supply chain as well as utilization of the economy of scale [27]. Internationalization of the Slovakian beer market affected the quality of beer, too. Traditional local beer was replaced by homogeneous beer produced by large corporations. The technology of beer production was adjusted in order to achieve shorter production cycles (the processes of fermentation and after fermentation were joined). This led to standardization of quality that, on one hand, caused elimination of the beer of inferior quality but, on the other hand, the product differentiation was also reduced.

Privatization by multinationals Heineken and SAB Miller consolidated the brewing industry in Slovakia. Production of local beer brands produced during the „socialist” era in different towns like Bratislava, Nitra, Trnava, Poprad, Topoľčany and Martin was transferred to only two locations in Hurbanovo and Veľký Šariš.

Beer production in Slovakia has been decreasing recently (Fig. 2) [1]. In 2003, 4670 thousand hectolitres of beer were produced, while the production in 2016 reached 2312 thousand hectolitres (reduction by 49%). Consumption of beer declined over the same period by 18% [1].

The increasing price of beer is one of the main reasons for the decrease in overall beer consumption. The price is heavily influenced by increasing excise duties. Craft breweries consider taxation of their products unfair and, according to them, this is due to the influence of large breweries on policy makers. There are only two excise duty rates: lower rate for the production level below 200 000 hl (basic rate 2.65 EUR per hectolitre and per volume percent of the actual alcohol content)

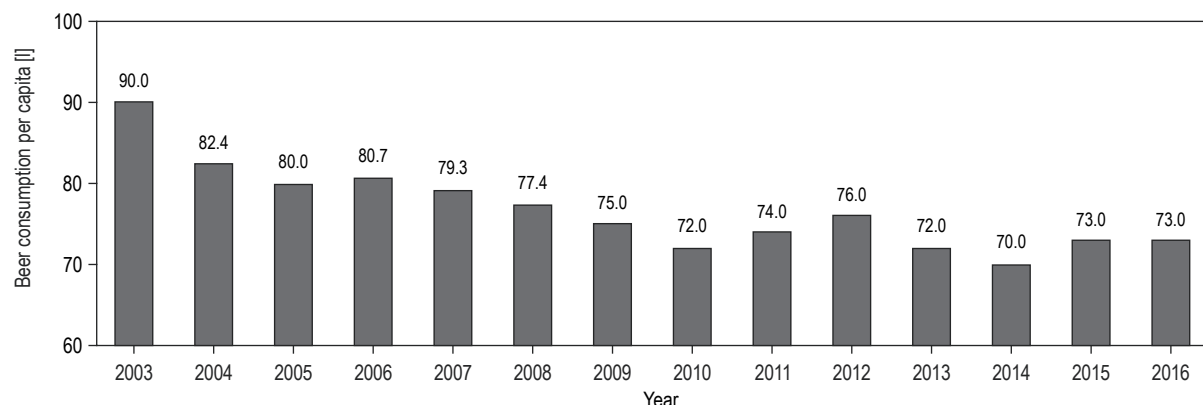


Fig. 3. Development of beer consumption per capita in Slovakia in 2003–2016 [1].

per year, and higher rate (3.59 EUR per hectolitre and per volume percent of actual alcohol content) for production above that threshold [28]. However, many craft breweries produce less than 1000 hl per year only. Furthermore, excise duty for wine is zero, which discriminates beer industry vis-à-vis wine industry. Opposition of large breweries blocks an agreement between Association of Craft Breweries (Banská Bystrica, Slovakia) and the government that would lead to lower excise tax rates for craft beers.

Slovaks are changing their drinking habits. In 2003 they consumed a half of total beer consumption in pubs and restaurants and half at home. Nowadays they prefer beer consumption at home (66 %) compared to beer consumption in pubs and restaurants (34 %) [1]. Main reason is the different price of draught and bottled beer due to rising labour costs.

Other reasons for decreasing beer consumption include healthier life styles of many Slovaks, who tend to prefer non-alcoholic drinks to alcoholic beverages, and changing preferences of alcohol consumers, who started to substitute wine for beer. However, Slovakia still belongs to beer-drinking nations. Between 2000–2006, Slovakia was in the top 15 countries with the highest beer consumption per capita in the world [1]. Consumption of beer per capita reached 90 l in 2003. Recently, the consumption decreased to 73 l per capita in 2016 (Fig. 3) [1]. Wine consumption was prompted by liberalization of the market that occurred with the economic reforms in the 1990s and especially with the EU accession in 2004, which allowed imports of various wines from EU and other parts of the world. This led to changes in the structure of alcohol consumption in Slovakia in last years. Beer consumption has fallen while consumption of wine and spirits increased in recent years [1].

Slovakia is a beer importing country. The beer consumption is higher than beer production. Beer imports have been increasing from 350 thousand hectolitres in 2003 to 1509 thousand hectolitres in 2016 [1]. The majority of the imported beer is from Czech Republic, followed by the Netherlands, Ireland, Germany and Belgium. However, imports from Czech Republic cover 90 % of overall beer imports to Slovakia [1]. Beer export rates decreased from 132 thousand hectolitres in 2003 to 127 thousand hectolitres in 2016 [1]. However, there was a period (2006–2009) when there was virtually no export at all [1].

Almost all beer consumed in Slovakia, and all beer produced, is of lager type. There is no tradition in the consumption and production of other types of beer like ales or stouts. With rising incomes and the globalization of the Slovakian economy, differentiated beer started to be imported but the share of non-lager beers on total consumption remains negligible.

Reasons behind the craft beer revolution in Slovakia

Driven by economy of scale, beer in Slovakia became more uniform and homogenous despite maintaining of different historical beer brands. The consumption of beer, similar to consumption of food and drinks, generally is connected with emotions and patriotism [27, 29]. People like to taste local food and drinks. When local beer disappeared with the consolidation of the beer market, the market niche was identified by entrepreneurs who launched the craft beer revolution. As a substitute of former local beer, new craft breweries, craft beer and brewpubs grew up. Nowadays (2017), out of the total number of 70 breweries, there are 66 craft breweries and/or brewpubs in Slovakia. The majority of the craft breweries is lo-

cated in Bratislava district (16), followed by Žilina district (11), Banská Bystrica district (9), Prešov district (8), Trnava district (8), Košice district (7), Trenčín district (6) and Nitra district (5). There are several flying breweries which brew beer in the premises of other breweries, too. In Slovakia, there is still room for new craft breweries, according to the surveyed owners and managers of craft breweries. It is expected that the number of craft breweries will further expand. About 6 new craft breweries are opened each year. Since 2009, there have been 56 new craft breweries established.

According to current craft brewers, launching a craft brewery is still considered as a good investment opportunity [30, 31]. The owners of Slovak craft breweries expect that the demand for craft beer will rise in the future prompted by increasing income of consumers and the rising demand for differentiated high quality products. In the regions with higher unemployment and lower income (mainly in Eastern Slovakia), the growth of craft breweries is currently slow as the demand for higher quality products is weaker there [32].

Lower prices are decreasing the earnings of craft breweries in relatively poor regions. Regional income is the most important factor influencing the demand for craft beer. There are significant differences in prices and quantity of sold craft beer between the high-income region (Western part of Slovakia close to the capital, Bratislava) and low-income regions (Eastern and Northern Slovakia). Out of 51 craft breweries in Slovakia, 14 are located in the city of Bratislava. Craft beer prices are higher in Bratislava and craft breweries in Bratislava focus on a higher quality and more expensive types of craft beer as India Pale Ale (IPA), American Pale Ale (APA) or stouts in contrast to craft breweries in Eastern Slovakia, which focus on lagers.

Each craft brewery in Slovakia has to employ a qualified brewer who must have accomplished a certified training in brewing completed with an examination. Taking training course is costly and time-consuming, which hinders the development of craft breweries in Slovakia. On the other hand, this certification process ensures that all health and sanitation requirements to protect the public are fulfilled. Most craft breweries complain that the certification process is unnecessarily long and bureaucratic, however.

All interviewed owners and managers of craft breweries also confirmed our assumption that their decision to start a craft brewery was strongly and positively affected by the lack of diversity on the supply side in the beer market. Large breweries produce only lagers and most of the

imported beers were of a lager type, too. More affluent consumers demand different varieties of beer (IPA, APA, stouts, bitters).

Diversity of craft beer is a result of the differences in production technologies and variations in inputs. Apart from pale ales, Slovakian craft breweries are brewing stouts and porters, as well as bitters. Inputs vary depending on the type of beer. There are four main inputs needed for beer production: water, malt, hops and yeast. Based on the survey, the vast majority of inputs is imported except for water. Only some of the craft breweries are using domestic malt from national malting companies. However, a lot of hops is imported from Czech Republic, Germany and other countries. Hops for production of ales are mostly imported from United Kingdom, Australia, USA, the Netherlands and Belgium. Yeasts are imported, as well. Generally, even if 80 % of the inputs is imported, the availability is not an issue and none of the interviewed brewers reported problems.

The brewery equipment is another source of craft beer diversity. There is a traditional Slovakian producer of brewery equipment established in 1972. The former state-owned company was privatized and nowadays exports 90 % of its production. The company was historically focused on equipment for large breweries but with the rising number of craft breweries it started to produce craft brewery equipment as well. However, the majority of the craft breweries involved in this study imported their brewery equipment. Initially, craft breweries imported "second hand" equipment from Czech Republic, Germany and other countries. Nowadays, they purchase specialized high-quality equipment.

There are three options to finance the purchase of brewery equipment: own capital, bank loans and investment grants. EU investment grants were provided within Slovak Rural Development Programme 2007–2013 in measure 3.1.1, and Slovak Rural Development Programme 2014–2020 in measure 6.1.4. The grants covered up to 50 % of the investment. However, majority of craft breweries is financed in form of own capital and bank loans. Some of the craft brewers are managers and owners of businesses. Their partial objective was also to diversify their portfolio. These people financed their investment in craft brewing with their own capital, while others had to use a combination of own capital and bank loans.

Majority of owners of craft breweries had not previously worked in a large brewery. Many of current owners of craft breweries in Slovakia were homebrewers. However, there are some exceptions. The former owner of the third biggest

brewery in Slovakia opened his own craft brewery, as well.

The demand for craft beer is driven by the lack of diversity in beer produced by large breweries. Historically, in Slovakia in 1989 the production of beer was much more regional. Although all beer produced was lager, it was more differentiated with respect to taste. The globalization led to mergers and acquisitions in the brewing industry and to homogenization of the product. Craft breweries offer the diversity consumers are looking for. Demand for diversity is reflected in the cooperation of craft breweries in joint marketing of their products and selling each other's products. Craft breweries in Slovakia also developed cooperation in transfer of knowledge and know-how, as well as joint public relations activities.

Changing drinking patterns and life styles of Slovak consumers had a significant impact on craft breweries. Slovak consumers drink less beer but demand higher quality. The homogenous beer produced by large breweries is substituted by wine and craft beer. This change in life styles is reflected in the national media, where craft beer receives significant attention relative to its share on total alcohol consumption in Slovakia.

The results are in line with earlier studies [33], which identified and described similar factors influencing the craft beer expansion in different countries but there are differences due to different history of the country, income levels, regional differences, beer drinking tradition and product substitutes.

CONCLUSIONS

To the best of our knowledge, there is no study dealing with the drivers of expansion of craft breweries in Slovakia. Using structured interview, we were able to identify some of the reasons affecting craft beer expansion in Slovakia, which are:

- rising demand for diversified beer and different beer styles,
- increase in income, which has a positive effect on the demand for differentiated and high-quality products,
- craft brewery business is considered to be a good investment,
- availability of support schemes (Slovak Rural Development Programme).

On the other hand, there are also some barriers for expansion:

- rising consumption of substitutes like wine and

spirits,

- bureaucracy,
- lack of qualified brewers,
- taxation policy (zero excise duty on wine in Slovakia discriminates the whole beer industry).

Interviewed owners and managers of craft breweries confirmed that their decision to launch a craft brewery was strongly supported by a lack of beer diversity offered on the market. Different styles of beer require different production technologies and variations in inputs. The vast majority of inputs in Slovakia are imported. Hops are usually imported from Czech Republic, Germany, United Kingdom, Australia, USA, Netherlands, New Zealand or Belgium. The yeast is imported according to beer type from USA, Belgium, Czech Republic, Germany or United Kingdom. Malt is obtained from a domestic malt producer apart from the special malt needed for production of special beer styles like stouts or porters.

The launch of majority of craft breweries is financed by a combination of own capital and bank loans.

Considering brewing industry consolidation, the expansion of craft breweries in Slovakia seems to be a logical consequence similarly as earlier expansions of craft beer in many countries in Europe and North America. Nowadays, there are more than 70 craft breweries operating in brewing industry and several new are under construction. There is still a market for new craft breweries and it is expected that there will be over 100 craft breweries active by 2020.

There are some limitations to our research. Even if the number of interviewed craft brewery owners or managers is representative, the margin of error should be further decreased by the increased number of respondents. Furthermore, the majority of craft breweries that took part in the survey are operating in the western and central parts of Slovakia. Therefore, we allow for some regional specific phenomena, which should be closely examined in the future, as craft breweries in the eastern part of Slovakia are characterized by more lager-oriented production when compared to craft breweries operating in Bratislava region.

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