Economic Impact of the Serbian Brewing Sector

A report commissioned by Breweries' Association of Serbia and conducted by Ernst & Young d.o.o. Beograd

Building a better working world

Contents

Short Summary

Beer industry in Serbia in 2020 compared to 2019

-7,19% — The brewing sector **recorded a decline in on-trade segment of 7,19%**

-1,19% — Number of **employees in production** of **beer decreased** by 1.19%

-10,05% — In 2020, **there was a decline in exports** of 10,05%

-15,49% — **Total government revenue** from the brewing sector decreased by 15,49% compared to 2019

-5,55% — **Beer consumption** has dropped by 5,55%

-5,30% — **Consumption per capita** has declined by 5,30% compared to 2019.

3 — Large companies operate in Serbia with 55 different brands and products

96% — Common market share of three large companies through four breweries

EUR 152 mil — Value-added created by beer sector in 2020

EUR 87 mil — Paid excises on beer, 3,39% of all excise paid in Serbia

0,32 — Jobs created at 1,000 hl of beer, above EU average

- Serbia has the **third largest negative** gap between average income and excise in on-trade beer prices in comparison with EU countries
- Serbia has the **second largest negative gap** between average monthly income and excise in off-trade beer prices in comparison with the EU

Short summary of the economic impact of the Serbian Brewing Sector
The Serbian brewing sector is led by three large companies: Molson Coors, Heineken and Carlsberg. Besides them, there are three smaller breweries, several active micro and craft breweries active in the Serbian beer market. Furthermore, Sladara Soufflet also contributes to the brewing sector in Serbia.
In 2020 total production is 5.146.782,99 hectoliters of beer, which is a 7,19% decrease compared to 2019, 6,40% decrease compared to 2018. In comparison to 2010., the production in 2020. is at the same level.
In 2020, Serbian breweries exported 1.372 thousands of hectoliters of beer, which represents a decrease of 10,05% in comparison to 2019, while the export increased in 2019 by 7,47% in comparison to 2018. Cumulatively, from 2010. to 2019., export increased by 45,70%, followed by strong decrease of export in 2020. The main export markets for 2020 are Bosnia and Herzegovina, Bulgaria and Croatia.
In 2020. 384 thousands of hectoliters of beer were imported, which represents a decreas of 3,55% in comparison to 2019. Additionaly, in comparison to 2018, import in 2019. decreased by 8,87%, and in 2020 decreased by 12,02%. The value of imported beer in 2019. was approximately 19,48 milions, while in 2020. that amount was 20,15 milions €.
In 2020. sales (consumption) of domestic beer was 3,921 thousand hectoliters of beer, which is 5,74% less than in 2019. From 2010, consumption of domestic beer fell by 193 thousand hectoliters or by 4,71%.
Total beer consumption per capita in Serbia was 62.15 liters in 2020, which compared with the average of 68 liters for European countries, puts Serbia below the average.
In 2019 and 2020, the total employment effect of the brewing sector is estimated to be 15.682 and 12.779 jobs, arising from the production and sale of beer. These are jobs at the breweries, in the supply sectors and jobs in the on-trade and retail sectors. In 2020, the number of jobs generated by the production and sales was 7.815 less than in 2010.
In 2019 and 2020 Serbian Brewers created 0,30 and 0,32 jobs per 1000hl, which is just below the European average of 0,25..
The value-added due to beer-related activities was approximately €180 million in 2019 and €152 million in 2020. Compared to 2010 the value-added decreased by 4,32%.
Total government revenue of Serbia from beer in 2019 were 283,4 million € and 265,5 milion € in 2020, which represents increase by 9,36%, or 22,7 milion € in comparison with 2010. These revenues include VAT, social security contributions, excise duties, corporate taxes and other environmental fees.
The value of purchases by the beer sector in 2020 decreased by 4,65% compared to 2019. In 2019, 90% of total purchases was in Serbia, while in 2020, 88% of total purchases was made by domestic suppliers.
From 2010. to 2020, in Serbia, excise rate on beer increased by 37%, from 0,16 € to 0,22 € per liter of beer. Total excise on beer in 2020. were 82,9 milion € and they represent 3,19% of total excise in the country.

About the study

Purpose of the study

This study has been commissioned by the Brewers' Association of Serbia in order to assess the economic impact of the brewing sector in Serbia in period from 2010 to 2020.

Economic impact

Economic impact of the Serbian brewing sector can be observed as three different impacts:

- The **direct impact** which can be defined as the effect that is being generated directly by beer-producing companies, more specifically malt as the main component of beer.
- The **indirect impact** represents the effect that beer producers and beer production have on their suppliers. Wide and diverse range of different goods and services are needed for beer production. For example, hops, malt and malted barley, water and packaging materials including bottles and cardboard as well as services provided by engineers, marketing and communications services and many more. As part of this study seven supply industries are distinguished: suppliers of raw materials; packaging and bottling; transport and storage; utilities (electricity, gas and water); media, marketing and communication; equipment, manufacturing and other industrial activities; and also other services/activities such as business activities, community, social and personal services.
- The **induced impact** represents the economic effect generated by sale of beer by off-trade outlets and on-trade firms. The effects caused by the sales of other drinks in on-trade (such as coffee, tea, juices, spirits, and wine) are not within the scope of this study.

EY took into account that malt is the basic raw material in beer production in order to avoid multiplication of effects and results. We measured economic impacts in the following three areas.

- **Employment** quantifies persons employed or jobs created due to production and sale of beer.
- **Value-added** is the amount of value by which the value of a product is increased at each stage of its production, exclusive of initial costs. In other words, the difference between the production value and the value of purchased inputs (goods and services). Value-added is also defined as a sum of enhancements added to a product or service by a company before the product is offered to customers.
- **Government revenues** include all amounts of money received from taxation, fees, fines, and licenses paid by companies directly and indirectly connected to production and sale of beer. This study calculates government revenues from excise duties, VAT, corporate taxes, income tax, social security contribution, and environmental compensation.

Data collection

Most of the data used in this study is acquired through questionnaires collected from three largest brewing companies in Serbia: Molson Coors, Carlsberg and Heineken. Also, some data was collected from Sladara Soufflet Srbija d.o.o. (hereinafter referred to as “Sladara”). EY took into account that the malt represents the basic raw material in the production of beer so as not to duplicate the results. In case certain data was unavailable, we used publicly available data sources, such as Statistical Office of the Republic of Serbia (hereinafter “RZS”) and European Brewers' Association. Certain key parameters used for calculation were provided to us by Center for Advanced Economic studies (hereinafter “CEVES”). Additionally, having in mind the time period of the study, the first quarter of 2021, a certain set of data related to aggregate data of economic activity of certain economic segments in Serbia until 2020 is not available, and as explained in certain data groups throughout the study used prediction functions based on an available data set. When further analyzing and presenting the data from this study, it is necessary to pay attention to the notes if projections were used for the time series, which are presented in Annexes **I**, **II**, **III**.

1 The Serbian Beer Market

1.1 Global trends and impact on Serbia

The daily life of consumers, as well as producers around the world, has been strongly changed by the impact of the global COVID-19 pandemic during 2020. While consumer-oriented companies are trying to find the right answer to the crisis as well as a way out of the crisis, which particularly affected retail, catering and tourism, it is important to keep in mind that consumer habits changed rapidly before the crisis. In addition, the crisis has accelerated processes and directed producers and traders to find new ways to reach their consumers.

In the early stages of the pandemic, consumers were strongly concerned about their own health as well as the health of their families, and when faced with uncertainty, they were focused on meeting basic living needs and thus on saving. Across the EU market, different trends were observed during 2020 depending on how the epidemiological measures were implemented. In such conditions, four different patterns of consumer behavior were observed that affect the demand for products in retail and catering, namely: *Buy and create stocks*, *Strongly save*, *Stay Calm and Continue* as well as the last pattern *Hibernate and spend*.

By observing and researching consumer habits, a small percentage of consumers are expected to return to old consumer habits. Some consumers managed to return to their old consumer habits during 2020, but that process is slow and largely depended on the implemented epidemiological measures. EY global research has shown that for 54% of consumers, price is a more important factor when buying than it was before the pandemic. Additionally, 71% said they did not feel comfortable going to bars and cafes again, 67% said it reduced the number of visits to stores while 26% of consumers increased the volume of spending through online channels. Finally, 32% of consumers said they plan to spend less on alcohol in the long run.

Global trends that emerged during 2020 around the world, have affected the habits of consumers in Serbia, acting equally on consumer habits and production capacity. In the case of the beer sector and its impact, as shown throughout the study, a strong decline in beer production caused by reduced demand is visible. Additionally, this caused a decline in government revenues through the collection of taxes, contributions, excise duties and VAT. It should be noted that the final data for 2020 when it comes to data on value added of the beer sector and employment contribution have not yet been confirmed and processed by the Republic Bureau of Statistics, which will be updated in the study based on data availability.

Although the trend of development and contribution of the beer sector in Serbia during the period 2008-2019 was very stable and positive, the changes that followed in 2020 affected the beer sector, especially in the area of on-trade beer consumption. The positive growth trend of the beer sector in Serbia, which was interrupted in 2020, still shows a large impact of beer producers and complemented participants in the chain on state revenues, employment and mobilization of resources of other sectors. The study presents key data from which it is possible to identify these trends and impacts and draw conclusions about the importance of the beer sector as well as the challenges currently facing the sector.

1.2 Highlights

The key points of the data on the beer sector can be read through Table 1.1, which shows the production of beer, the ratio of imports and exports, and data on consumption itself. If we look at the period from 2010 to 2020, it is possible to see that the CAGR (complex annual growth rate) of the beer sector was observed through production -0.96%, bearing in mind that there was a decline in exports in 2020 and beer imports in 2019. and 2020 . The growth of beer consumption in Serbia in certain years, observed through beer consumption per capita in liters does not show the real state of consumption growth because it is mostly driven by population decline, while total consumption shows stagnation, and decline in 2019 and 2020 .years.

Figure 1.1: Key figures for beer sector in Serbia

Key figures (u 000 hl)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Production	5.131	5.347	5.364	5.043	4.971	5.227	5.226	5.334	5.498	5.545	5.147
Exports	1.047	1.143	1.161	1.123	1.192	1.218	1.265	1.283	1.426	1.525	1.372
Imports	39	68	81	125	194	224	220	377	436	398	384
Consumption	4.153	4.299	4.257	4.030	3.987	4.263	4.292	4.551	4.670	4.558	4.305
Consumption per capita(l)	56,96	59,41	59,11	56,24	55,91	60,09	60,81	64,14	66,17	64,81	62,15
Production value (milion €)	232	243	235	222	207	215	213	230	248	244	235

Sources: RZS, Questionnaires, Serbian Brewers Association.

In this part, it is important to note that the data on beer consumption per capita are based on the population estimate in Serbia for 2020, and based on the trend of population movements in the period 2008-2019, which is regularly published by the RZS.

1.3 Production

The Serbian brewing sector is led by three large players: Heineken Serbia d.o.o. Zajecar (member of Heineken International BV, hereinafter “Heineken”), Carlsberg Serbia d.o.o. Celarevo (member of Baltic Beverages Holding AB, hereinafter “Carlsberg“) and Apatinska pivara d.o.o. Apatin (Molson Coors SER d.o.o. Apatin, hereinafter “Molson Coors). These three companies operate four breweries in Serbia and together their market share is 96%. Beside these breweries, there are three smaller breweries and more than 40 craft breweries active in the Serbian market and the majority is gathered around the Association of Small and Independent Breweries of Serbia.

Beside breweries, Sladara Soufflet Serbia d.o.o is a member of the Brewers’ Association of Serbia and it also highly affects the beer production process. However, its direct impact on the Serbian economy is not shown in this report, but it is included in the segment which deals with the analysis of the effects of beer producers and beer production on suppliers.

The whole brewing sector produces many different types of beer, most of which are produced by Heineken, Calsber and Molson Coors(55 different brands).

Besides the production and sales of beer, these brewing companies also carry out beer-related activities such as the transportation of beer, the wholesale of beer.

Figure 1.2: Members of Breweries Association of Serbia

Beer company	Number of breweries	Number of brands
Molson Coors	1	15
Carlsberg	1	25
Heineken	2	15

Sources: Brewers' Association of Serbia, Breweries

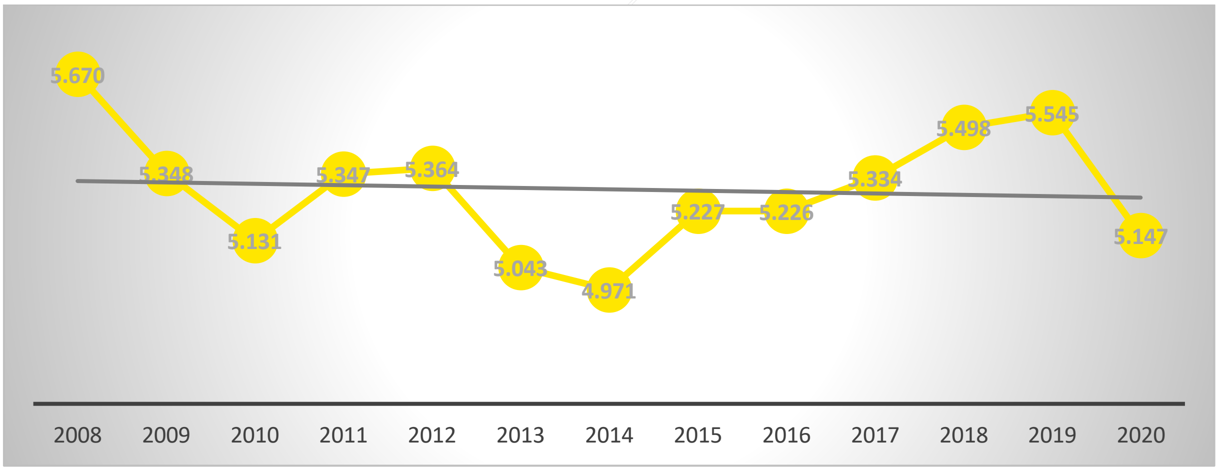
The brewing sector was severely affected by the economic crisis of 2008, which manifested itself most strongly on the Serbian market in 2009 and 2010. The decline in production in 2010 compared to 2008 was almost 10%. It is noticeable that in the period from 2010 to 2020, the beer sector stabilized, having a slight growth trend until 2019, but in the last year, a decline in production was recorded. In 2020, production reached the lowest level in the last 6 years, which shows how strong the consequences of the global pandemic were on the beer sector in Serbia.

Namely, in 2020, 5,146,782.99 hectoliters of beer were produced, which is 7.19% less than in 2019, which is a decrease of 6.40% compared to 2018. Compared to 2010, production in 2020 is almost at the same level.

The two charts below represent beer production in Serbia and its value by year, in the period from 2008 as a period before the economic crisis until 2020. There is a visible decline in beer production as previously stated in relation to 2019 and 2008 in the amount of 9.22%.

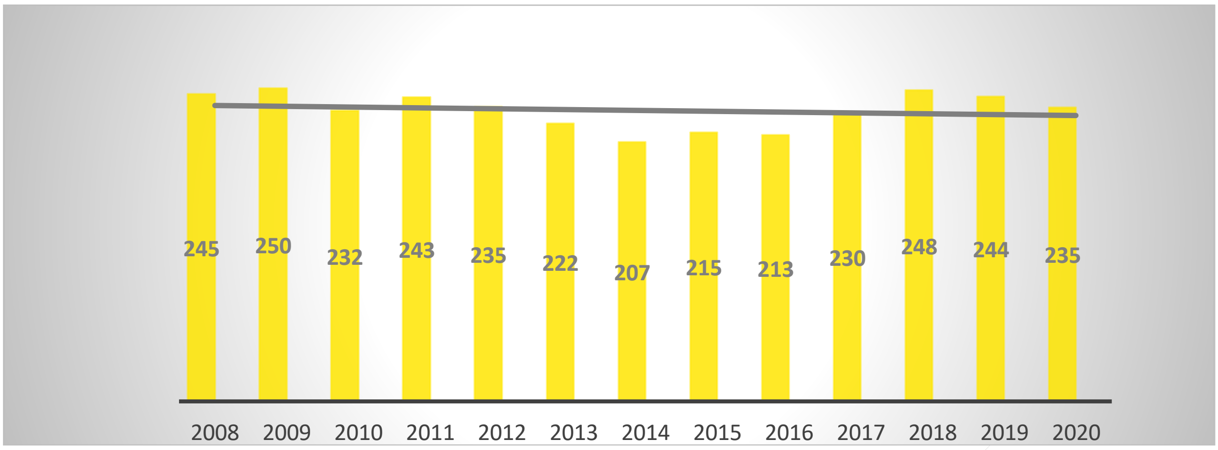
After the decline in production in 2013 and 2014, there is a stable growth in beer production in the period from 2015 to 2019 and a further decline in production in 2020. It is evident that beer production in Serbia has not yet reached the level of beer production from 2008.

Figure 1.2.1: Beer production ('000 hl) in Serbia



Source: Questionnaires

Figure 1.2.2: Beer production ('000 €) in Serbia without VAT and excise



Sources: Questionnaires, Calculations by Ernst & Young

Observed in EUR, the value of production decreased (by 4.35%) in the period 2008-2020. (In 2020, the value of production was 235 million euros). However, in 2017 and 2018 there was an increase compared to 2016, but in 2019 and 2020 there was a negative trend: a decrease in the value of production in 2019 compared to 2018 in the amount of 2.32% due to a decrease in wholesale prices, and in 2020 compared to 2018 in the amount of 5.86% due to decrease in production volume.

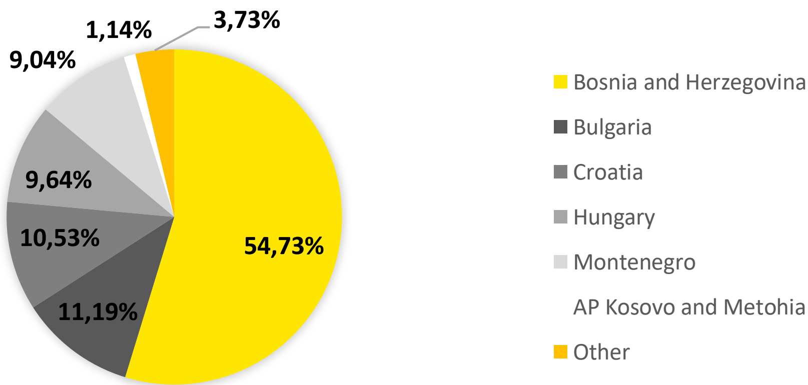
1.4 Exports and Imports

Exports

In 2020, Serbian breweries exported 1,372 thousand hectoliters of beer, which is a decrease of 10.05% compared to 2019, while exports grew in 2019 by 7.47% compared to 2018. Cumulatively, in the period from 2010 to 2019, exports increased by 45.70%, which was then followed by a sharp decline in exports in 2020.

In 2020, the largest share of beer was exported to Bosnia and Herzegovina, followed by Bulgaria, Croatia, Hungary, Montenegro and the Autonomous Province of Kosovo and Metohija.

Figure 1.3.1: Share of exports per country in 2020.



Country	Export in 000 hl
Bosnia and Herzegovina	750,79
Bulgaria	153,51
Croatia	144,41
Hungary	132,23
republic of Montenegro	124,06
AP Kosovo and Metohija	15,62
Other	51,13

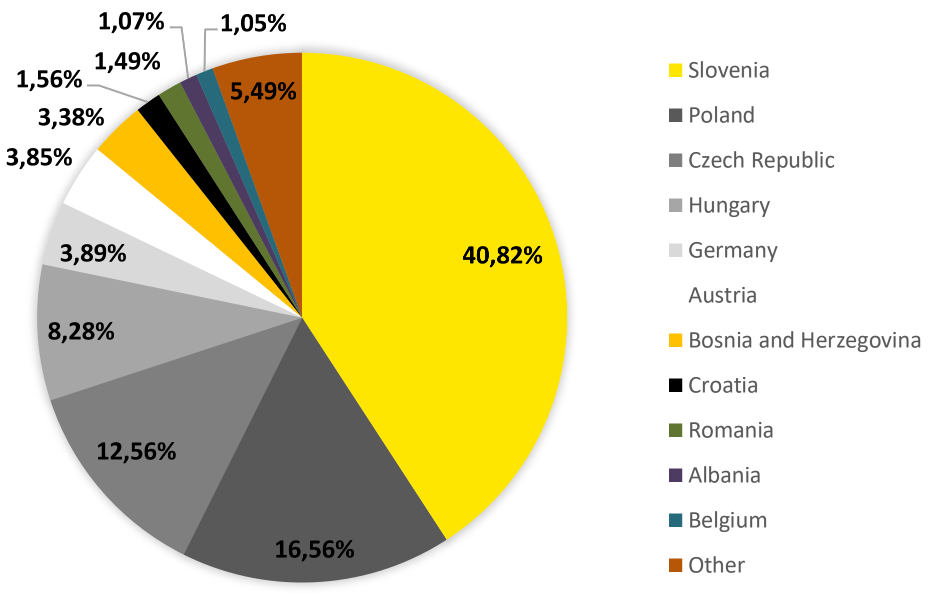
Sources: Customs Bureau

Imports

In 2020. 384 thousand hectoliters of beere were imported, which represents decrease of 3,55% in comparison to 2019. Additionally, when compared to 2018., imports in 2019. fell by 8,87%, and in 2020. they fell by 12,02%. The imports of beer in the previous period have exhibited a significant growth trend until 2018., since then imports have declined, especially in 2020.

The value of imported beer in 2019 was approximately 19,48 million, while that number in 2020 amounted to 20,15 million €.

Figure 1.3.2: Share of Imports by country in 2020



Sources: Breweries Association of Serbia

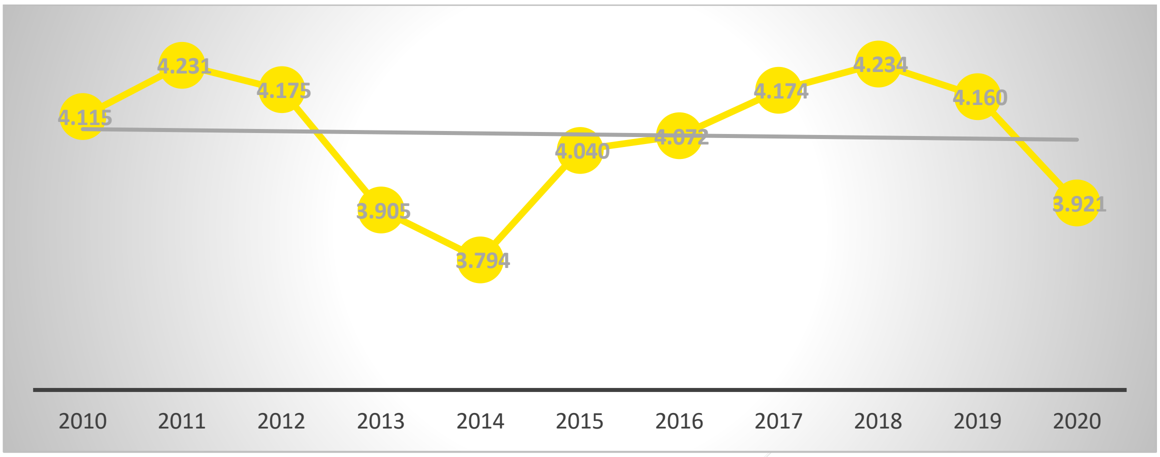
In 2020., the largest share of imported beer came from Slovenia, Poland, Czech Republic, Hungary, Germany, Austria and Bosnia and Hercegovina.

1.5 Consumption

Beer consumption is the sum of beer consumption produced in Serbia and consumption of imported beer.

Consumption of beer in Serbia in 2020 amounts to approximately 4,305 thousand hectoliters, which compared to 2019 represents a decrease of 253 thousand hectoliters or 5.55%. When we compare the consumption of beer in 2019 with the consumption during 2018, a decrease in the amount of 45 thousand hectoliters, or 0.99%, is noticeable. Observing the consumption of beer in 2020 with the consumption of beer in 2018, a decrease of 365 thousand hectoliters or 7.82% is noticeable.
In 2020, the consumption of locally produced beer in Serbia amounted to 3,921 thousand hectoliters, which is a decrease of 5.74% compared to the previous year. Since 2010, the consumption of locally produced beer has decreased by 193 thousand hectoliters or 4.71%.

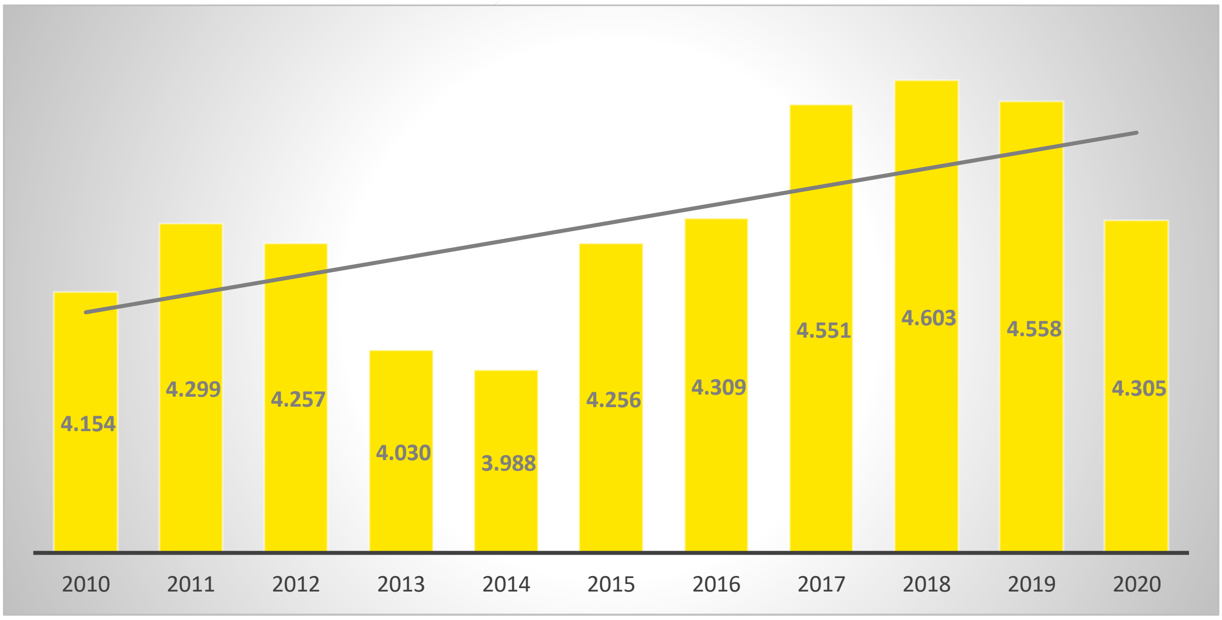
Figure 1.4.1:Local spending of beer produced in Serbia (‘u 000 hl)



Sources: Questionnaries

For further clarification, we want to emphasize that consumption consists of consumption of local beer and imported quantity of beer, while sales of domestic beer are equal to consumption of domestic beer.

Figure 1.4.2: Local spending of beer in Serbia (000 hl)



Sources: Breweries Association of Serbia, Questionnaires

As shown above, total beer consumption (local consumption with imports) in Serbia experienced a slight increase in the period from 2010 to 2018 with a decrease in 2019 and 2020.

Consumption of beer in Serbia in 2020 is approximately 62.15 liters per capita. Compared to European Union countries, beer consumption per capita is below average (68 liters per capita). Table 1.4.3 shows the position of average consumption per capita in 2019 (based on data from The Brewers of Europe) and in 2020 (based on consumption estimates in the EU and Serbia based on data for the period 2012-2018) and are compared from the highest to the lowest consumption in 2019.

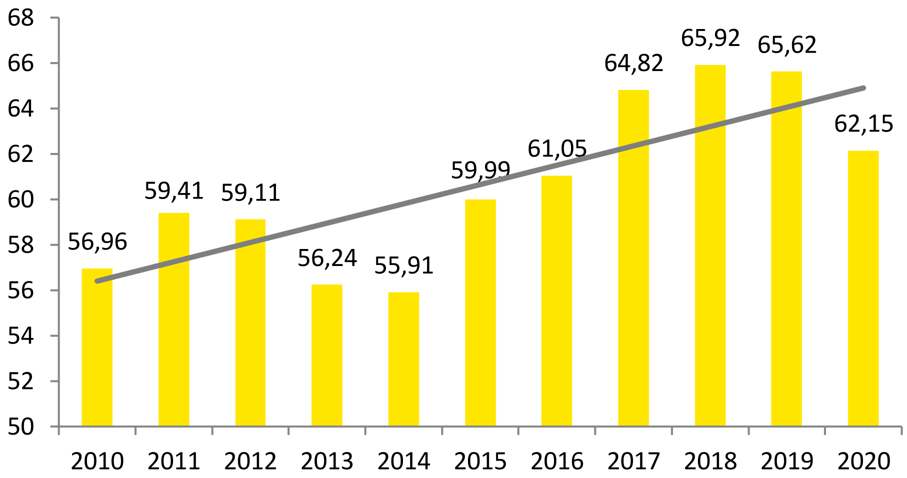
Figure 1.4.3: Beer consumption per capita in liters

Country	**Beer consumption per capita (in l) in 2019.**	**Beer consumption per capita (in l) in 2020.**
Czech Republic	142	137
Austria	107	104
Germany	100	99
Poland	98	99
Croatia	88	82
Romania	86	80
Slovnia	82	82
Estonia	81	75
Ireland	77	78
Slovakia	75	71
Bulgaria	74	76
Finland	73	73
Netherland	71	69
Great Britain	71	73
Hungary	70	65
Luxembourg	69	69
Serbia	64	62
Denmark	62	60
Cyprus	59	59
Switzerland	55	53
Portugal	53	50
Malta	52	58
Spain	52	51
Norway	51	52
Greece	37	36
Italy	35	35
France	33	34
Turkey	11	10
Litvania	-	83
Latvia	-	82
Belgium	-	64
Sweden	-	58

Sources: Questionnaires, The Brewers of Europe Beer Statistics 2020 edition

Consumption of beer per capita in Serbia has varied in previous years, but has a growing trend. Consumption increased by approximately 5 liters per capita in the period from 2010 to 2019, and compared to 2010, consumption is higher by almost 10 liters.

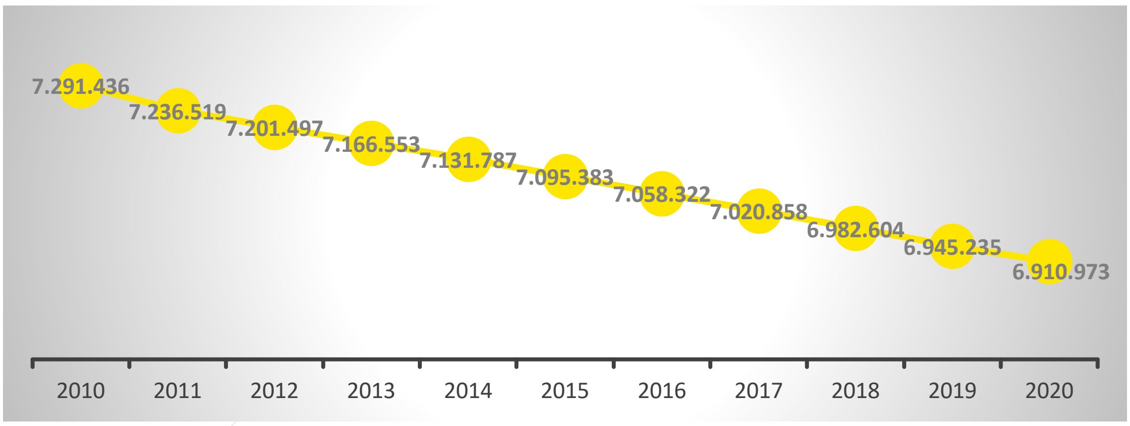
Figure 1.4.4: Annual display of beer consumption per capita in Serbia



Sources: Questionnaires, RZS

Looking at the chart above, we can see that beer consumption per capita has tended to decline in the last two years. The graph below shows the total number of inhabitants in the Republic of Serbia in the previous 10 years.

Figure 1.4.5: Approximated population in Serbia



Source: RZS (2010.-2019.)

Note that the population data for 2020 were estimated on the basis of published RZS data for the period 2010-2019.

It is noticeable that the population in Serbia decreased during the observed period. However, the growth of consumption per capita more than compensated for the decrease in the number of inhabitants, so the total consumption of beer increased in the period until 2018, with a decrease in total consumption for the period 2019 and 2020.

1.6 Distribution channels

Purchase of beer in Serbia is mainly done in supermarkets and other retail outlets, referred as the off-trade channel, while remaining purchase is done in bars, restaurants and hotels, referred as on-trade channel.

Figure 1.5.1: Quantity of sold local beer (000 hl)

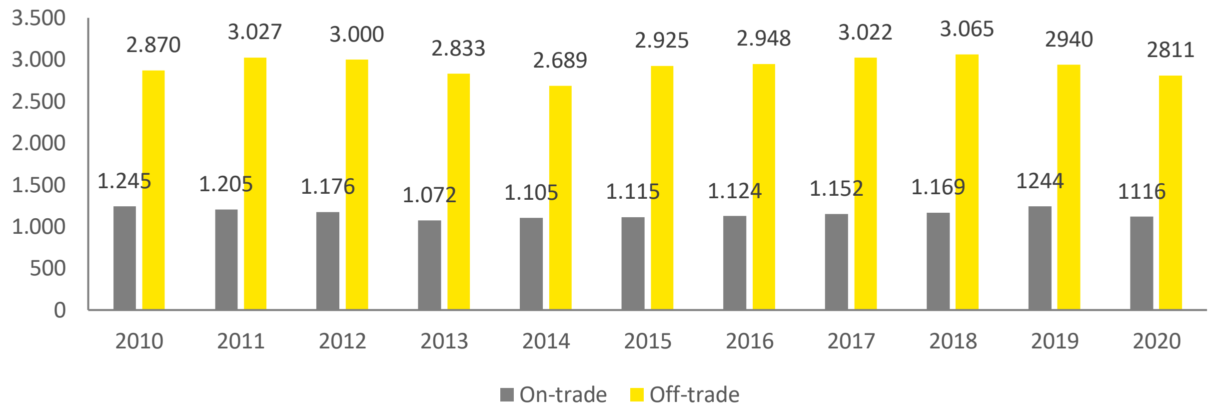
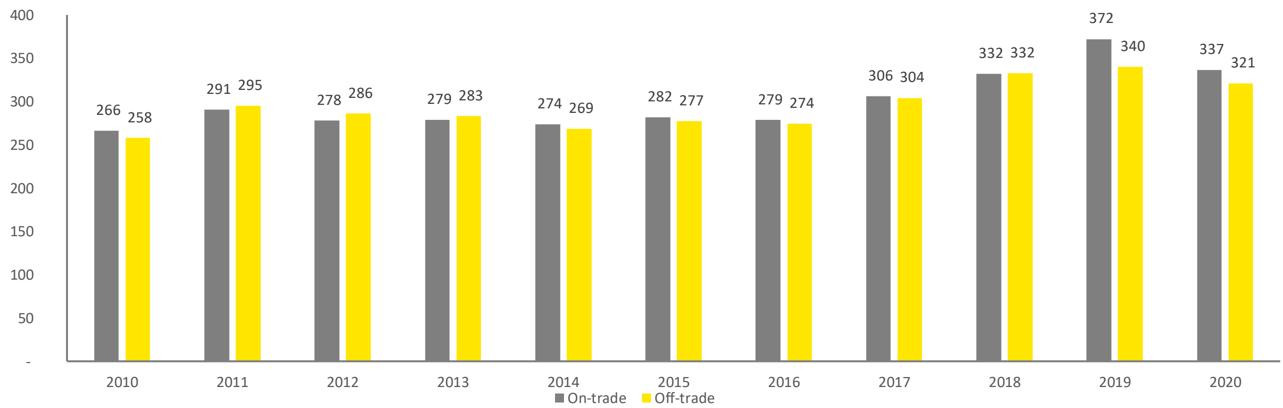


Figure 1.5.2: Value of sold local beer (mil EUR)



We can notice that the amount of beer sold in on-trade experienced an increase in 2019, while off-trade experienced a decline in 2019. According to available data for 2020, both segments experienced a decline compared to 2019. Sales values increased in off-trade and on-trade in 2019, while a decline in the value of beer sold in retail was recorded in 2020.

1.7 The contribution of brewers during the pandemic

During 2020 and the global pandemic that significantly changed the way the breweries operate, but also the actions and behavior of the entire society, the breweries gathered in the Association showed a high level of awareness of the circumstances in which they operate. Through their activities as well as through their programs of support to the local and wider community, the breweries have made significant donations both in money and in material resources. During 2020 alone, the breweries allocated over EUR 500,000 to:

- Donations to the Ministry of Health of Serbia,
- Donations to the Republic Health Insurance Fund,
- Donations to the Clinical Hospital Center Zemun and the Clinical Hospital Center Zvezdara,
- Donations in protective equipment to local communities and health care institutions,
- Donations in protective equipment for partners in the HoReCa sector.

During 2020, the breweries also supported infrastructure projects in local communities as well as the work of cultural and sports organizations.

2 The impact of the brewing sector on the Serbian economy

The tables below show the results of the study of the impact of the brewing sector on the economy of Serbia, in the following categories:

a. Government revenue
b. Added value
c. Employment

Figure 2.1: Government revenues from beer

Govetnment revenue (in 000 €)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Excises	67.214	75.615	72.622	75.472	71.880	77.374	78.679	79.936	83.112	85.221	82.909
VAT	110.149	123.491	119.415	129.637	124.242	116.032	113.040	117.194	125.234	131.021	122.585
Social contributions	57.565	59.834	55.625	54.344	52.282	51.960	47.266	50.872	53.615	62.711	54.969
Corporate taxes	4.742	6.554	4.302	1.354	721	1.201	577	2.436	1.019	1.854	2.525
Other taxes	3.070	3.474	4.344	4.371	3.510	3.158	3.075	4.488	4.672	2.551	2.481
Total	**242.740**	**268.968**	**256.308**	**265.178**	**252.636**	**249.725**	**242.637**	**254.926**	**267.652**	**283.358**	**265.469**

Figure 2.2.: Value-added generated by sector due to beer sales

Value added (in 000 €)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Beer sector	32.105	34.565	32.944	34.383	30.982	27.546	24.471	25.758	26.519	32.115	31.583
Supply sector	33.684	36.943	35.036	33.893	34.786	37.053	37.241	34.400	35.440	42.647	37.478
On-trade channel	73.684	73.442	69.053	66.875	67.347	70.186	61.964	69.887	75.719	76.887	55.407
Off-trade channel	20.216	22.880	23.051	21.524	20.638	22.338	21.986	23.320	25.211	29.151	28.317
Total	**159.690**	**167.830**	**160.084**	**156.675**	**153.754**	**157.124**	**145.663**	**153.364**	**162.890**	**180.800**	**152.785**

Figure 2.3.: Number of persons employed due to beer production and sales

Sectors	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Breweries	1.723	1.739	1.754	1.755	1.751	1.847	1.732	1.654	1.652	1.432	1.415
Supply sector	2.589	2.647	2.445	2.341	2.389	2.395	2.118	1.939	1.838	2.067	1.887
On-trade sector	14.272	13.159	12.225	11.094	11.335	10.711	9.252	9.837	9.852	10.282	7.540
Off-trade sector	2.011	2.107	1.970	2.008	1.906	2.046	1.923	1.916	1.944	1.901	1.937
Total	**20.594**	**19.652**	**18.394**	**17.197**	**17.381**	**16.999**	**15.024**	**15.347**	**15.286**	**15.682**	**12.779**

Sources: Questionnaires, Calculations by Ernst & Young

3 Government revenues

3.1. Highlights

Figure 3.1: Government revenues from beer

Government revenue (in 000 €)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Excises	67.214	75.615	72.622	75.472	71.880	77.374	78.679	79.936	83.112	85.221	82.909
VAT	110.149	123.491	119.415	129.637	124.242	116.032	113.040	117.194	125.234	131.021	122.585
Social contributions	57.565	59.834	55.625	54.344	52.282	51.960	47.266	50.872	53.615	62.711	54.969
Income taxes	4.742	6.554	4.302	1.354	721	1.201	577	2.436	1.019	1.854	2.525
Other taxes	3.070	3.474	4.344	4.371	3.510	3.158	3.075	4.488	4.672	2.551	2.481
Total	**242.740**	**268.968**	**256.308**	**265.178**	**252.636**	**249.725**	**242.637**	**254.926**	**267.652**	**283.358**	**265.469**

Sources: Questionnaires, Calculations by Ernst & Young

3.2. Government revenues

The Republic of Serbia has significant benefits from the production and sale of beer, because it generates revenues from excise duties, VAT (20%), payroll taxes and social security contributions at the expense of employees and their employers in the beer sector, but also in other sectors whose businesses are related to beer (supply sector, on-trade distribution channels and retail sector). In addition to the mentioned taxes, the state also benefits from other taxes, such as profit tax, property taxes, fuel excises, fees for water use, protection and improvement of the environment.

The total paid excise duties on beer calculated on the basis of data submitted by members of the Association in 2019 amounted to € 85.2 million, while in 2020 this amount was € 82.91 million.

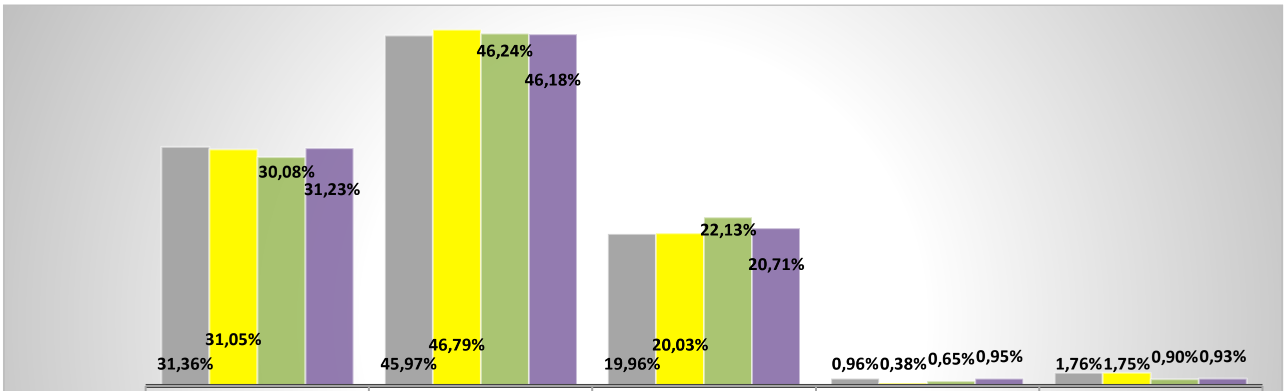
Gross domestic product in 2019 amounted to EUR 45,967 million in current prices. Compared to the previous year, GDP is nominally higher by 6.8% and really by 4.2%. It is estimated that in 2020, Gross Domestic Product amounted to EUR 45,570 million, while official data are not yet available.

Also, the total government revenues to which the brewing industry contributes amounts to about 3.5% of the budget of the Republic of Serbia, ie. total revenues and incomes of the Republic of Serbia in 2020.

The brewing industry is part of the manufacturing industry. The entire manufacturing industry had the largest share in the formation of GDP in 2019 with 13.7% according to the data published for 2019 by the RZS.

Moreover, government revenues have several components including excises, VAT, compulsory social security contributions, income taxes, and other taxes, whose trends and variations are presented in the graph.

Figure 3.2.1: Government revenues components



	Excises	VAT	Social contributions	Corporate tax	Other tax
2017	31,36%	45,97%	19,96%	0,96%	1,76%
2018	31,05%	46,79%	20,03%	0,38%	1,75%
2019	30,08%	46,24%	22,13%	0,65%	0,90%
2020	31,23%	46,18%	20,71%	0,95%	0,93%

Note: figure shows share of components in government revenues

Since 2010, when the excise tax was 16.56 cents per liter of beer, there has been an increase of up to 22.20 cents per hectolitre of beer in 2020, an increase of about 34%.

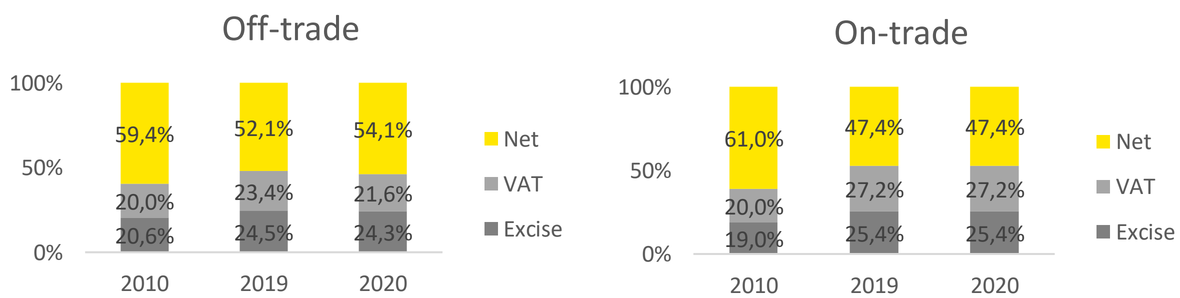
For the purposes of this Study, based on the data provided to us by the members of the Association of Brewers of Serbia, we calculated the state revenues from the beer trade in the period from 2010 to 2020. In 2020, the total state revenue amounted to € 265.5 million, which is about 9.36% more than in 2010.

The structure of government revenues has been relatively stable in the last two years, with minor changes. The largest share in revenues in 2020 is occupied by VAT (46.18%) and excises (31.23%). Social contributions (20.71%), corporate and other taxes have a share of about 2%.

When we look at the main items of the structure of government revenues, the conclusion is that there was a slight decline in the share of excises in the past four years, where the share in 2017 was 31.36%, and in 2020 31.23%, while VAT remained almost identical.

For the purposes of calculating the share of VAT and excise duties that breweries pay per 1 liter of beer, we use the prices that breweries charge to distributors. Based on our budgets, for every liter of beer sold to distributors in the on-trade and off-trade channel, 50 cents and 45 cents, respectively, goes to the state in the form of VAT and excise duties, respectively.

Figure 3.2.2: Income from VAT and excise per litre of beer in percentage in on-trade and off-trade channel

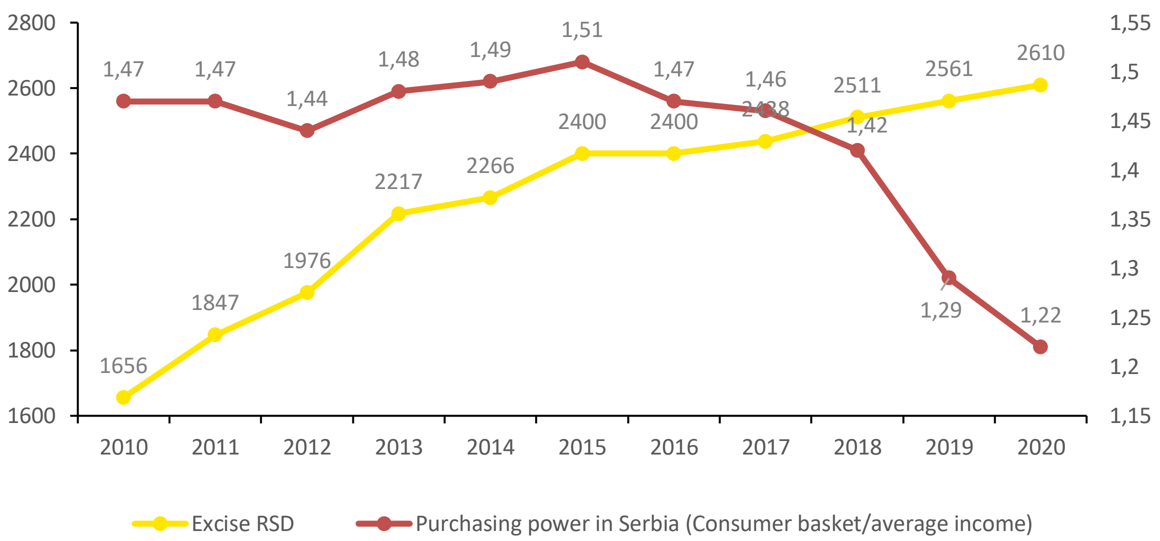


Sources: Calculations by Ernst & Young

3.3. Excise duties on alcoholic beverages

The level of excise duties per hectolitre of beer in dinars is shown in Graph 3.3.4. As shown, the level of excise duties has been constantly rising. Namely, the Law on Excise Duties and the Law on Excise Duties harmonized the amount of excise duty on alcoholic beverages, including beer, with the retail price growth rate almost every year. Also, the graph shows the movement of average purchasing power in the Republic of Serbia (the ratio of the consumer basket and the average salary without taxes and contributions). An evident decline in the purchasing power of the population since 2015 can be noticed.

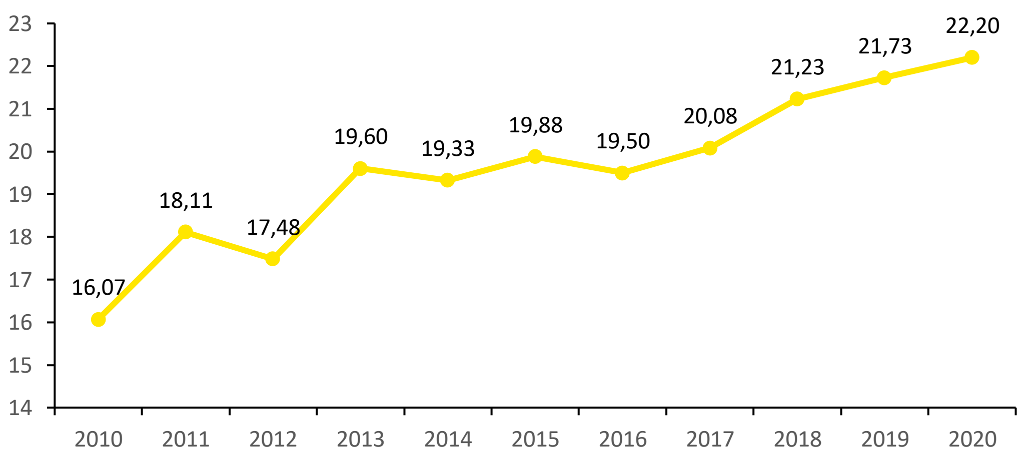
Figure 3.3.4: Level of excise per hectolitre of beer in RSD



Sources: Law on excise, Report on purchasing power by Ministry of Trade, tourism and telecommunications

When we present the amount of excise duties in euros, the excise rate has increased by an average of 3.41% per year since 2010 and reached 22.20 euro cents per hectolitre of beer in 2020.

Figure 3.3.5: Level of excise per hectolitre of beer in €



Sources: Calculations by Ernst & Young

Also, we analyzed the movement of excise duties on beer, low-alcohol beverages, as well as on alcoholic beverages in relation to the consumer price index in Serbia.

The movement of excises is shown in relation to the chain, ie. annual consumer price index (CPI).

The following table provides an overview of excise trends in different categories of beer and CPI index. The yellow color marked the changes where the excise tax increased more or less in relation to the CPI index. Data for 2020 are not available.

Figure 3.3.6: Excise trends and CPI movements of different categories of alcoholic drinks

Categories	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Beer	12,41	15,00	16,56	18,47	19,76	22,17	22,66	23,04	24,00	24,38	25,11	25,61
Change (%)	**-**	**21%**	**10%**	**12%**	**7%**	**12%**	**2%**	**2%**	**4%**	**2%**	**3%**	**2%**
Low alcoholic beverages	9	13,25	14,62	16,31	17,45	19,58	20,01	20,35	21	21,33	21,97	22,41
Change (%)	**-**	**47%**	**10%**	**12%**	**7%**	**12%**	**2%**	**2%**	**3%**	**2%**	**3%**	**2%**
Fruit brandy	53,83	79,35	87,58	97,68	104,52	117,27	119,85	121,89	124,00	125,98	129,76	132,36
Cereal brandy	136,55	201,32	222,20	247,82	265,17	297,52	304,06	309,23	316,00	321,05	330,68	337,29
Other spirits	87,54	129,04	142,42	158,84	169,96	190,69	194,88	198,19	203,00	206,24	212,43	216,68
Change (%)	**-**	**47%**	**10%**	**12%**	**7%**	**12%**	**2%**	**2%**	**2%**	**2%**	**3%**	**2%**
Consumer price index(2006=100)	122,7	130,8	144,2	154,3	173,1	176,9	180	182,8	185,6	191,2	195	198,00
Change (%)	**-**	**7%**	**10%**	**7%**	**12%**	**2%**	**2%**	**2%**	**2%**	**3%**	**2%**	**2%**

It is noticeable that excises on beer are significantly lower than excises on strong alcoholic beverages, but also that they are higher compared to low-alcohol beverages.

In general, excise duties on beer and other alcoholic beverages are adjusted at the beginning of the year for the amount of the change in the CPI (chain index) in the previous year.

However, in 2010, 2011 and 2016, there was an independent increase in the amount of excise duties by amendments to the Law on Excise Duties. The proposals for amending the law did not provide a detailed explanation of why there was an increase in the amount of excise duty in the mentioned years.

It is noticeable that in these periods (ie periods immediately preceding the period of increase in excise duties - 2009 and 2015) the impact of the economic crisis on the beer market is manifested through a significant decline in purchasing power, decline in consumption and decline in production. One of the motives for increasing the excise tax could, therefore, be to compensate for government revenues in situations of declining demand.

It is also noticeable that in 2020 there was a decrease in the total amount of excise duties collected by 2.70% compared to 2019, which is a smaller decrease than the decrease recorded in the production or consumption of beer in Serbia.

4 Value-added

4.1. Highlights

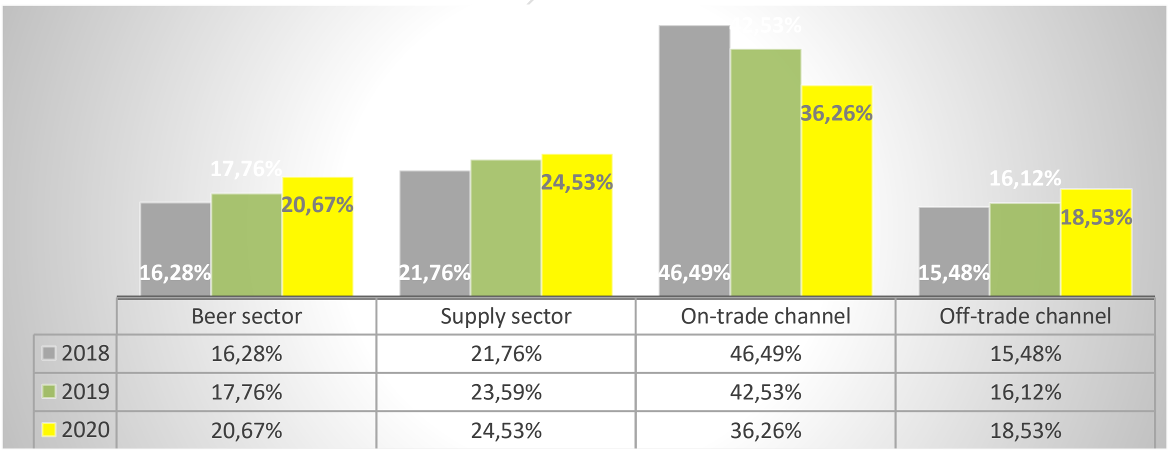
Figure 4.1.1: Value-added by sectors generated by productiond and sales of beer

Value added (in 000 €)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Beer sector	32.105	34.565	32.944	34.383	30.982	27.546	24.471	25.758	26.519	32.115	31.583
Supply sector	33.684	36.943	35.036	33.893	34.786	37.053	37.241	34.400	35.440	42.647	37.478
On-trade channel	73.684	73.442	69.053	66.875	67.347	70.186	61.964	69.887	75.719	76.887	55.407
Off-trade channel	20.216	22.880	23.051	21.524	20.638	22.338	21.986	23.320	25.211	29.151	28.317
Total	**159.690**	**167.830**	**160.084**	**156.675**	**153.754**	**157.124**	**145.663**	**153.364**	**162.890**	**180.800**	**152.785**

Sources: Questionnaries, Calculations by Ernst & Young (data for the period 2015-2018 updated based on available RZS data)

Below is a chart showing trends and percentages of value added components (brewing sector, procurement sector, on-trade and off-trade channels) for 2018 and 2020 where you can see the change in value added components between two years. The structure of the components has changed slightly compared to 2018, but the total value has decreased compared to 2018. A significant decline is visible in the on-trade channel, which is expected having in mind the adopted epidemiological measures during 2020.

Figure 4.1.2: Value-added components



Note: figure trends and percentages represent share in value-added

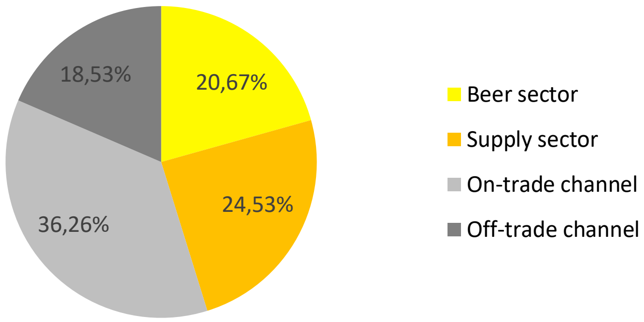
4.2. Value-added by sector

An important economic contribution of the beer industry is the added value created by beer production, as well as the added value that arises from procurement, retail and on-trade distribution channels. Added value can be defined as the improvement of a product and the way a product is offered by a company before the product is offered to customers. It can also be defined as the amount by which the value of the product is increased at each stage of production, excluding initial costs.

In 2020, employees in the beer industry and beer-related sectors (procurement sector, on-trade channels and retail) generated around € 152 million of added value. Of this amount, € 31.58 million was generated in the beer sector, € 37.47 million in the purchasing sector, € 55.4 million in the on-trade distribution channel and € 28.31 million in the retail sector. Compared to 2018, the total added value in 2020 decreased by 6.20%, and compared to 2019 decreased by 15.49%.

The share of the beer sector in the total added value arising from the production and sale of beer is approximately 20.67%, which is slightly higher than the share of the beer sector in the total employment related to beer (11.08%). One explanation for this phenomenon is the higher productivity of employees in the beer sector compared to the productivity of employees in other sectors. Another possible explanation may be the fact that the beer industry is capital intensive compared to the retail, on-trade and transport industries which are labor-intensive. The graph below shows the added value created due to beer in Serbia.

Figure 4.2: Value-added by sectors in 2020



Sources: Calculations by Ernst & Young

5 Employment

5.1 Highlights

The next two graphs show the number of people employed in Serbia in the production and sale of beer, as well as the trend of the components that were included in the calculation. As shown in the table below, total employment resulting from beer production decreased by 37.95% between 2010 and 2020. The largest decline in the ten-year period was present in the supply sector (27.13%) and the on-trade sector (47.17%).

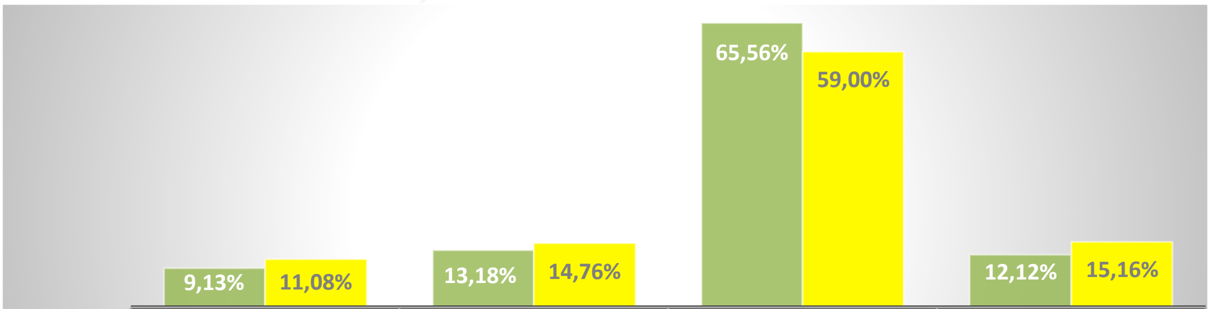
Figure 5.1.1: Number of persons employed due to beer production and sales

Sectors	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Breweries	1.723	1.739	1.754	1.755	1.751	1.847	1.732	1.654	1.652	1.432	1.415
Supply sector	2.589	2.647	2.445	2.341	2.389	2.395	2.118	1.939	1.838	2.067	1.887
On-trade sector	14.272	13.159	12.225	11.094	11.335	10.711	9.252	9.837	9.852	10.282	7.540
Off-trade sector	2.011	2.107	1.970	2.008	1.906	2.046	1.923	1.916	1.944	1.901	1.937
Total	**20.594**	**19.652**	**18.394**	**17.197**	**17.381**	**16.999**	**15.024**	**15.347**	**15.286**	**15.682**	**12.779**

Sources: Questionnaires, Calculations by Ernst and Young

As shown in the chart below, in 2020 there was a decline in employment compared to 2019, while as expected, the components of the share in total employment also changed. Employment in the on-trade sector has the largest share of all components with 59% in 2020. Compared to 2019, there was a significant decline in the number of employees in the on-trade sector, which caused an increase in the share of other shares in total employment, especially in the off-trade sector, given the changes in consumer habits in the market.

Figure 5.1.2: Share of components in employment



	Beer sector	Supply sector	On-trade channel	Off-trade channel
2019	9,13%	13,18%	65,56%	12,12%
2020	11,08%	14,76%	59,00%	15,16%

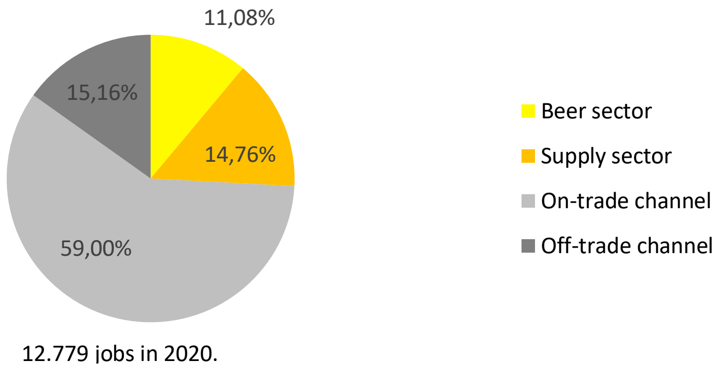
Note: figure trends and percentages represent share of components in employment

5.2 Total employment due to beer

The total employment related to the production and sale of beer in 2020 is approximately 12,779 jobs, which is a decrease of 16.40% compared to 2018, and compared to 2019, a decrease of 18.51%. In 2020, the total employment resulting from the production and sale of beer consists of 1,415 jobs in the beer sector, 1,887 jobs in the procurement sector, 7,540 jobs in the on-trade sector and 1,937 jobs in the retail sector.

The structure of employees in 2020 experienced changes caused by the global pandemic and by a sharp decline in the on-trade sector. It is obvious that the beer sector in Serbia, although it experienced a decline in beer production and sales, **kept the number of employees directly in breweries**, where that number decreased by only 17 employees (from 1432 in 2019 to 1415 in 2020).

Figure 5.2.1: Total employment produced by beer



Sources: Calculations by Ernst & Young

Putting direct employment in breweries in relation to the total employment resulting from beer in the purchasing sector, on-trade and off-trade sector together, we can see how many additional jobs are created by one employee in the beer industry. In 2020, one employee in the beer industry created 8.03 additional jobs, while in 2019 the number of additional jobs is 9.95.

Figure 5.2.2: Additional jobs created per one employee in beer industry

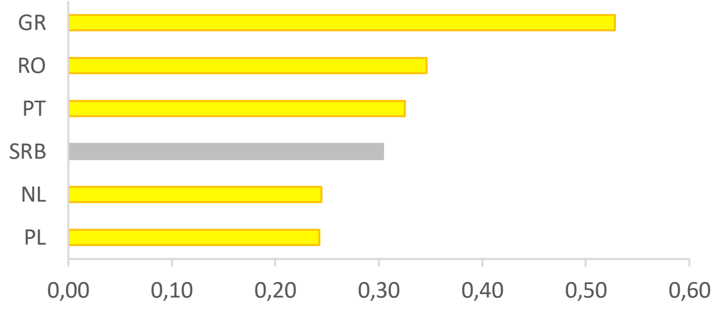
Jobs	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Additional jobs created	10,95	10,30	9,49	8,80	8,92	8,60	7,86	8,28	8,25	9,95	8,03

Sources: Calculations by Ernst & Young

5.3 Direct employment

Compared to 2010, the number of jobs in breweries decreased from 1,723 to 1,415 in 2020. If we take into account the direct employment that arises for every 1000 hectoliters produced, Serbian breweries created 0.30 jobs per 1000 hl in 2019 and 0.32 in 2020. The average number of direct employment per 1000 hectoliters in the European Union, according to the latest available data from 2018, is 0.35. However, countries in an environment with a similar level of GDP have a higher indicator of the coefficient of jobs created per hectolitre of beer.

Figure 5.3: Direct employment per 1000hl produced by countries in 2018.



Sources: Europe Breweries Statistics 2018. Edition, Calculations by Ernst & Young

5.4 Indirect employment

Figure 5.4.1: Inditect joba in Serbia by year

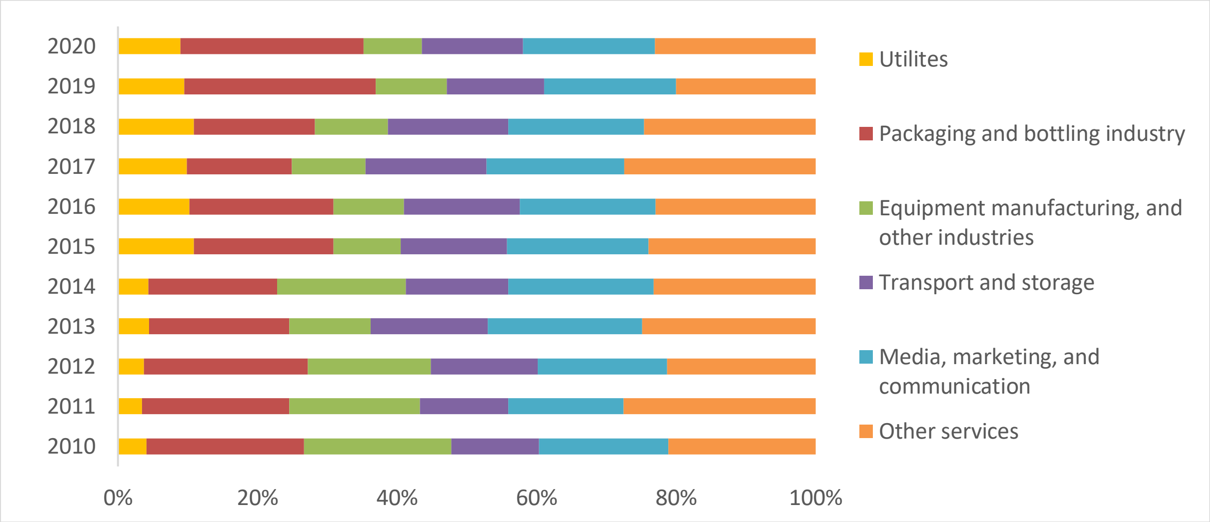
Jobs	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Agricultural products	388	336	378	389	323	319	278	278	263	257	229
Utilites	90	80	77	86	91	210	189	164	172	173	148
Packaging and bottling industry	498	488	485	393	382	385	383	250	274	496	435
Equipment manufacturing, and other industries	465	433	365	227	380	187	188	175	164	184	139
Transport and storage	275	291	317	328	303	293	307	289	272	253	240
Media, marketing, and communication	409	382	383	433	430	391	361	328	307	343	314
Other services	464	636	439	485	480	461	424	455	387	361	381
Total	**2.589**	**2.647**	**2.445**	**2.341**	**2.389**	**2.246**	**2.131**	**1.939**	**1.838**	**2.067**	**1.887**

Sources: Questionnaires, Calculations by Ernst & Young

The beer production sector also creates significant indirect employment in the economy. The production and sale of beer is possible only when different sectors provide the necessary goods and services, from beer barley to energy and transportation, and a variety of industrial products and services. The indirect effect is 1,887 jobs in the procurement sector in 2020 (8.72% less than in 2019 and approximately the same as in 2018). Most additional jobs arise in the packaging and bottling industry and other sectors. Indirect employment in 2020 is 229 jobs in the agricultural sector (10.19% less than in 2019), 314 jobs in the media, marketing and communications (8.60% less compared to 2019), 435 jobs in the packaging and bottling industry (12.29% less compared to 2019), 381 jobs in other service sectors (5.63% more compared to 2019), 240 jobs in the transport and storage sector (4, 89% less), 139 jobs in equipment and production (24.66% less) and 148 jobs in the utilities sector (14.07% less than in 2019).

See Annex III for more details on indirect employment arising in the supply sector due to the purchase of beer.

Figure 5.4.2: Indirect employment 2010 – 2020



Sources: Calculations by Ernst & Young

5.5 Induced employment

Figure 5.5: Induced Jobs in Serbia by year

Jobs	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
On-trade sector	14.272	13.159	12.225	11.094	11.335	11.436	9.560	9.837	9.852	10.282	7.540
Off-trade sector	2.011	2.107	1.970	2.008	1.906	2.046	1.923	1.916	1.944	1.901	1.937
Total employment due to beer	**16.283**	**15.266**	**14.195**	**13.101**	**13.241**	**13.482**	**11.483**	**11.753**	**11.796**	**12.183**	**9.477**

Sources: Questionnaires, Calculations by Ernst & Young

In addition to the direct and indirect impact of the beer sector on employment, the number of jobs created due to beer sales in the on-trade and off-trade sectors has an even greater effect. In fact, the brewing sector can be considered to have the greatest effect on employment in the on-trade segment.

On-trade sector

During 2020, about 7,540 of the total number of jobs in the on-trade sector can be attributed to beer sales. Other jobs created in the on-trade sector can be attributed to the sale of other products such as food, wine, spirits, coffee and tea. During 2019, approximately 10,282 jobs can be attributed to beer sales. The decrease in employment in the on-trade sector is influenced by demographic factors, but also by the change in the concept of work in catering facilities, i.e. less reliance on the workforce, but during 2020 also a strong impact of the effects of the global pandemic. There is a noticeable decline in employment of 26.67% in the on-trade segment when we compare 2020 and 2019, mostly caused by the new way of working and functioning of the on-trade segment.

Retail sector

During 2020, in the Serbian retail sector, almost 1,937 jobs can be fully attributed to beer sales, which is an increase of 1.86% compared to 2019, when 1,901 jobs could be attributed to beer sales, which there was a decrease of 2.19% compared to 2018. The increase in 2020 can be attributed to increased beer purchases in the retail sector and due to restrictions in the operation of the on-trade sector.

6 Purchases made by breweries

6.1 Highlights

A brief overview of brewery procurement in Serbia
In 2020, breweries in Serbia spent approximately € 137 million on goods and services to be able to produce and sell beer. In 2019, the value of their purchases was approximately 143 million €.
Most costs relate to agricultural products, packaging and bottling, production and equipment, media, marketing and communications.
Most purchases are from domestic suppliers.

Figure 6.1.1: Purchases made by breweries by sector

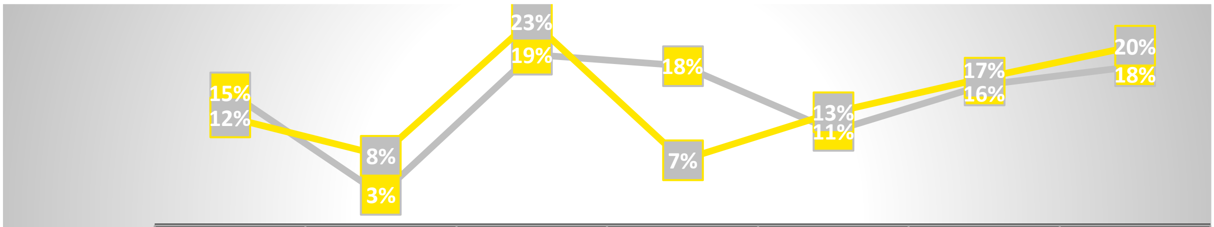
Sectors	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agricultural products	26.247	28.842	31.612	32.764	27.560	22.772	21.680	28.130	29.702	27.961	27.676
Utilites	3.931	4.650	4.667	4.920	5.358	6.868	6.460	5.079	5.414	6.204	5.644
Packaging and bottling industry	38.183	35.602	43.329	36.030	34.058	39.101	37.481	35.392	43.059	45.885	44.147
Equipment and manufacturing	24.544	25.316	21.528	15.206	25.186	13.101	13.654	12.755	12.735	13.603	10.318
Transport and storage	11.285	12.507	12.639	13.727	13.380	13.967	12.956	12.567	12.266	13.032	13.059
Media, marketing, and communication	22.294	22.269	21.162	22.762	23.186	22.035	21.955	20.101	20.104	25.387	24.427
Other services	11.804	16.966	10.592	11.134	11.181	10.987	10.680	11.671	10.588	11.261	12.240
Total	**138.289**	**146.152**	**145.529**	**136.543**	**139.909**	**128.832**	**124.866**	**125.695**	**133.869**	**143.333**	**137.510**

Note: all values are in € thousand
Sources: Questionnaires, Calculations by Ernst & Young

Looking at the overall procurement trend, there was a decrease compared to 2010, from 138 million € to 137 million €. Additionally, compared to 2020 and 2019, we can see a decline from 143 million € to 137 million €.

Also, in Figure 6.1.2. can be seen in the structure of procurement and services used in production in 2010 and 2020 and changes between the two periods.

Figure 6.1.2: Goods and services used in production



	Agricultural products	Utilities	Packaging and bottling	Equipment and manufacturing	Transport and storage	Media, marketing, and communication	Other services
2010	15%	3%	19%	18%	11%	16%	18%
2020	12%	8%	23%	7%	13%	17%	20%

6.2 Purchases of goods and services

In 2020, breweries in Serbia spent a total of 137 million € on goods and services to be able to produce and sell beer in Serbia and abroad. Approximately 88% of brewery purchases were made in Serbia, which is a great stimulus for the Serbian economy.

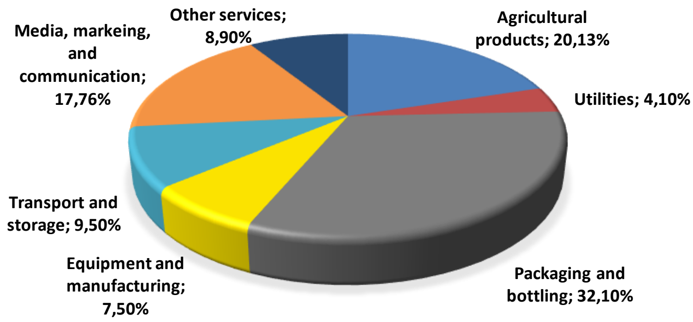
Figure 6.2.1: Impact on suppliers in 2020.

Sectors	Total purchase	% spent in Serbia	Purchase in Serbia
Agricultural products	27.676	82%	22.805
Utilities	5.644	99%	5.611
Packaging and bottling	44.147	73%	32.285
Equipment and manufacturing	10.318	100%	10.315
Transport and storage	13.059	99%	12.982
Media, marketing and communications	24.427	99%	24.283
Other services	12.240	99%	12.167
Total	**137.510**	**88%**	**120.488**

Note: all values are in € thousand
Sources: Questionnaires, Calculations by Ernst & Young

As presented in the chart below, it is evident that the packaging and bottling sector has the largest share in total procurement with 32%, followed by the agricultural sector with 22% and the media, marketing and communications sector with 15%.

Figure 6.2.2: Share in the supply sector in 2020.



In 2019, breweries in Serbia spent a total of 143 million € on goods and services to be able to produce and sell beer in Serbia and outside Serbia. Compared to 2018, there was an increase of about 7.07% of total procurement. Approximately 90% of brewery purchases in 2019 were made in Serbia.

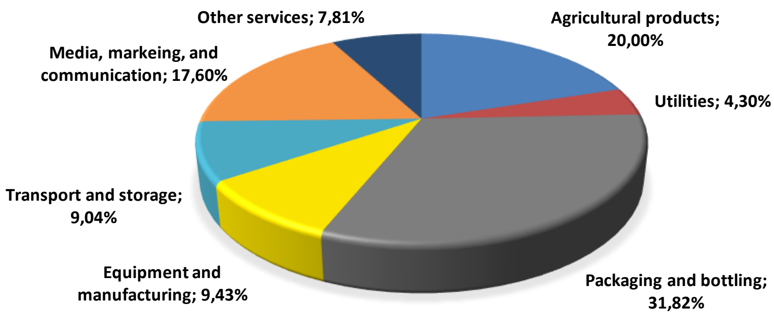
Figure 6.2.3: Impact on suppliers in 2019

Sectors	Total purchase	% spent in Serbia	Purchase in Serbia
Agricultural products	27.961	84%	23.546
Utilities	6.204	100%	6.204
Packaging and bottling	45.885	80%	36.566
Equipment and manufacturing	13.603	100%	13.659
Transport and storage	13.032	100%	13.032
Media, marketing and communications	25.387	100%	25.387
Other services	11.261	100%	11.261
Total	**143.333**	**90%**	**129.654**

Note: all values are in € thousand
Sources: Questionnaires, Calculations by Ernst & Young

As in 2020, the packaging and bottling sector has the largest share in procurement in 2019 with 32%, followed by the agricultural sector with 19% and the media, marketing and communications sector with 18%.

Figure 6.2.4: Share in supply sector in 2019.



6.3 Impact on the agricultural sector

In terms of value, the procurement of raw materials and agricultural ingredients represents about 20% of the total cost for beer producers in Serbia. We estimate that in 2020, the value of expenditures on agricultural products was over € 27 million, of which € 23 million was spent in Serbia.

The use of agricultural products is at a high level, since beer is a natural drink, made from malted cereals (mainly barley malt), hops, yeast and others. Of all agricultural inputs, malt from beer barley is the most important ingredient in beer.

Figure 6.3.1: Impact on the agricultural sector in Serbia in 2019

Agricultural product	Total purchase	% spent in Serbia	Purchase in Serbia
Malt	17.574	92%	16.175
Hops	1.734	1%	15
Others	1.352	47%	630

Note: all values are in € thousand
Sources: Questionnaires

Figure 6.3.2: : Impact on the agricultural sector in Serbia in 2020

Agricultural product	Total purchase	% spent in Serbia	Purchase in Serbia
Malt	17.542	98%	17.114
Hops	1.863	6%	112
Others	1.281	39%	501

Note: all values are in € thousand
Sources: Questionnaires

7 Comparative analysis of price and excise duties

The next part of the study compares beer prices, the burden of excise duties on beer prices and the average income between Serbia and the 27 EU countries. The analysis is composed of two phases:

- First phase: compares **the total burden of excise duties** on the price of beer, **the average price of beer, the average monthly income** of individuals and families **and the share of total excise duties** in the price of beer between countries,,
- Second phase: **ranks countries** in the previously mentioned categories and determines the **degree of disagreement** between average monthly income and the share of excise duty in the price of beer for each country.
- Third phase: gives a brief overview of the system of calculation and collection of excise duties in Serbia and EU countries..

The main conclusions of the analysis are that:

- Serbia has **relatively low wages** and **high excise** taxes compared to the 27 EU countries..
- Serbia has **the third largest negative abyss** between average revenues and excises in on-trade beer prices within compared countries.
- Serbia has **second negative abyss** between average monthly revenues and excises in off-trade beer prices within compared countries.
- In Serbia, the method of calculation of excise duties differs significantly in relation to the applied methods of calculation in other countries of the European Union.

Ranks are determined so that low rank represents a high parameter value and conversely, high rank represents a low parameter value. For example, Finland is ranked 1st in the average price of beer, which means that it has the highest average price of beer in the on-trade and off-trade markets. On the other hand, Slovakia is ranked 28th in relation to the same parameter, which means that it has the lowest price of beer.

7.1. Excise duty and total Excise duty

Beer, as an alcoholic beverage, is subject to taxation in two ways: excise and VAT.

Excise taxes are specific taxes that are based on the amount of alcohol in the drink. It is the absolute amount of money per unit of alcohol contained in a drink. They are not affected by product prices. For example, for the same amount of beverages the same amount of excise duty is paid regardless of whether it is sold in the off-trade sector or consumed within a public place or bar.

VAT is an ad valorem tax that is levied as a% (currently 20% in Serbia) of sales value or price. As the price of alcohol rises, the absolute value of VAT automatically increases as VAT is paid on the value / price of the product. The same VAT rate is charged for different types of drinks.

VAT is charged on the price of beer that includes excise duties. It follows that the growth of excise causes a rise in price, and then 20% growth in excise. There are different levels of excise duty for different categories of beverages.

As an input for excises and VAT, we used the table of excises of the **Taxation and Customs Union (EU) published on July 1, 2020**. The excise table contains the structure of excise duties on alcohol and alcoholic beverages, the categories of alcohol and alcoholic beverages that are subject to excise tax recalculation, and the basis on which excise duties are calculated for all EU countries.

7.2. Average on-trade and off-trade price of beer

Table 7.0 shows the average beer prices, excise duties and the ranks of the EU and Serbia. The calculation is explained in the following chapters with a graphical presentation. Countries are sorted by real GDP per capita.

Figure 7.0: Excise and total excise per 1l of beer (€)

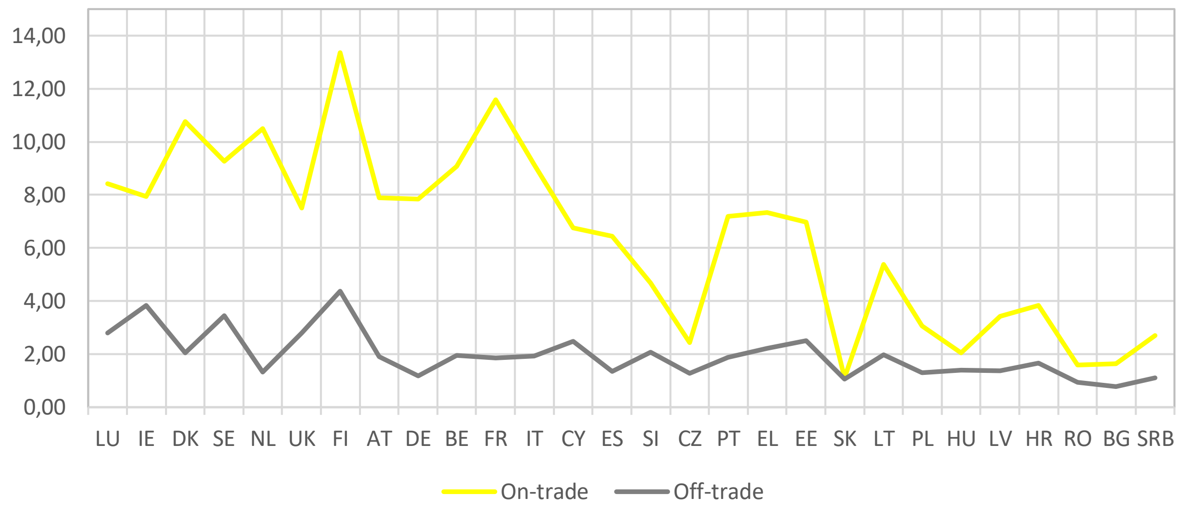
Country	Real GDP per capita	Excise per 1l of beer	Total excise burden per 1l of beer	Average on-trade price	On trade rank	Average off-trade price	Off trade rank
Luxembourg	81.290	0,10	0,11	8,41	8	2,80	5
Ireland	61.560	1,13	1,39	7,93	9	3,83	2
Denmark	47.980	0,33	0,41	10,76	3	2,06	10
Sweden	42.370	0,93	1,17	9,27	5	3,45	3
Netherlands	40.070	0,53	0,64	10,49	4	1,33	21
United Kingdom	36.802	1,07	1,29	7,51	12	2,81	4
Finland	36.140	1,83	2,26	13,36	1	4,37	1
Austria	35.490	0,24	0,29	7,89	10	1,90	14
Germany	34.060	0,09	0,11	7,85	11	1,18	24
Belgium	33.500	0,24	0,29	9,09	7	1,94	12
France	30.480	0,38	0,46	11,58	2	1,85	16
Italy	24.640	0,36	0,44	9,15	6	1,93	13
Cyprus	23.050	0,30	0,36	6,75	16	2,48	7
Spain	22.300	0,45	0,54	6,43	17	1,36	20
Slovenia	19.420	0,61	0,74	4,67	19	2,08	9
Czech Republic	17.260	0,15	0,18	2,43	24	1,27	23
Portugal	17.180	0,63	0,77	7,18	14	1,88	15
Greece	16.300	0,60	0,74	7,33	13	2,21	8
Estonia	15.250	0,64	0,76	6,98	15	2,51	6
Slovakia	15.010	0,18	0,22	1,11	28	1,07	26
Lithuania	13.890	0,36	0,43	5,37	18	1,97	11
Poland	12.660	0,23	0,29	3,06	22	1,30	22
Hungary	12.630	0,24	0,31	2,04	25	1,39	18
Latvia	12.130	0,39	0,47	3,43	21	1,37	19
Croatia	11.460	0,27	0,34	3,85	20	1,66	17
Romania	8.780	0,09	0,11	1,58	27	0,94	27
Bulgaria	6.600	0,09	0,11	1,64	26	0,78	28
Serbia	5.410	0,22	0,26	2,70	23	1,10	25

The amount of the total excise burden is the amount of excise duty per liter of beer plus the amount of VAT charged on the price including excise duty and therefore differs from the level of excise duty per 1 liter of beer.

Among the compared countries, the highest total amount of excise duty, of € 2.26 per 1l of beer, is in Finland, and the lowest, of € 0.11, in several countries. The average value of excise duties is € 0.55 in Spain. In the case of Serbia, the total amount of excise duty per 1 liter of beer is € 0.22, which puts it in 23rd place out of 28 countries.

For the average price of beer in European countries, we used the EY study "Contribution of Beer to the European Economy 2016". Due to the lack of recent data, we had to estimate beer prices for 2020 using the harmonized index of consumer prices of beer (HIPC). (2015 = 100).

Figure 7.1: Average beer price 1l (€)



The highest on-trade price of 1l of beer is in Finland (€ 13.36) while the lowest is in Slovakia (€ 1.11). The on-trade price of 1 liter of beer in Serbia for 2020 averaged € 2.70, which puts Serbia in 23rd place out of 28 countries.

As for the off-trade price of 1l of beer, Finland also has the highest price of € 4.37 while Bulgaria has the lowest price of € 0.78. The average off-trade price of 1l of beer in Serbia in 2020 was € 1.10, which puts Serbia in 25th place out of 28 countries.

7.3. Share of total excise duty burden in beer price

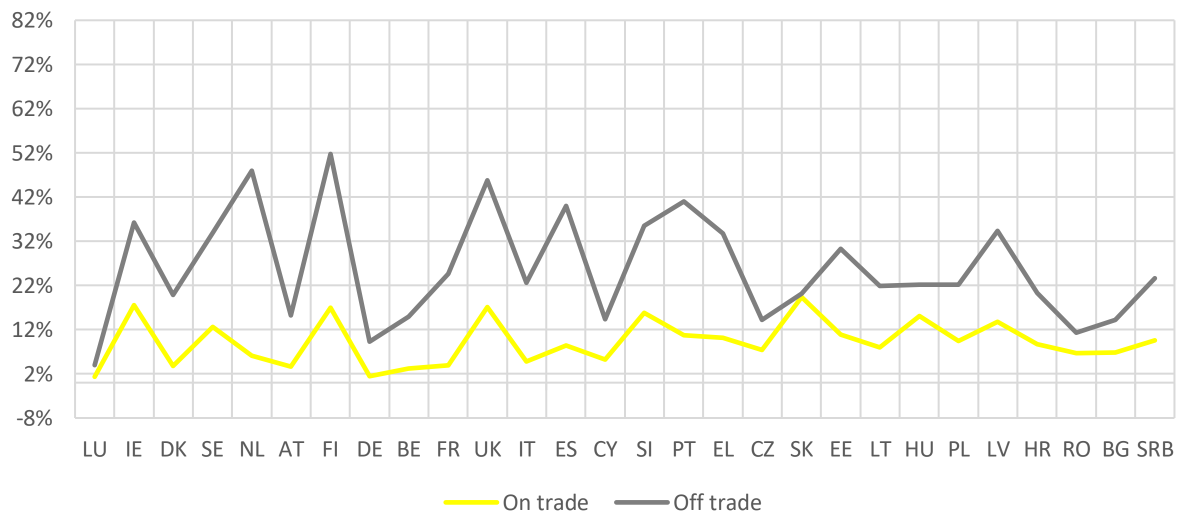
Combining data for total excises and average beer prices of compared countries, we recalculated the share of total excises in beer prices. These parameters directly show how much the price of beer is burdened with excise. Countries are ranked according to GDP per capita.

Figure 7.2: Share of total excise duty in beer price

Countries	Real GDP per capita	Excise per 1l of beer	Share of total excise duty in on-trade price	Rank on-trade	Share of total excise duty in off-trade price	Rank off-trade
Luxembourg	81.290,00	0,10	1%	28	4%	28
Ireland	61.560,00	1,13	17%	2	36%	6
Denmark	47.980,00	0,33	4%	24	20%	20
Sweden	42.370,00	0,93	13%	8	34%	9
Netherlands	40.070,00	0,53	6%	20	48%	2
Austria	35.490,00	0,24	4%	25	15%	21
Finland	36.140,00	1,83	17%	4	52%	1
Germany	34.060,00	0,09	1%	27	9%	27
Belgium	33.500,00	0,24	3%	26	15%	22
France	30.480,00	0,38	4%	23	25%	12
UK	36.802,00	1,07	17%	3	46%	3

Italia	24.640,00	0,36	5%	22	23%	14
Spain	22.300,00	0,45	8%	15	40%	5
Cyprus	23.050,00	0,30	5%	21	14%	23
Slovenia	19.420,00	0,61	16%	5	36%	7
Portugal	17.180,00	0,63	11%	10	41%	4
Greece	16.300,00	0,60	10%	11	34%	10
Czech	17.260,00	0,15	7%	17	14%	24
Slovakia	15.010,00	0,18	19%	1	20%	19
Estonia	15.250,00	0,64	11%	9	30%	11
Lithuania	13.890,00	0,36	8%	16	22%	17
Hungary	12.630,00	0,24	15%	6	22%	15
Poland	12.660,00	0,23	9%	13	22%	16
Latvia	12.130,00	0,39	14%	7	34%	8
Croatia	11.460,00	0,27	9%	14	20%	18
Romania	8.780,00	0,09	7%	19	11%	26
Bulgaria	6.600,00	0,09	7%	18	14%	25
Serbia	5.410,00	0,22	10%	12	24%	13

Figure 7.3: The share of total burden of excise in beer price



The graph shows the share of excise duties in the on-trade price of beer, which is the lowest in Slovakia at 20%, while the largest share in the off-trade price of 52% was in Finland. In the case of Serbia, the share of excise duties in the price of beer for on-trade is 10% and 24% for off-trade. This puts Serbia in 12th and 13th place compared to other countries.

If we compare the ranking of the average price of beer and the share of excise duties in the price, we can conclude that although Serbia has relatively low prices compared to EU countries, prices are burdened with excise duties.

In particular, if we compare the excise burden of beer with neighboring countries, as countries with which Serbia can be compared to some extent in terms of GDP, we can conclude that the excise burden in Serbia is significantly higher than in Bulgaria and Romania, and slightly higher than in Croatia.

The excise burden in Hungary is higher than in Serbia, but the level of development of the Hungarian economy is by far the highest in the region.

7.4. Average monthly incomes

In order for average beer prices and the share of excise duties to be adequately compared between countries, we had to include an indicator of average purchasing power. For these purposes, we used the average monthly income of the next two groups:

- **Individual** – individual
- **Family** – both spouses employed, with two children

Average monthly income represents the total disposable income of a household by adding the personal income of all household members and income received at the household level. Household income includes:

- All income from work (earnings of employees and earnings of the self-employed);
- Private investment and property income;
- Transfers between households;
- All social transfers received in cash, including old-age pensions.

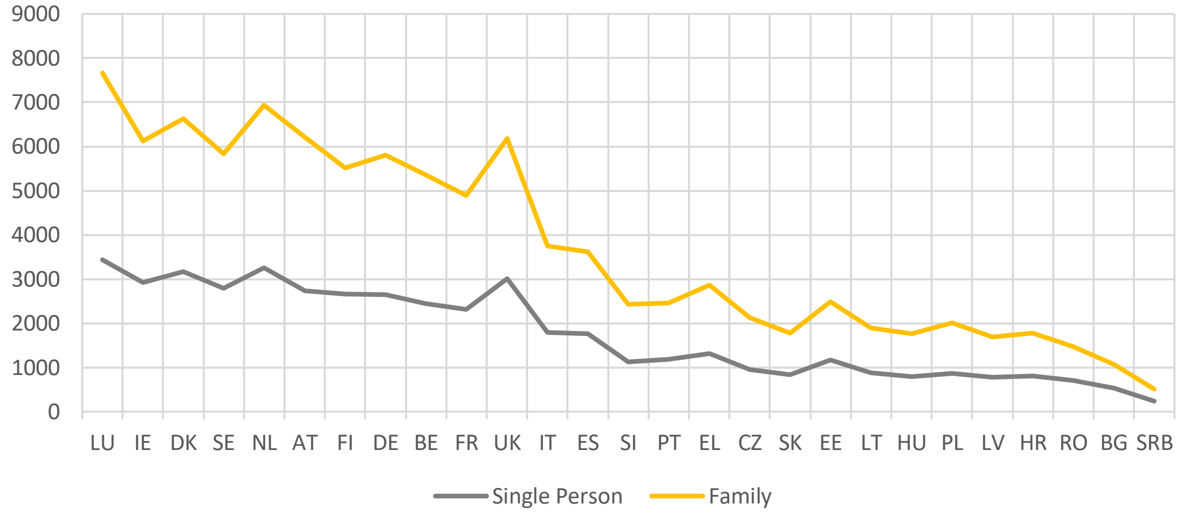
Keep in mind that Cyprus was excluded from the analysis of average monthly income due to the unavailability of relevant data as well as a sufficient series of data.

Figure 7.4: Average monthly income (€)

	Real GDP per capita	Excise per 1l of beer	Average income of a single person	Income of a single person rank	Average income of a family	Income of a family rank
Luxembourg	81.290	0,10	3.437	1	7.664	1
Ireland	61.560	1,13	2.925	5	6.129	6
Denmark	47.980	0,33	3.165	3	6.623	3
Sweden	42.370	0,93	2.789	6	5.831	7
Netherlands	40.070	0,53	3.257	2	6.934	2
Austria	35.490	0,24	2.734	7	6.209	4
Finland	36.140	1,83	2.661	8	5.521	9
Germany	34.060	0,09	2.653	9	5.801	8
Belgium	33.500	0,24	2.449	10	5.349	10
France	30.480	0,38	2.314	11	4.891	11
UK	36.802	1,07	3.004	4	6.178	5
Italy	24.640	0,36	1.789	12	3.751	12
Spain	22.300	0,45	1.770	13	3.619	13
Slovenia	19.420	0,61	1.128	17	2.426	17
Portugal	17.180	0,63	1.179	15	2.458	16
Greece	16.300	0,60	1.314	14	2.867	14
Czech	17.260	0,15	952	18	2.127	18
Slovakia	15.010	0,18	842	21	1.778	21
Estonia	15.250	0,64	1,171	16	2.492	15
Lithuania	13.890	0,36	879	19	1.898	20
Hungary	12.630	0,24	791	23	1.771	23
Poland	12.660	0,23	867	20	2.012	19
Latvia	12.130	0,39	777	24	1.698	24

Croatioa	11.460	0,27	806	22	1.773	22
Romania	8.780	0,09	708	25	1.478	25
Bulgaria	6.600	0,09	532	26	1.068	27
Serbia	5.410	0,22	511	27	1.095	26

Figure 7.5: Average monthly incomes (€)



The highest average monthly incomes for both groups, an individual and a family, are in Luxembourg, while the lowest are in Romania. Serbia is ranked 27th out of 27 for the average monthly income of an individual and 26th for the average monthly income of a family.

If we connect the ranking of Serbia for average monthly income and the share of excise duties in the price of beer, we can see that Serbia is among the countries with the lowest purchasing power and the highest total excise duties on beer.

7.5. Rankings comparison

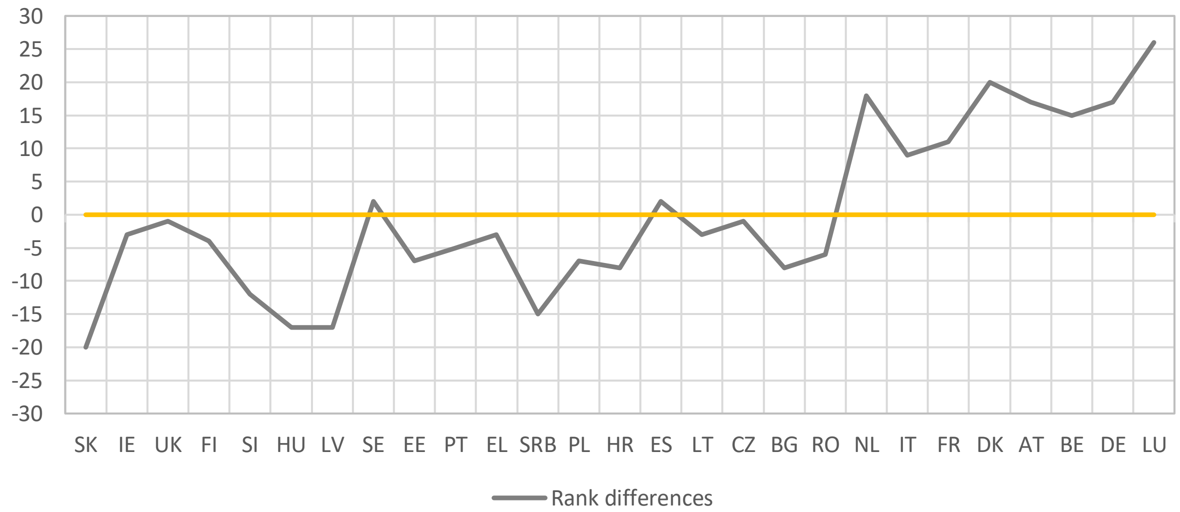
As mentioned earlier, countries are ranked so that the highest rank is associated with a low parameter value, while the low rank is associated with a high parameter value. For example, if a country is ranked 1st for average monthly income which means it has the highest purchasing power and vice versa. If a country is ranked 27th it means it has the lowest purchasing power of the 27 countries being compared.

Keep in mind that Cyprus was excluded from the analysis of average monthly earnings due to unavailability of data.

Figure 7.5.1: Country rankings

The graph above shows that Serbia belongs to the group of countries with a higher rank of average monthly incomes of individuals than the ranking of the share of excise cargo in the on-trade price of beer. In other words, Serbia has a relatively low disposable income and high excise duties on the on-trade price of beer compared to the 27 EU countries.

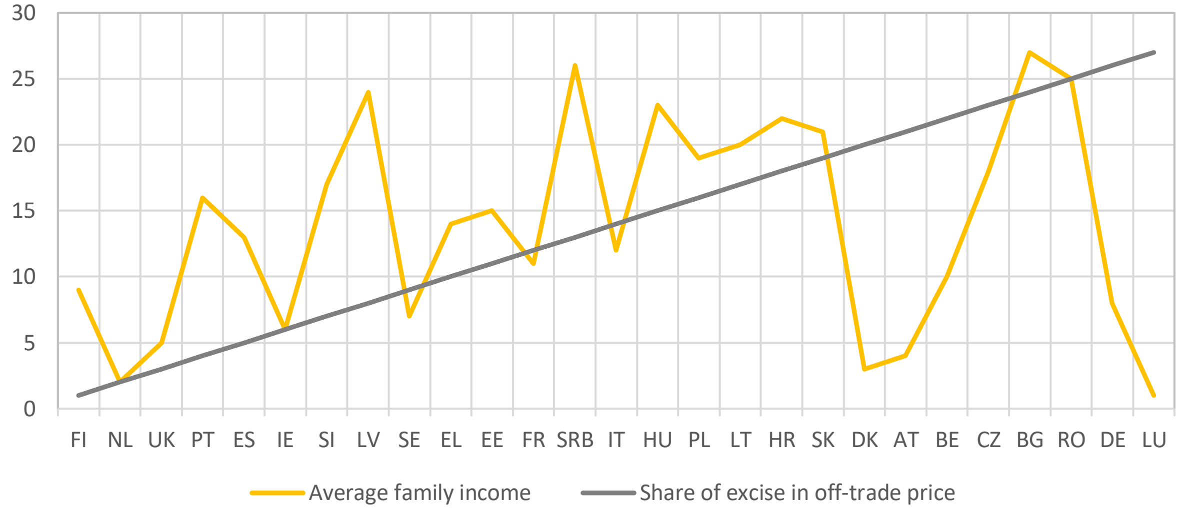
Figure 7.5.2: Differences in rankings



The graph above shows the magnitude of the difference in ranking between the monthly earnings of individuals and the share of the excise burden in the on-trade price of beer.

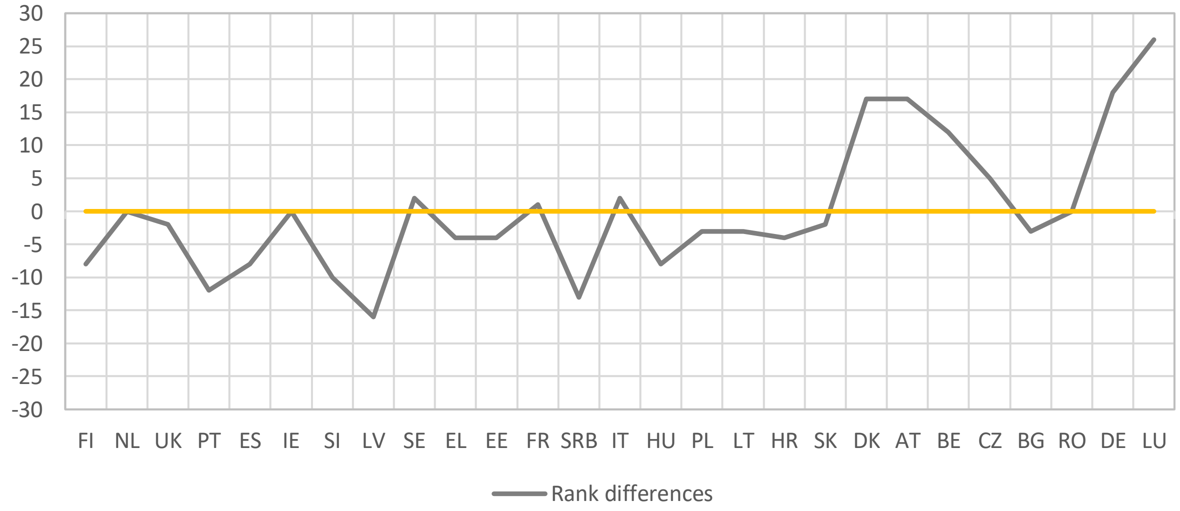
The main conclusion is that Serbia has the largest negative gap, after Hungary, Slovakia and Latvia, which means that the difference between income and the burden of excise duties in Serbia is the fourth largest among the compared countries. Of all the EU countries, Sweden and Estonia stand out the most, where the rank of the excise tax burden corresponds to the rank of the average income of an individual.

Figure 7.5.3: Country rankings



From the graphs above, we can see that Serbia belongs to the group of countries that have a higher rank of family average monthly income than the share of the share of excise cargo in the off-trade price of beer. This leads to the conclusion that Serbia has a relatively low level of salaries and high excise taxes compared to the 27 EU countries.

Figure 7.5.4: Differences in rankings



The graph above depicts magnitude of ranking discrepancy between family average monthly income and share of excise duty burden on off-trade price of beer.

The main conclusion is that Serbia, Latvia and Portugal have the largest negative gap, which means that the difference between income and the burden of excise duties in both countries is among the largest in the 27 EU countries.

7.6. Calculation methods and excise duty

In Serbia, the Law on Excise Duties prescribes the calculation and payment of excise duty per liter of beer that is placed on the market (for local consumption).

n the European Union, the method of calculation and collection of excise duty on beer is regulated by the Directive on excise duties on alcohol and alcoholic beverages (92/84 / EEC) from 1992. The directive prescribes two ways to calculate the excise duty on beer:

1. Based on extract level (expressed as degree Plato)
2. Based on degree of alcohol

That Directive stated as follows:

The minimum level of excise duty on beer is fixed at:

1. 0,748 € per HL/degree Plato or
2. 1,87 € per HL/percentage alcohol.

Therefore, we can conclude that the existing beer excise calculation method in Serbia does not comply with beer excise calculation method in the European Union, and it is reasonable to expect a change in the manner of excise calculation in the process of accession to the European Union.

In this section, we will give a brief analysis of the potential effects of the excise calculation method based on the extract level (i.e. Plato level).

Excise duty calculation based on degree Plato involves determining the basic amount of excise for the basic degree Plato. Also, the system involves increasing the level of excise on a higher degrees Plato, and reducing the level of excise duty on lower degree Plato.

Based on the characteristics of the beer production process, it can be concluded that degree Plato is stable. Plato is embedded in every beer process and recipe - the degree of extract is a unique feature of beer. More than 99% of brewery brands in the Serbian market fall under the category Pt 9 º- 13.5 º.

Therefore, by changing the beer excise calculation method with the application of the degree Plato 9º - 13.5º as the basis for the calculation, the identical level of excise duty would be charged in relation to the existing one. Also, the introduction of degree Plato would allow greater certainty in planning the amount of excise revenues in relation to excise that would be calculated against the percentage of alcohol, since the percentage of alcohol can be changed.

In July 2020, the degree Plato method was present in more than half of observed European countries: Austria, Belgium, Bulgaria, Czech Republic, Germany, Greece, Spain , Italy, Luxembourg, Malta, Netherlands, Poland, Portugal and Romania.[1]

Notwithstanding the excise calculation method, one of EY studies conducted in previous years found that a constant increase of excise duties on alcohol can adversely affect number of economic indicators that have been discussed in this study. Namely, the research concluded that due to the increase of excise duties in Nordic countries, the government didn’t achieve desired effects in its revenues, and in some countries, the state revenues generated by the beer sector also decreased.

There was an increase in the “cross-border shopping for beer” and the illegal trade of all excise goods, which consequently led to a decrease in government revenues.

[1] In collaboration with the Member States, the European Commission has established the "EXCISE DUTY TABLES" showing rates in force in the Member States of the European Union

Annex I: Methodology and Scope

This study provides an overview of the economic impact of the brewing sector in Serbia during the period from 2010 to 2020.

Outcomes, provided by this study, are based on calculations done by Ernst & Young. Having this in mind, these outcomes do not represent the true state and should be seen as approximations that depend on decisions made by Ernst & Young. For further explanation, please see Annex **III**.

Economic impact of brewing sector in Serbia can be divided in three different effects:

- The **direct impact** represents the effect generated directly by the brewing sector.
- The **indirect impact** represents the impact of breweries on their suppliers. Breweries need to purchase a diverse range of goods and services from different industry suppliers in order to produce the beer, such as: barley malt, hops, water and many types of packaging materials such as plastic, glass and aluminum. Services of engineers, marketers, communications agencies and other experts are used by breweries. This study distinguishes following seven supply sectors: agriculture, utilities, packaging and bottling industry, transport and storage, media, marketing and communication, equipment, manufacturing and other industrial activities as well as other services.
- The **induced impact** refers to economic contribution of firms in the retail and hospitality sectors arising from the sale of beer.

The direct, indirect and induced impact on economy are further measured in areas of employment, value-added and government revenues.

Figure I: Dimensions for measuring the economic impact

Dimension	Direct impact	Indirect impact	Induced impact
Employment	Total number of jobs in the brewing sector	Total number of jobs in supply sectors resulting from the production and sale of beer	Total number of jobs in hospitality and retail sector resulting from the sale of beer
Value-added	Value-added by brewing companies	Value-added in supply sectors resulting from the production and sale of beer	Value-added in the hospitality and retail sector resulting from the sale of beer
Government revenues	Production and sale of beer and income tax and social contributions from employers and employees in the brewing industry, those influence on excise revenues	Income tax and social contributions from employers and employees in supply sectors.	VAT revenues, income tax and social contributions from employers and employees in the hospitality and retail sector resulting from the sale of beer and corporate and other taxes

Annex II: Data Sources

The results presented in this report derive from multiple data sources. In hierarchical order of importance these sources are:

- Data collected directly from individual beer producers in Serbia through a detailed questionnaire
- Data from the Serbian Statistical Office (RZS);
- Data from Center for Advanced Economic Studies (CEVES);
- Data from additional (public) sources, such as European Breweries, Eurostat, European Commission and similarly.

Questionnaires

The three largest beer producers in Serbia, Heineken, Carlsberg and Molson, completed the detailed questionnaire that contain key figures about the company production, costs of inputs and taxes, charged prices and employees in a period from 2010 to 2020.

Serbian Statistical Office

While specific data from the beer sector were collected through questionnaires completed by the Association of Brewers of Serbia and beer producers, general economic data were collected from the Republic Bureau of Statistics. The Institute provided us with data until 2019, such as statistical and economic indicators including turnover and number of employees by sectors in Serbia.

Center for Advanced Economic Studies

Due to specific structure of agriculture industry there are no publicly available data that we could use for our study. Therefore CEVES provided to us values of key agriculture parameters in period from 2015 to 2020.

European Brewers Association

In addition to the information from the questionnaires, statistics provided by The Brewers of Europe have been used. These statistics consisted of general information on the beer industry in European countries, for example: data on production, consumption and direct employment in the brewing sector.

Data projection

Given the period of preparation of the study during March 2021, a certain set of data used in the preparation of the study for 2020 was not available by the RZS, the Association of Brewers of Europe and Eurostat, so data projections were made based on time series from 2010 to 2019. In this way, the following data projections were made::

- Turnover per person in paid employment in Serbia, Value added per person in paid employment in Serbia and Average costs of persons in paid employment in Serbia by sector for 2020 using the geometric mean and based on data from previous years,,
- Population in Serbia for 2020 based on the projection of the linear trend of the population in Serbia,
- Gross domestic product in current prices in Serbia for 2020 based on the announcement of the RZS on the growth rate in 2020,
- Retail prices in the on-trade and off-trade segment were provided by breweries based on their market research.

In addition, based on the latest available data on the agricultural sector in Serbia, the data for the period 2015-2020 were supplemented, which may lead to changes in the aggregate data that use values by categories of business sectors as input.

Annex III: Variables and Estimates

The presented results are reliable as the calculations are based on primary data from the largest beer producers in Serbia and statistics of Serbia. Some of the reported outcomes concerning the economic impact of the brewing sector are based on estimates. These estimates derived from a model constructed by Ernst & Young. We illustrate here how these variables have been estimated, focusing on:

- Employment effects
- Value-added due to the production and sale of beer
- Government revenues due to the production and sale of beer

Employment effects

The direct employment effect signifies the number of people employed in the brewing sector. The data on direct employment was obtained from the questionnaire for the beer producers.

The **indirect employment** effect concerns the employment generated in the supply sectors due to the production and sale of beer. The starting point of the estimates on indirect employment is the impulse in supply sectors resulting from purchases made by the brewing sector. Indirect impulse can be captured by summing all costs that breweries paid to suppliers and differentiating them into different industry sectors. Once indirect impulse of each sector is quantified we divided it with parameter “average turnover per employee” in order to calculate indirect employment per each sector. Values of average turnover per employee per sector were acquired from RZS for period between 2010 and 2019. Summing indirect employment of each sector give us total indirect employment. In this study we have identified seven different sectors but since RZS follows local activity segmentation (KD2010) we had to do following mapping of sectors:

- Agriculture (A - agriculture, forestry and fishing),
- Utilities (E - Water supply; wastewater management, process control waste management and remediation activities and D - Electricity, gas, steam and air conditioning supply),
- Packaging and bottling industry and manufacturing and equipment (C - Manufacturing),
- Transport and storage (H - Transportation and storage),
- Media, marketing and communications (J - Information and communication),
- Other services (L - Real estate, M - Professional, scientific and technical activities and N - Administrative and support service activities).

It is important to note that agricultural data and parameter values are not made available by RZS. Therefore we CEVES has provided us with data for agriculture for all parameters used in study.

The **induced employment** effect, resulting in employment due to the sale of beer in the hospitality sector and in retail is estimated in a similar way as indirect employment. The starting point of the estimates on induced employment is the value of beer consumption. Important note is that when calculating induced employment this study takes into account only consumption of locally produced beer. Data from questionnaires was used to calculate value of beer consumption for on and off-trade channels. Next two steps are to estimate consumption spending’s ex VAT for both channels and to divide them by adequate average turnover per employee. As before, values of average turnover per employee are acquired from RZS. Industry sectors used for on-trade and off-trade channel are I –

Accommodation and food services and G - Wholesale and retail trade; repair of motor vehicles and motorcycles, respectively. This approach gave us estimates for number of jobs generated on on-trade and off-trade channels. Summing them give us total induced employment effect.

Value-added due to the production and sale of beer

The **direct value-added** in the brewing sector is obtained through the questionnaires completed by breweries, CEVES data, and The Serbian Statistical Office.

Indirect and induced value-added, i.e. the value-added resulting from the production and sale of beer, is estimated by multiplying value-added per person employed for each supply sector, on-trade and off-trade channel with previously estimated number of jobs generated in these sectors. Value-added per person employed values are obtained from RZS and CEVES. Adding value-added of brewing sector, estimated using questioners, to indirect and induced value-added give us total value-added due to production and sale of beer.

Government revenues due to the production and sale of beer

The government revenues due to the brewing industry consist of five segments::

- Data on **excise revenues** and **other taxes** obtained from the questionnaires.
- **VAT revenues** resulting from the sale of beer are calculated by multiplying the consumer spending on beer on-trade and off-trade (ex VAT) with the applicable VAT rate.
- **Income-related revenues** for breweries is obtained from the questionnaires while revenue from supply sector, hospitality and retail have been estimated by multiplying personnel costs with implicit tax rates. The personnel costs in the brewing industry were obtained from RZS and CEVES. Personnel costs in supply sectors, hospitality and retail were calculated by multiplying indirect and induced employment by the mean personnel costs per person employed. Tax rates on labor were obtained from Law on Personal Income Tax and Law on Mandatory Social Insurance. The implicit tax rate is the percentage of personnel costs which consists of taxes and social contributions. It consists of three parts: mean ratio of 1) income tax, 2) social contributions paid by employees and 3) social contributions paid by employers.

Annex IV: Exchange rates

Since most data sources used for the study apply to the period from 2008 to 2019, the average annual exchange rates have been used for the majority of data calculations.

Figure IV: Exchange rate sused in the report

Exchange rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RSD/EUR	103,04	101,97	113,04	113,09	117,25	120,74	123,10	121,40	118,28	117,86	117,58

Source: National Bank of Serbia

EY | Assurance | Tax | Transactions | **Advisory**

About EY

EY is a global leader in assurance, tax, transaction and advisory services. Worldwide, our 210,000 people are united by our shared values and an unwavering commitment to quality. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. We make a difference by helping our people, our clients and our wider communities achieve their potential.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com.

Ernst & Young d.o.o. Beograd

Antifašističke borbe 13A, 11070 Belgrade, Serbia.

Published in the Republic of Serbia.

www.ey.com/rs