

THE DYNAMICS OF THE EUROPEAN AND ROMANIAN BEER MARKETS: CONSUMPTION, PRODUCTION, AND MARKET EVOLUTION

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Abstract

The purpose of this paper is to analyze the dynamics of the Romanian beer market during the period 2019–2023, in the broader context of European trends. The study relies on official statistical data from national and international sources, applying quantitative methods such as time series analysis, growth indices, the coefficient of variation, Compound Annual Growth Rate (CAGR), and the Pareto cumulative method. In addition, a SWOT framework was employed to evaluate the internal strengths and weaknesses of the sector, alongside external opportunities and threats. The results highlight a moderate but steady decline in Romania's key market indicators—consumption, production, imports, and exports—registering annual decreases between -1% and -4%. Despite this contraction, Romania remains among the top beer consumers in Europe, with an average of approximately 85 liters per capita. Production, averaging 16 million hectoliters annually, has ensured strategic self-sufficiency, while imports (mainly from EU countries) reflect consumer demand for diversification rather than production deficits. Exports, however, remain marginal and highly volatile. The analysis further shows that the HoReCa sector was severely affected by the pandemic, while fiscal pressure (notably the 2022 excise duty increase) negatively influenced demand. Conversely, segments such as craft, premium, and non-alcoholic beers recorded growth, driven by urban demand, digitalization, and health-oriented consumption trends. The study concludes that, although challenged by economic pressures and regulatory constraints, the Romanian beer industry demonstrates resilience and adaptive capacity. Strategic directions include portfolio diversification, digital channel development, promotion of sustainability, fiscal dialogue with policymakers, and targeted expansion into external markets.

Key words: beer market, Romania, beer consumption, beer production, imports, exports, SWOT analysis, CAGR, Pareto method

INTRODUCTION

The European brewing industry reflects the cultural, economic, and social transformations shaping the continent. In the face of major challenges – from the global pandemic to economic instability and armed conflicts – its role and relevance are increasingly evident. Agriculture underpins the brewing value chain, as key raw materials – barley, malted barley, and hops – are cultivated primarily for beer production. Barley and malted barley are converted into malt, the main source of fermentable sugars, while hops provide bitterness and stability. Consequently, agricultural performance directly determines the volume, quality, and continuity of brewing output.

Beer is a fermented alcoholic beverage produced from water, malt (usually barley), hops, and yeast (*Saccharomyces cerevisiae* or *S. pastorianus*). It is one of humanity's oldest fermented products, documented in ancient Mesopotamia (~5,000 BC) [1]. Beer contains over 800 volatile compounds, with its nutritional profile shaped by raw materials, yeast metabolism, and storage [23]. Moderate consumption has been linked to improved HDL cholesterol, endothelial function, and lower inflammatory markers while hop-derived polyphenols enhance antioxidant capacity and may reduce oxidative stress. Conversely, chronic excessive intake contributes significantly to alcoholic liver disease, due to caloric density and consumption volume [29].

The brewing industry is a major economic sector, generating employment and contributing to GDP through production, distribution, and exports [10]. While domestic output covers most internal demand, Romania both imports and exports considerable volumes, reflecting its integration into European trade [8].

At EU level, the beer market is mature, with average per capita consumption of ~70 liters annually, though with strong national variations. Germany, the Czech Republic, Austria, and Poland are among the largest producers and consumers [4]. The sector is highly diverse, from multinationals dominating market share to thousands of microbreweries and craft producers expanding rapidly [22]. Current trends highlight demand for low- or non-alcoholic products, sustainability initiatives, and innovation in styles and techniques [3].

Strict EU-level regulations on production, labeling, and taxation coexist with national specificities, influencing competitiveness [26]. The industry is also a pillar of agriculture, relying on local barley and hops, and plays a vital role in rural economies [4].

Romania stands as one of the largest beer markets in Eastern Europe, with a long tradition of brewing and consumption. In the past decade, the market has been dominated by four large companies but also shaped by the dynamic growth of craft breweries targeting younger urban consumers [7].

The four main players are Ursus Breweries (Asahi Group), producing Timișoreana, Ursus, Stejar, Kozel, and Ciucaș; Heineken Romania with Ciuc, Silva, and international brands; Bergenbier (Molson Coors); and United Romanian Breweries Bereprod, which brews Tuborg and Carlsberg. Alongside them, dozens of microbreweries focusing on quality and innovation have emerged, including Hop Hooligans, Ground Zero, Zăganu, Wicked Barrel, and Clinica de Bere.

In this context, the goal of this research was to analyze the evolution of the Romanian beer market in the broader extent of European trends, in the interval of the five years 2019–2023.

MATERIALS AND METHODS

The data used in this study were obtained from official and reliable sources, including:

- Databases on beverage consumption for the period 2020–2023, provided by the National Institute of Statistics [14], [15], [16].
- European Beer Trends – Statistics Report [30], which provides aggregated data and analyses on beer production and consumption at the European level.

For the interpretation of the collected data, the following statistical methods and analytical tools were employed:

1. Time Series Analysis

The evolution of beer production, consumption, as well as exported and imported volumes was analyzed through time series using:

- Annual growth rates;
- Variation ratios [12].

2. Growth Index (%)

To evaluate annual changes, the growth index was calculated using the formula:

$$I_t = \frac{X_t}{X_{t-1}} \times 100 \dots\dots\dots(1)$$

where:

I_t = growth index for year t ,

X_t = indicator value in year t ,

X_{t-1} = indicator value in the previous year.

This method is widely applied in the statistical analysis of socio-economic dynamics [32].

3. Coefficient of Variation (CV)

To assess fluctuations in the beer production, consumption, as well as exported and imported volumes, the coefficient of variation was employed, calculated as:

$$CV = \sigma / \mu \dots\dots\dots(2)$$

where:

σ = standard deviation,

μ = arithmetic mean of the data series.

A CV below 0.2 indicates low variability, and a CV above 0.5 indicates high variability.

4. Compound Annual Growth Rate (CAGR)

To analyze the growth dynamics of beer output, consumption, and trade flows, the Compound Annual Growth Rate (CAGR) was employed, as it represents an essential indicator for long-term sectoral assessments. In the context of the brewing industry, CAGR is particularly relevant for:

- Evaluating the performance of the beer market over time, highlighting production and demand trend;
- Estimating long-term growth prospects for both domestic and European beer sectors;
- Comparing development trajectories between different countries or regional markets within the EU.

The formula is [6]:

$$CAGR = \left(\frac{V_f}{V_i} \right)^{\frac{1}{n}} - 1 \dots \dots \dots (3)$$

where:

V_f = the final value of the indicator,

V_i = the initial value of the indicator,

n = the number of years under review.

5. Pareto Cumulative Method

The Pareto cumulative method is based on the empirical observation that, within a given system, a relatively small proportion of causes generates the majority of effects [18]. This method provides deeper insights into the relative distribution of production among different states and highlights structural inequalities in each country's contribution to the European total. By applying the Pareto cumulative method, the graphical representation offers a dual perspective:

- Quantitative – through the individual values of each country;

- Cumulative – by emphasizing the progressive share in the European total.

Thus, this method becomes an essential tool in formulating sectoral policies, allocating resources, or identifying strategic markets in the European brewing industry [20],[25].

6. SWOT Analysis

The SWOT analysis is a method used to evaluate the strengths, weaknesses, opportunities, and threats of a sector, organization, or strategy. In this study, focused on the brewing industry in Romania and its integration within the European market, the SWOT framework was applied to identify internal and external factors influencing the development and competitiveness of the beer sector [19],[13].

RESULTS AND DISCUSSIONS

The analysed chart provides an overview of beer production in the member states of the European Union in 2023, expressed in thousands of hectoliters (hl). The data highlight significant disparities among member states regarding production volumes, outlining a clear hierarchy of the main producers in the region (Figure 1).

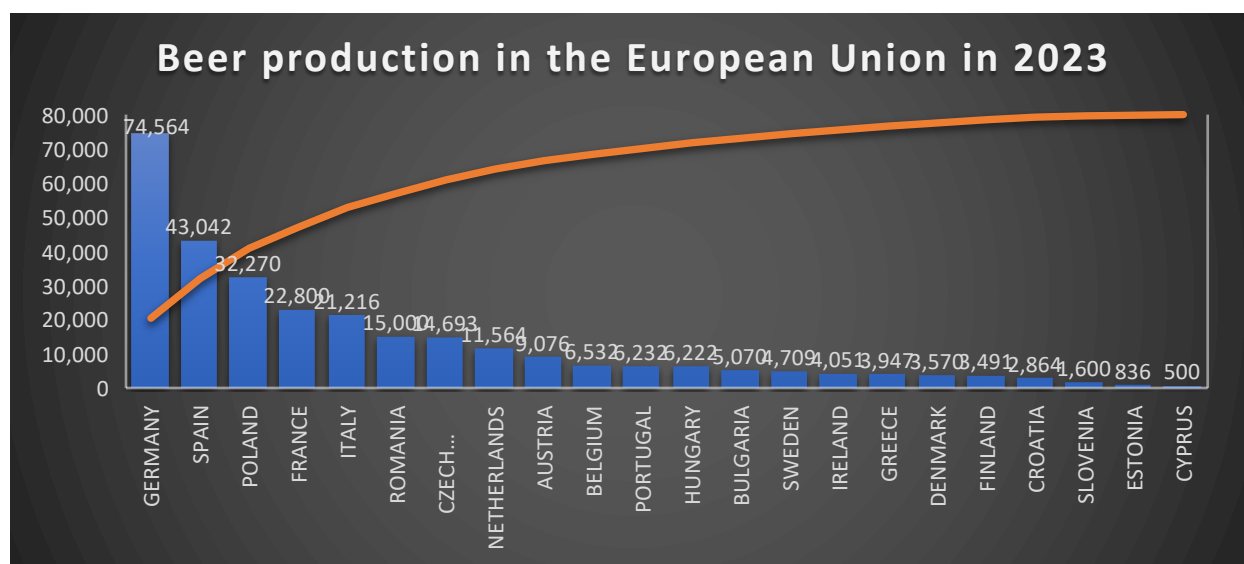


Fig. 1. The evolution of beer production in the European Union in 2023(Thousand hectoliters)

Source: European Beer Trends – Statistics Report (The Brewers of Europe, 2023) [30].

Germany ranks first by a wide margin, with a production volume of 74,564 thousand hl, consolidating its position as the most important

beer producer in the EU. It is followed by Spain (43,042 thousand hl) and Poland (32,270 thousand hl), completing the top three. These

three countries make a substantial contribution to the Union's overall beer production, concentrating a considerable share of the total volume.

France (22,800 thousand hl) and Italy (21,216 thousand hl) occupy the next positions, confirming the upward trend of beer production and consumption in Southern European states. Romania ranks sixth, with a production volume of 15,000 thousand hl, highlighting its active role in the European beer industry, even surpassing countries with a longstanding brewing tradition such as the Czech Republic (14,693 thousand hl) and Belgium (6,532 thousand hl).

In the middle range of the ranking we find the Netherlands (11,564 thousand hl), Austria

(9,076 thousand hl), Portugal (6,232 thousand hl), Hungary (6,222 thousand hl), and Bulgaria (5,070 thousand hl), reflecting stable but smaller-scale production compared to the major markets. At the opposite end are countries such as Slovenia (1,600 thousand hl), Estonia (836 thousand hl), and Cyprus (500 thousand hl), which record the lowest production levels in the Union.

The orange line superimposed on the chart suggests a Pareto-type cumulative curve, emphasizing the concentration of production within the first few member states. This representation confirms that a relatively small proportion of countries generate the largest share of total beer production in the European Union.

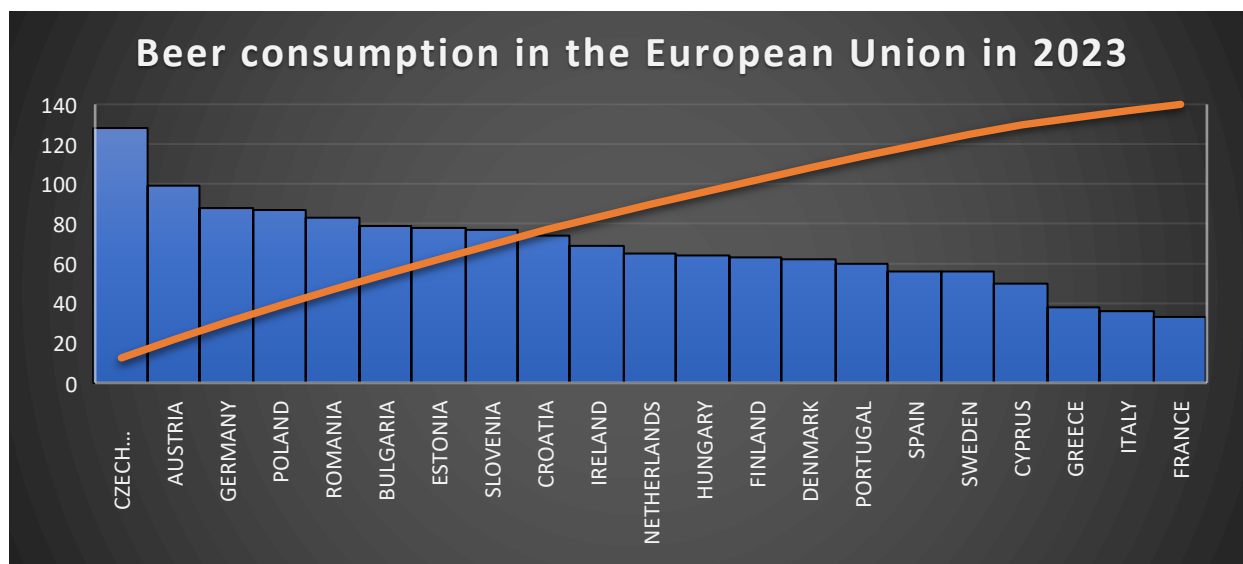


Fig. 2. The evolution of beer consumption in the European Union in 2023 (Liters per capita/year)

Source: European Beer Trends – Statistics Report (The Brewers of Europe, 2023) [30].

The Czech Republic ranks first in terms of consumption, with approximately 130 liters per capita, thus maintaining its status as the European leader in individual beer consumption. Austria and Germany follow, each with a consumption level exceeding 90–100 liters per capita.

This situation reflects a strong beer-drinking culture, typical of the Central European region, where beer is deeply embedded in social, festive, and everyday life.

A considerable segment of the European Union records an annual consumption of 65–85 liters per capita. These include Poland, Romania, Bulgaria, Estonia, Slovenia, and Croatia, as

well as Western and Northern countries such as Ireland, the Netherlands, Finland, and Denmark (Fig. 2).

Such values can be linked to the wide availability of the product, the presence of local industries, and balanced dietary preferences between beer and other alcoholic beverages.

At the bottom of the ranking are France (~35 liters per capita), Italy, Greece, and Cyprus, all below 50 liters per capita. These countries are distinguished by their dominant viticulture traditions, where wine remains the primary alcoholic beverage, which explains the

relatively low levels of beer consumption (Fig. 2).

The orange line on the consumption graph represents the cumulative distribution, expressing the aggregated shares of each country in the EU total. This representation highlights a phenomenon of concentration in consumption across a limited number of states: the first 5–6 countries, including the Czech Republic, Austria, Germany, Poland, and Romania, account for a significant proportion of total per capita consumption in the EU. Toward the end of the chart, the curve flattens, indicating that the remaining countries contribute marginally to the cumulative total.

Thus, the Pareto model illustrates the inequality in the distribution of individual consumption, confirming the hypothesis that a small group of states sustain a large part of regional demand.

According to Brewers of Romania (2023), the annual average per capita consumption was approximately 85 liters in the period 2019–2023, positioning Romania among the significant beer consumers at the European level. However, consumption recorded a slight decline in recent years, caused by factors such as the pandemic, increased excise duties, and lifestyle changes.

Table 1. Statistical indicators

	Standard deviation	Mean	Coefficient of variation (%)	2023/2019 (%)	Annual growth rate (%)
Beer consumption (liters)	3.33	85.74	0.04	90.24	-2.54
Beer production (thousand hl)	706.85	16,489.58	0.04	89.56	-2.72
Import (thousand hl)	99.25	610.26	0.16	95.55	-1.13
Export (thousand hl)	38.35	492.52	0.08	84.49	-4.13

Source: Own calculations based on beverage consumption data.

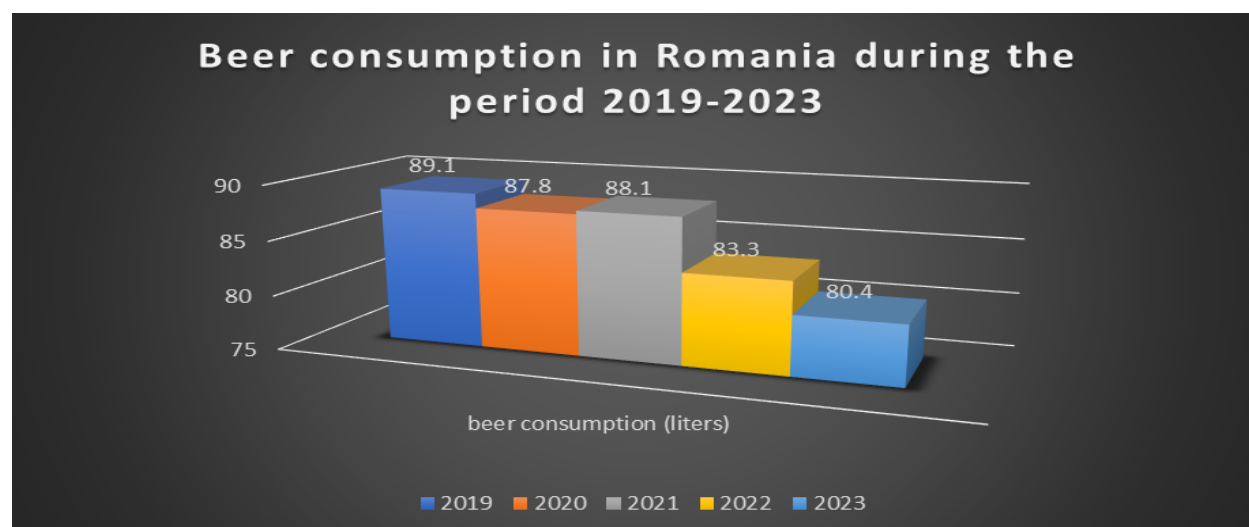


Fig. 3. The evolution of beer consumption in Romania during 2019–2023

Source: Official statistics regarding agriculture and consumption [14], [15], [16].

The statistical indicators for beer production, consumption, export and import are shown in Table 1.

Analyzing beer consumption in Romania during 2019–2023, a downward trend can be observed (Figure 3). The annual average per capita beer consumption decreased steadily, with an average annual rate of -2.54%. This

declining trend is consistent with findings in the literature, which highlight the negative impact of the COVID-19 pandemic, inflation, and rising excise duties on alcohol consumption in Romania [24], [21]. Nevertheless, the low coefficient of variation (0.04) shows that the decline was gradual, without major annual fluctuations.

The main causes of this decline include reduced purchasing power, unfavourable weather, and shifts in consumer behavior (greater orientation toward health and non-alcoholic products). Consumption was directly affected by the fall in real incomes, accentuated during the pandemic and subsequent inflation. It should also be noted

that in 2022, excise duties rose considerably through Government Ordinance 16/2022, and were subsequently adjusted automatically to inflation plus 5% annually. The HoReCa sector was severely hit by lockdowns in 2020–21, with its share of total beer consumption dropping to 8–9%, from ~15–20% before the pandemic.

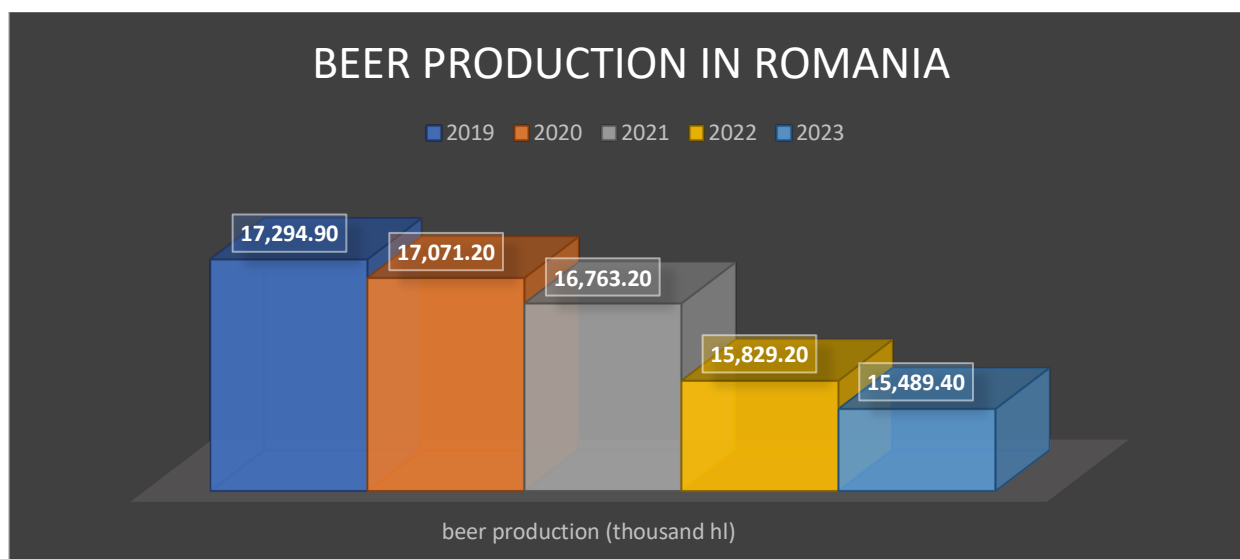


Fig. 4. The evolution of beer production in Romania during 2019–2023

Sources: Official statistics regarding agriculture and consumption [14], [15], [16].

Domestic beer production decreased on average by 2.72% annually during the analyzed period, reflecting declining domestic demand and economic pressures (Fig. 4).

This trend has also been observed in other economic studies of the Romanian agri-food sector, where production contracted under pandemic restrictions and rising production costs [17].

The stability of the coefficient of variation indicates a continuous and uniform decline.

Beer imports are predominantly sourced from EU countries such as Germany, the Czech Republic, Poland, and Belgium, driven by consumer preferences for unusual, international, or premium beers, as well as low logistical costs within the Common European Market.

Studies show that in Central Europe, major markets encourage imports mainly for novelty and diversification, not for substituting local production.

Imports recorded a more moderate decline, with an annual rate of -1.13%.

The higher variability (coef. 0.16) reflects significant year-to-year fluctuations, possibly caused by supply chain changes, logistical costs, and consumer preferences [9].

Part of this relative stability may be explained by the import of premium or craft assortments that are not widely produced domestically [7] (Fig. 5).

Beer exports in Romania remain marginal and stable, representing 2–3% of production.

The current strategy relies on strong domestic consumption and niche demand from the diaspora rather than large-scale exports.

Exports were the most affected, registering an average annual decline of over 4%. This decline may be associated with international logistical difficulties during the pandemic, reduced competitiveness in external markets, and shifts in consumption preferences [24], [21]. The coefficient of variation indicates higher volatility, characteristic of export markets sensitive to external factors.

Compared to other Central European nations, Romania is not a significant exporter, and

imports/trade balance remain predominantly local (Fig. 6).

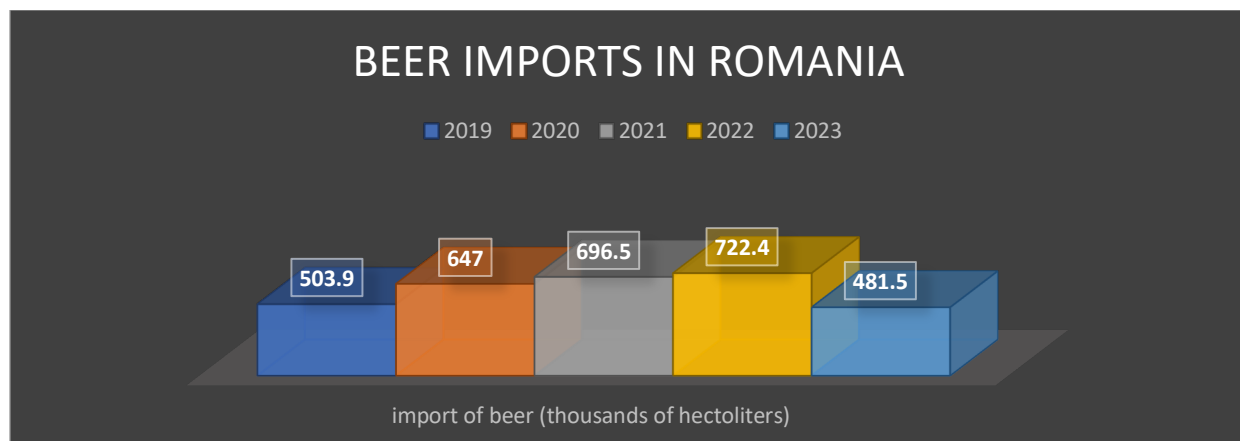


Fig. 5. The evolution of beer imports in Romania during 2019–2023
Sources: Official statistics regarding agriculture and consumption [14], [15], [16].

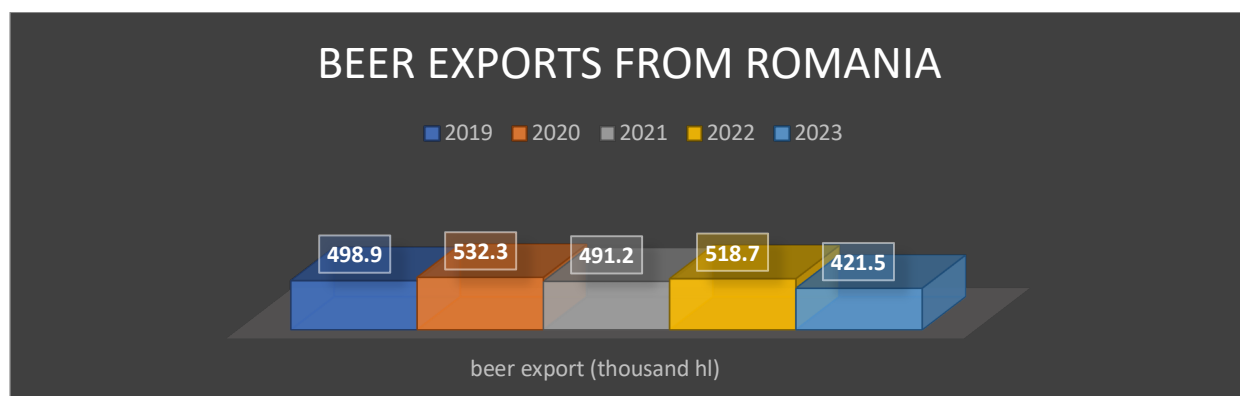


Fig. 6. The evolution of beer exports from Romania during 2019–2023
Sources: Official statistics regarding agriculture and consumption [14], [15], [16].

SWOT Analysis

Strengths

1. Consistent local production

Romania is one of the main beer producers in Eastern Europe, with an average annual production of approximately 16 million hectoliters during 2019–2023, covering most of domestic consumption [5]. This consistent production supports internal market stability, even during crises. Popescu et al. (2022) highlight the resilience of the beer industry to recent economic shocks [24].

2. Strong beer consumption culture

Per capita consumption, although declining, has remained high compared to other countries in the region, indicating a well-established tradition [9]. This culture provides a stable consumer base. [2] emphasized Romanian consumers' traditional preferences for local beer.

3. Development of the craft and premium segment

Although still small in share, the craft beer segment has grown rapidly, offering new market opportunities [7]. This attracts young, urban consumers willing to pay more for quality and diversity.

Weaknesses

1. Decline in consumption and production

Data reveal a constant downward trend in consumption and production during 2019–2023, with negative annual rates of approximately 2.5–2.7% [14]. This decline is due to the negative economic impact of the pandemic and changing consumer behavior.

2. High fiscal pressure

The increase in excise duties and alcohol taxes during the analysed period led to higher prices and reduced consumption, particularly in the mainstream beer segment. Georgescu & Pavel

(2022) demonstrate that high taxation reduces demand elasticity and negatively impacts the beer market [11].

3. Dependence on the HoReCa sector

The HoReCa segment was severely affected by pandemic restrictions, which negatively influenced draft and premium beer sales [5]. This dependency makes the market vulnerable to external shocks. In the absence of diversification, external shocks can lead to abrupt declines in sales volumes, difficulties in maintaining cash flow, and long-term competitive vulnerability. [28]

Opportunities

1. Expansion of the craft and premium segment

Demand for craft, non-alcoholic, and flavoured beers is increasing, stimulating innovation and portfolio diversification [7], [27]. This can raise profit margins and attract new consumer segments.

2. Digitalization of sales

E-commerce channels and home delivery developed significantly during the pandemic and continue to represent an opportunity for market expansion [31]. Adapting to digital commerce can improve accessibility and convenience for consumers.

3. Trends toward responsible and healthy consumption

The growing interest in non-alcoholic and low-alcohol beer opens new markets and can help counterbalance the overall decline in alcohol consumption [27].

Threats

1. Difficult economic context and inflation

Rising production costs and declining purchasing power negatively affect demand in the beer market. Georgescu & Pavel (2022) emphasize the negative impact of inflation on discretionary spending [11].

2. Strict fiscal and legislative regulations

Fluctuating tax policies and rising excise duties reduce investment attractiveness and may discourage consumption [2]. Popescu et al. (2022) mention that legislative instability is a barrier to long-term development [24].

3. Growing competition from imports and alternative beverages

Beer imports, as well as rising consumption of other alcoholic or non-alcoholic beverages, can affect the market share of local producers [9].

Pantiu et al. (2024) show that changes in preferences and access to international brands intensify competition [21].

4. Impact of climate change on raw materials

Risks related to the supply of hops and barley can generate cost volatility and affect production [28]. Dumitru et al. (2022) draw attention to the industry's vulnerability to environmental factors [7].

CONCLUSIONS

The Romanian beer market has experienced a steady yet moderate decline across its main indicators—consumption, production, imports, and exports—registering negative annual rates between -1% and -4%. This trend reflects not only macroeconomic pressures such as the pandemic, inflation, and higher excise duties, but also long-term structural changes in consumer behaviour.

With an average annual consumption of approximately 85 liters per person, Romania continues to rank among the top beer consumers in Europe, despite an annual decline of -2.54%. The shift in consumer preferences—toward health-oriented choices and non-alcoholic beer—combined with the erosion of real incomes, represent key drivers of this downward trend.

Beer production declined at an average rate of -2.7% per year, reaching an annual average of 16 million hectoliters. Nevertheless, production levels remained sufficient to cover nearly the entire domestic demand, reflecting a strategic self-sufficiency of the industry. This resilience underscores the ability of domestic producers to balance supply and demand, even under adverse economic conditions.

Beer imports originate primarily from EU member states such as Germany, the Czech Republic, and Belgium. They are driven largely by consumer demand for diversification—particularly in the craft and premium segments—rather than by any insufficiency in local production capacity. Although imports show greater variability than production, their overall medium-term trajectory has remained relatively stable, reflecting a niche-oriented but persistent demand.

Exports of Romanian beer have been the most affected indicator, registering an average annual decline of -4.13% and accounting for only 2–3% of total production. Romania does not play a major exporting role within the European beer market, with external trade largely confined to niche demand, particularly from the diaspora or for traditional specialty products.

The HoReCa segment (hotels, restaurants, cafés) was severely impacted by the restrictions imposed during the pandemic, while the increase in excise duties introduced through Government Ordinance 16/2022 led to higher retail prices and reduced consumption, especially within the mainstream beer segment. These combined effects contributed to the contraction of both volume and value in domestic sales.

Despite the overall downturn, the market has shown dynamism in certain sub-segments. Craft, flavored, and non-alcoholic beers are recording steady growth, supported by demand from urban consumers, the expansion of digital sales channels, and the rise of responsible and health-conscious consumption trends. This emerging demand highlights the capacity of the Romanian beer industry to adapt and innovate in response to shifting consumer expectations, offering a potential path for future resilience and growth.

Strategic Recommendations for the Beer Market

Diversification of product portfolio

Given the decline in traditional consumption and the growing interest in craft, non-alcoholic, and premium beers, companies should expand their offerings to include innovative products tailored to new consumer preferences [7]. This can enhance attractiveness and strengthen customer loyalty.

- ***Development of digital sales channels***

The COVID-19 pandemic accelerated digital transformation, and online commerce is becoming increasingly important for consumers [31]. Investments in e-commerce platforms, delivery services, and digital marketing can broaden customer access and convenience, boosting sales.

- ***Promotion of sustainability and social responsibility***

Consumers are increasingly concerned with environmental impact and responsible consumption [8]. Companies should invest in sustainable practices (reducing packaging, saving energy) and awareness campaigns on moderate drinking, which can strengthen brand image and public trust.

Collaboration with authorities for balanced fiscal policies

Given the high fiscal pressure negatively impacting consumption, the beer sector should develop a constructive dialogue with policymakers to support fiscal policies that stimulate growth and market competitiveness [11]

Expansion into external markets

Exports represent an important growth opportunity, particularly in regional (Central and Eastern European) and EU markets [10]. Companies should invest in international marketing and product adaptation to capitalize on these opportunities.

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