

THE CONTRIBUTION MADE BY BEER TO THE ROMANIAN ECONOMY

- 2013 -



REGIOPLAN
POLICY RESEARCH

**THE CONTRIBUTION MADE BY BEER
TO THE ROMANIAN ECONOMY – 2013**

- Final Report -

Amsterdam, November 2014

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EXECUTIVE SUMMARY

In 2014, Regioplan Policy Research conducted a study focusing on the economic impact of the production and sale of beer in Romania in 2013.

A sector with impact

In 2013, the Romanian brewing companies produced all together 16.1 million hectolitres of beer, mostly for inland consumption. The Romanians consumed around 16.3 million hectolitres of beer in 2013. These impressive beer production and consumption is of a major importance to the Romanian economy. In 2013, the production and consumption of beer directly and indirectly created 69,700 jobs, a value-added of 517 million Euro and government revenues of 697 million Euro.

Sector's economic impact is declining

In comparison with the year 2012, the 2013 economic impact of the brewing sector has declined (see figure 1). On almost all of our impact indicators, the Romanian brewing sector's performance shows a negative development. There are only two exceptions to this negative picture. At first the excise duty revenues for the Romanian government grew with 9,0 per cent. Another positive trend is the 2.6 per cent growth of beer related employment in the supplying sectors. This is a result of major brewing companies buying a larger percentage of their intermediate goods and services within Romania. This effect is most visible regarding agricultural products brewing companies uses to brew their beer. On the other hand, the hospitality sector is confronted with the most negative development. In this sector the beer related employment decreased by almost 23 per cent.

Figure 1 Changes in the economic impact of beer in Romania

	2012	2013	Δ 2012 -2013
Direct employment by breweries	5,900	5,700	-3.4%
Indirect employment (in supplying sectors)	31,200	32,000	+2.6%
Induced employment (hospitality)	30,700	23,700	-22.8%
Induced employment (retail)	8,900	8,300	-6.7%
Total beer related employment (jobs)	76,700	69,700	-9.1%
Total beer related value added (million Euro)	570	517	-9.8%
Excise duties	142	154	+9.0%
VAT revenues hospitality	130	108	-17.5%
VAT revenues retail	222	217	-2.1%
Employment taxes brewing sector	24	23	-3.3%
Employment taxes other sectors	210	149	-7.2%
Total beer related government revenues (million Euro)	728	697	-4.2%

Source: calculations Regioplan (2014)

Huge back drop in production and consumption

The aforementioned declining economic importance of the brewing sector in 2013 is a result of the more than 10 per cent back drop in the overall beer production and consumption in the same period. It looks like that one of the main determinants of this development is the 10 per cent-rise in the excise duty rate. The negative effects of this rise in 2013 unfortunate confluence with this year's relatively bad weather conditions.

Figure 2 Changes in production and consumption of beer in Romania

	2012	2013	Δ 2012 -2013
Beer production (million hl)	18.0	16.1	-10.5%
Beer consumption (million hl)	18.2	16.3	-10.4%

Source: Asociația Berarii României (2014)

A high price paid

As a foreseeable effect the 10 % rise in excise duty rate in Euro (in Lei the increase of the excise duty rate entailed almost 16%¹) resulted in a rise in the excise duty revenues for the government. However, this positive effect is completely offset by the other negative impact developments. Considering benefits for the government, it can be stated that, in 2013, the rise in excise duty revenues did not fully compensate the declining beer related VAT revenues and employment taxes. Besides the 2013 net-loss of government revenues, there is in 2013 also a huge loss of beer related employment. Seeing this, there is high price paid for the rise in the excise duty revenues.

Working to maintain impact

Considering its influences on the sector's economic impact, it is of pivotal importance that the brewing sector anticipates and aims to turn the downward trend of less beer production and consumption around. It is with no doubt that the Romanian brewing sector is willing to work to maintain its impact on the country's economy in the upcoming years. However, to achieve this goal a healthy and inspiring investment climate is desirable. In opinion of the brewing sector, the Romanian government has the ability to create such an environment in three essential ways. First, by not implementing any further excise duty increases, but establishing a fair fiscal system for all excised products. Second, by enhancing the predictability of the regulatory regime (for instance, no changes in legislation in the area of advertisement contracting). And last, to secure open channels of dialogue between the brewing sector and the government.

¹ The Romanian government decided to increase the excise duty rate in Euro by 10 % per February 2013. However, the Romanian brewing companies pay the 10 % excise increase in Lei based on the exchange rate established by the European Commission. Compared to 2012, the 2013 EC exchange rate changes by 5.17%, resulting in an increase in the Romanian excise duty rate of almost 16 %.

ABOUT THE STUDY

Purpose of the study

This study was commissioned by Asociația Berarii României and aimed to quantify the economic impact of the brewing sector in Romania.

Economic impact

Three different impacts were considered in order to provide a comprehensive picture of the economic impact of the brewing sector:

- Direct impacts
- Indirect impacts
- Induced impacts

For more information thereon, please consult Annexes I to III of this report which talks to the methodology of the report.

2013

Our calculations were made for the years 2013.

For earlier years we reused the outcomes of impact calculations we made for studies commissioned by The Brewers of Europe.

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1 THE ROMANIAN BEER MARKET

1.1 Highlights

Figure 1.1 Key figures for the beer sector in Romania

Key figures	2008	2010	2012	2013
Production (thousand hl)*	19,670	16,920	18,000	16,110
Exports (thousand hl)*	65	138	227	348
Imports (thousand hl)*	591	230	428	539
Consumption (thousand hl)*	20,193	17,000	18,200	16,300
Production value (million Euro)**	706	605	707	654
Consumer spending on beer (million Euro)**	1,972	1,687	1,715	1,678
Brewing companies*	13	13	12	13
Breweries*	21	18	17	19

Source:* Asociația Berării Românei (2014), **calculations by Regioplan (2014).

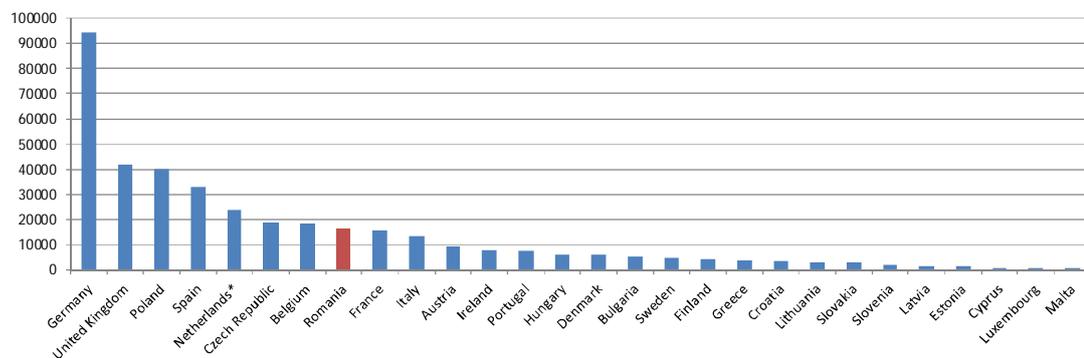
1.2 Production

Production level and value

According to information of Asociația Berării Românei in 2013 the total beer production reached a level of 16,110,000 hectolitres. We estimated that corresponding value of this production equals 653.6 million Euro. This is the beer-related turnover of the brewing companies.

In 2013, Romania is the eight largest beer-producing country within the European Union (see figure 1.2). Worldwide, the Kirin Institute of Food and Lifestyle Report Vol. 30 presented that Romania is on the 25th place on the list of the largest beer-producing countries in the world in 2010.

Figure 1.2 Beer production in EU in 2013 (*1,000 hl)



Source: national brewers' associations in EU member states (2014)

Brewing companies

The Romanian brewing sector consisted of 19 breweries including 2 microbreweries, which belonged to 13 brewing companies. Some of the major EU brewing companies have subsidiaries in Romania.

Figure 1.3 Beer-producing companies in Romania

Brewing company	Number of breweries	Number of (most common) brands
<i>Members of Asociația Berarii României</i>		
Bergembier SA	1	8
Berarium SRL	1	2
Heineken Romania	4	7
United Romanian Breweries Bereprod	1	5
Ursus Breweries	4	9
<i>Others</i>	8	13
Total	19	44

Source: Asociația Berarii României

The 19 breweries of the 13 Romanian brewing companies are located all over Romania.

Figure 1.4 Breweries by region (situation 2013)

	Number of breweries in this region
Centru	3
București-Ilfov	1
Nord-Est	2
Nord-Vest	5
Sud-Est	3
Sud-Muntenia	2
Sud-Vest Oltenia	1
Vest	2

Source: Asociația Berarii României

1.3 Consumption

Beer is a popular alcoholic beverage in Romania, because it contains one of the lowest concentration of alcohol. Asociația Berarii României reported that the Romanian consumed 16,300,000 hl of beer in 2013.

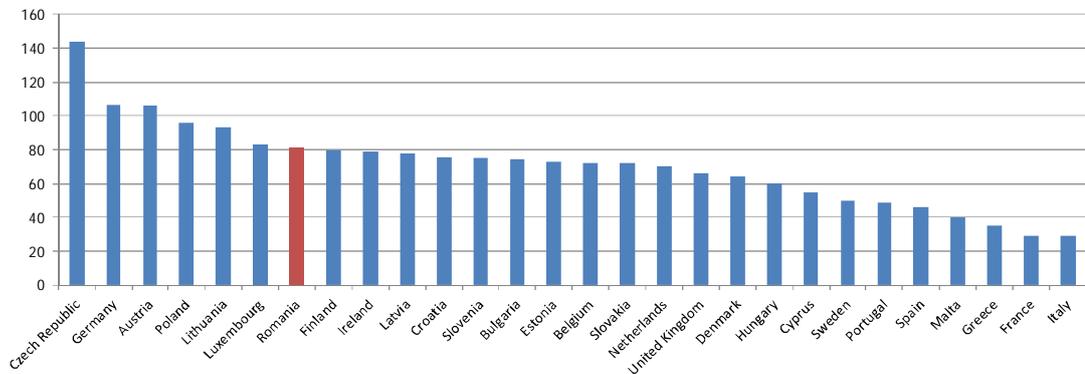
Beer consumption per capita

The 2013 Romanian beer consumption per capita stands at 81 litres per year, in 2012 the per capita beer consumption was 90 litres a year.

In 2013 the average European drinks 71 litres of beer a year, with the most beer being consumed in East and Central Europe, and the least in Southern

Europe. So Romanian beer consumption per capita is above the European Union average.

Figure 1.5 Average beer consumption in EU in 2013 per capita in litres



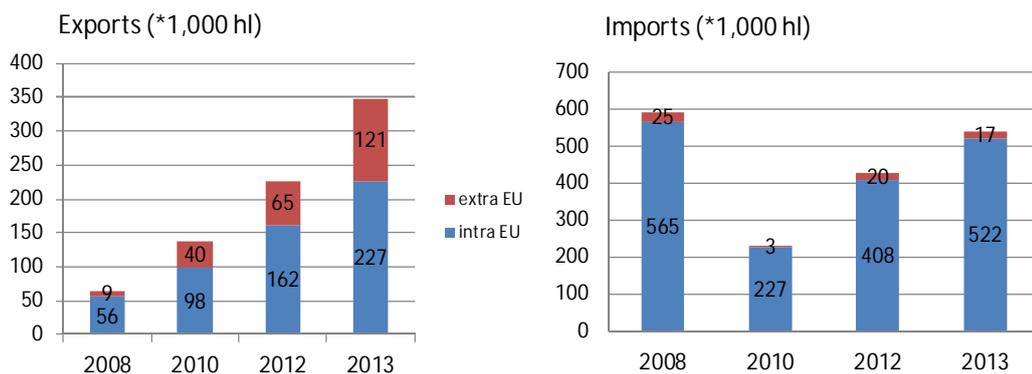
Source: national brewers' associations in EU member states (2014)

1.4 Exports and imports of beer

In 2013 the brewing companies exported 348,000 hl beer. This is 2.2 per cent of the beer they had produced in Romania in that year. A third of the exported beer is transported outside Europe. In total intra- en extra-EU exports have increased the last few years.

The import of beer also shows an increase from 2010. In 2013, 539,000 hl of the beer consumed in Romania is imported.

Figure 1.6 Exports and imports (*1,000 hl)

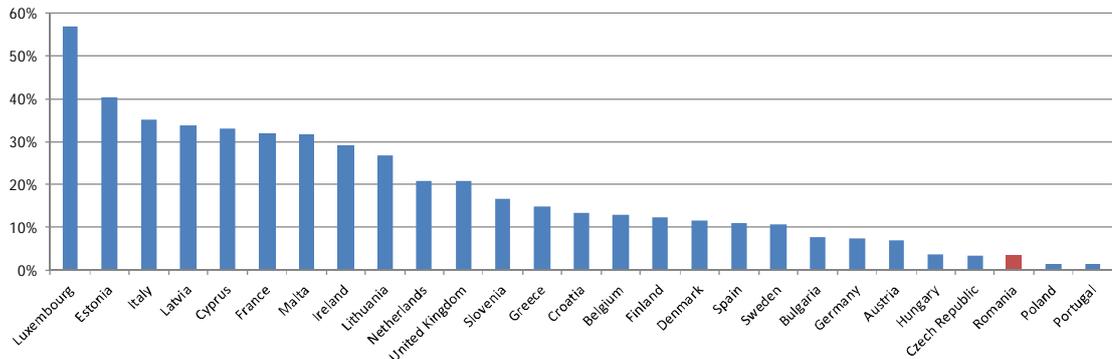


Source: calculations Regioplan (2014)

The brewing sector is one of the few industries in Romania that still has a thriving local production. Almost 97 per cent of the total beer consumption in Romania is produced within its borders. So 3.3 per cent of the consumed beer

is imported, which is less than the European Union average of 12.6 per cent (see figure 1.7).

Figure 1.7 Import of beer as percentage of the total beer consumption in 2013 (%)



Source: national brewers' associations in EU member states (2014)

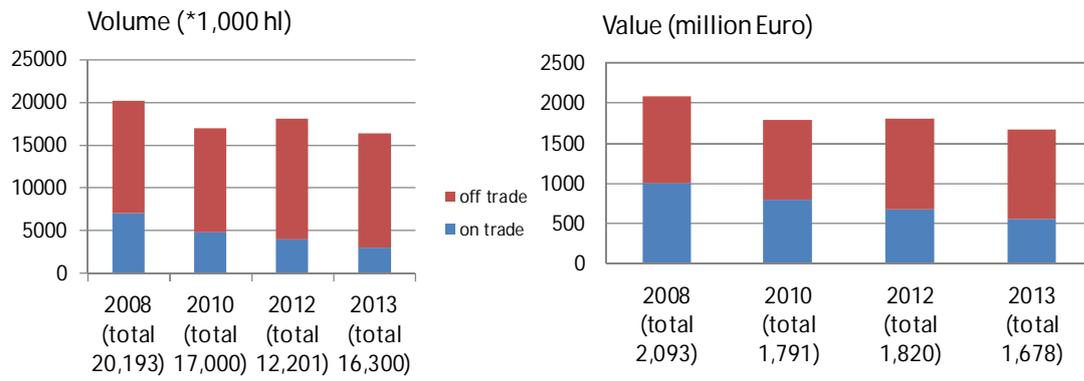
1.5 Distribution channels

Of all the beer consumed in Romania, 81 per cent is purchased in traditional groceries and other retail outlets as super markets, referred to as the off-trade channel, and consumed at home. The other 19 per cent is purchased in the on-trade sector (bars, restaurants etc.).

We estimated the value of 2013 consumer spending on beer at 1,678 million Euro. A litre of beer in the on-trade sector is more expensive than in the off-trade sector. But because more beer is consumed at home than in restaurants and bars, the largest part of the consumption value of beer is created in the off-trade sector.

With regards to the total value of the consumer spending on beer, it is important to realize that in Romania, as in many other European countries, a trend that over the years less beer is consumed in bars, pubs and restaurants is observed. For beer consumption at home choosing less expensive beer has become a strongly visible trend. The lower segment beer is responding by selling beer in large PET bottles. These changing preferences affect the total consumer spending on beer negatively. It decreased from 1,820 million euro in 2012 to the aforementioned 2013 value of 1,678 million Euro. The shrinking value of the consumer spending on beer also affects the VAT revenues from beer for the government in a negative manner.

Figure 1.7 Volume and value of beer sales



Source: calculations Regioplan (2014)

2 BEER-RELATED GOVERNMENT REVENUES

2.1 Highlights

Figure 2.1 Key figures for the beer-related government revenues in Romania (million Euro)

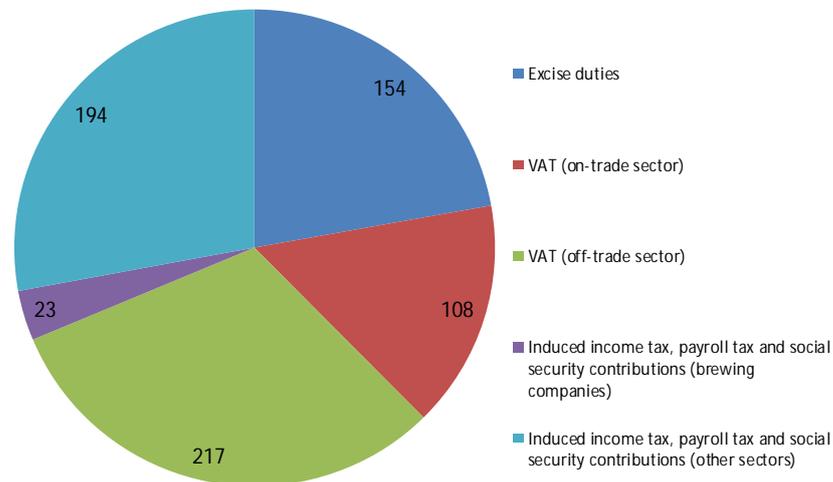
Key figures	2008	2010	2012	2013
Excise duties	156	131	142	154
VAT (on-trade sector)	160	155	130	108
VAT (off-trade sector)	174	192	222	217
Income tax, payroll tax and social security contribution (brewing companies)	18	20	24	23
Income tax, payroll tax and social security revenues (other sectors)	159	154	210	194
Total beer related government revenues	667	651	728	697

Source: calculations Regioplan (2014).

2.2 Total beer-related government revenues

The Romanian government benefits a lot from the production and sale of beer. In 2013, the revenues from excise duties, VAT and income-related contributions resulting from Romanian beer production and sales were estimated around 697 million Euro.

Figure 2.2 Government revenues related to the production and sale of beer in 2013: 697 million Euro



Source: calculations Regioplan (2014)

2.3 Excise duty revenues

The Romanian government receives revenues based on excise duty levied on the beer sales within its borders. At the beginning of 2013 the Romanian excise duty standard rate was 8.976 Euro per hl/12 degree Plato of finished product. After the excise duty rate increase of February 2013 this rate in Euro increased by 10 per cent to 9.874 Euro. It is important to note that the Romanian brewing companies are pay the 10 per cent excise increase in Lei based on the exchange rate established by the European Commission. Compared to 2012, the 2013 EC exchange rate changed with 5.17 per cent, resulting in an increase in the Romanian excise duty rate in Lei of almost 16 per cent. Next to this, in Romania smaller scale brewing companies (with a limited to 200,000 hl) pay a reduced excise duty rate.

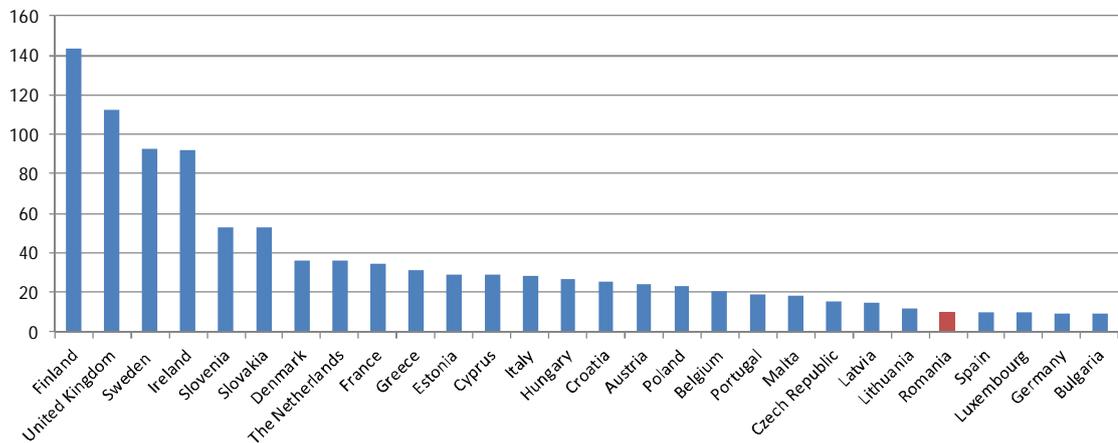
In 2013 the Beer related excise duty revenues for the Romanian government totalled 154 million Euro.

Intra EU comparisons on the excise duty rate

Figure 2.3 shows the absolute value of standard excise duty rate per hectolitre beer in Euro in all 28 EU member states. Additionally, we added similar rates divided by the Member States GDP per capita (see figure 2.4). This illustrates that, compared with the absolute value of the excise duty rate, Romania has

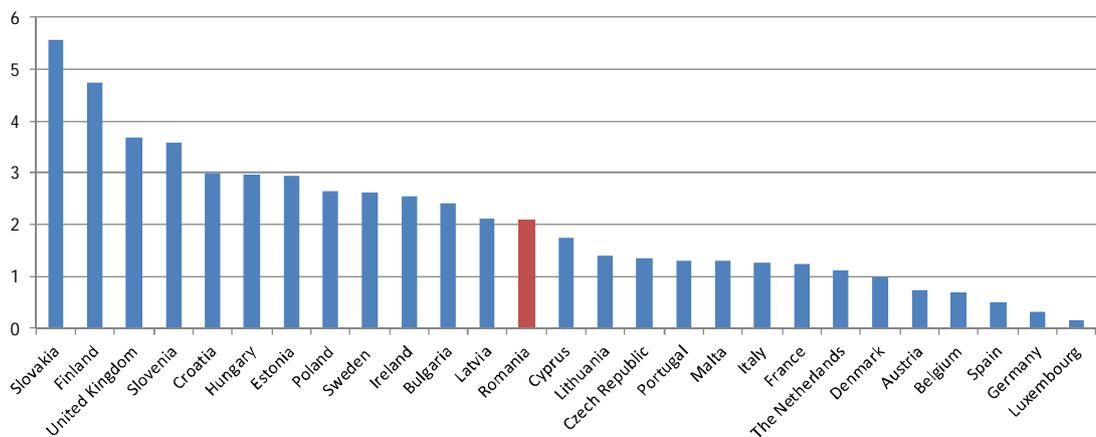
one of the lowest rates. However, if compared with the relative excise duty rate, it can be concluded that fourteen member states entail a lower relative excise duty rate.

Figure 2.3 Excise duty per hl beer in EU in 2013 (absolute value in Euro)



Source: European Commission (2014)

Figure 2.4 Excise duty per hl beer in EU in 2013 (relative value in Euro)



Source: European Commission and Eurostat, calculations Regioplan (2014)

2.4 Value-Added Tax (VAT)

Beer sales to consumers in the Romanian retail and hospitality sector are subject to Value-Added Tax (VAT). The general rate of VAT in Romania (24%) applies to beer. We estimate the total VAT revenues for 2013 due to the sale of beer reached 325 million Euro (107 million on trade; 217 million off trade).

Figure 2.5 Value-Added Tax revenues in 2013 (in million Euro)

VAT on-trade sector	107
VAT off-trade sector	217
Total VAT revenues	325

Source: calculations Regioplan (2014)

2.5 Employment taxes

Other revenues are the income and payroll taxes and social security contributions paid by workers and their employers in the brewing sector, and in other sectors whose jobs can be attributed to beer (supply sectors, hospitality and retail sector). The total the revenues from employment taxes were estimated to be 218 million Euro.

Figure 2.6 Employment taxes revenues in 2013 (in million Euro)

Income tax employees breweries	5
Income tax other employees because of beer	45
Social security revenue from employees breweries	6
Induced social security revenue from employees	50
Social security/ payroll tax revenue from employers breweries	12
Induced social security/ payroll tax revenue from employers	100
Total employment taxes revenues	218

Source: calculations Regioplan (2014)

2.6 Other beer-related government revenues

Our calculations of the 2013 beer-related government revenues do not include all the possible tax revenue generated for governments by brewing companies, suppliers, retail and hospitality businesses. For instance, it was not possible to include revenue related to the other taxes brewing companies have to pay. The brewing companies pay for example also corporate taxes, property taxes, packaging taxes and taxes on special buildings (untaxed buildings). Because we do not have exact figures available for the revenues on these taxes, the revenues for the Romanian government were in 2013 even higher than calculated in paragraph 2.1.

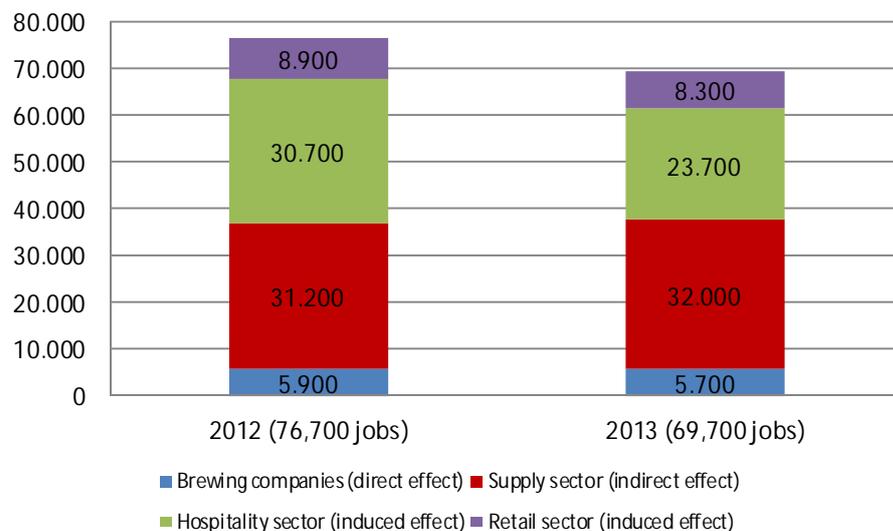
3 BEER-RELATED EMPLOYMENT

3.1 Total beer-related employment

In 2013, approximately 5,700 people were employed directly by Romanian brewing companies. Alongside this direct employment, the production of beer in Romania also created indirect employment via a number of supply sectors and the retail and hospitality sectors. In 2013, beer generated 32,000 jobs in the supply sectors. Moreover, beer contributed in 2013 almost 24,000 jobs in the hospitality sector and around 8,300 jobs in the retail sector. In total, the employment impact of the production and sale of beer in Romania was estimated to be approximately 69,700 jobs in 2013. Compared to 2012, the overall beer related employment decreased by 9.1 per cent. There were 76,700 beer related jobs in 2012.

Figure 3.1 summarizes the distribution of total beer related employment over the last two years.

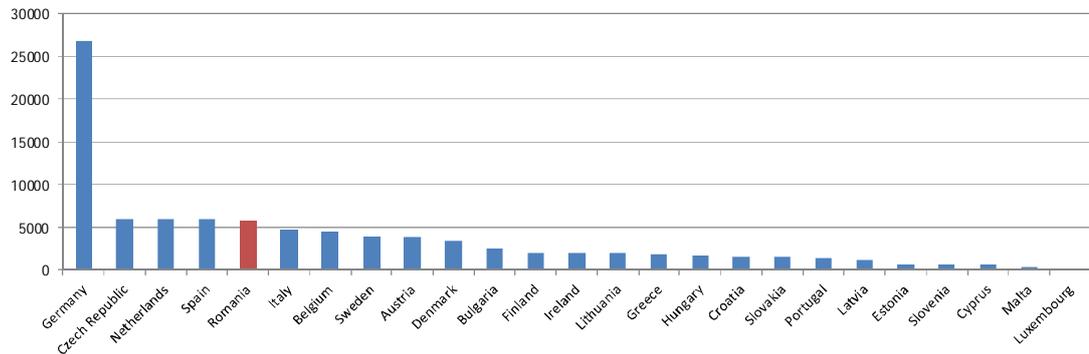
Figure 3.1 Development of employment ($\Delta 2012-2013 = -9.1\%$)



Source: calculations Regioplan, (2013, 2014)

It is important to note that towards the direct employment effect of beer, Romania holds the fifth place within the European Union (see figure 3.2).

Figure 3.2 Direct employment in EU in 2013 (jobs)*



* Figures for France, Poland and the United Kingdom are not available yet.
 Source: national brewers' associations in EU member states (2014)

3.2 Indirect employment

The Romanian brewing sector also generates considerable indirect employment in the economy. The production and sale of beer by breweries is only possible when various sectors provide the necessary goods and services, ranging from agricultural input to energy and transportation capacity, as well as a variety of industrial products and services. In 2013, the total local spending of the brewing sector on goods and services was estimated at 396 million Euro. This is 73 per cent of the total sector's spending on intermediate goods and services (541 million Euro)

This stimulus has a significant economic impact on Romania's economic sectors outside the brewing sector. In 2013 32,000 jobs were created via the supply chain. Much of this employment is regionally concentrated. Notably, the Romanian agriculture sector benefits the most from the activities of the brewing companies. 54 per cent of the jobs created in the supply chain are in agriculture. Agricultural jobs give employment to the less developed parts of Romania. The Romanian media/marketing and the service sector are also a key beneficiary of the brewing sector.

Figure 3.3 shows the distribution of the indirect employment across the sectors supplying to the brewing companies. For further details on how we estimated the indirect employment generated in the supply sector, we refer to annex III.

Figure 3.3 2013 stimulus and indirect employment in Romanian supplying sectors

Sectors	Total stimulus (mln. Euro)	Stimulus for Romania (mln. Euro)	Number of employees (first en second round effect)
Agriculture	107.27	73.54	17,340
Utilities	22.60	22.57	360
Packaging industry	113.28	65.54	2,647
Equipment	48.62	22.99	928
Transport	32.89	32.22	1,180
Media, marketing	102.70	94.39	5,025
Services	113.85	84.60	4,504
Total	541.22	395.85	31,983

Source: calculations Regioplan (2014)

Considering the agricultural stimulus, we state that this stimulus shows a significant increase between 2012 and 2013.

This is caused by major brewing companies buying a larger percentage of their agricultural intermediate products within Romania. Their local spending on these product grew from 63,48 million euro in 2012 to 73,54 million euro in 2013, resulting in almost 2,400 extra beer related jobs in the agricultural sector.

3.3 Induced employment

The number of jobs generated by beer sales in the Romanian hospitality (on-trade) and by groceries/supermarkets (off-trade) in 2013 is as large as the indirect employment: 32,000.

In 2013, around 23,700 of the total number of jobs in the on-trade sector can be attributed solely to the sale of beer. The other jobs in the on-trade sector can be attributed to the sale of other products such as food, wine, spirits, coffee and tea. Employment in the hospitality sector is especially important as it offers job opportunities to less-skilled and younger people, just entering the labour market.

Also the Romanian retail sector benefits from the sale of beer. In 2013 almost 8,300 jobs in the retail sector can be attributed entirely to the sale of beer.

Figure 3.5 Induced employment in Romanian hospitality and retail sector

	Number of jobs
Hospitality	23,707
Retail	8,278
Induced employment (retail and hospitality)	31,986

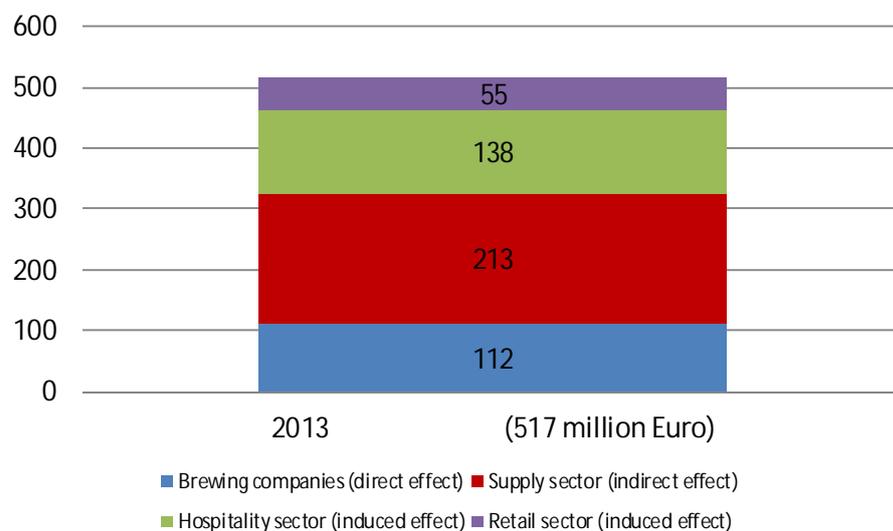
Source: calculations Regioplan (2014)

4 BEER-RELATED VALUE-ADDED

As well as the jobs created, the contribution of the brewing sector to the Romanian economy can be expressed in terms of value-added. In 2013, the total value-added related to the production and sale of beer in Romania was estimated at 517 million Euro.

In the production and consumption of beer, brewing companies create value-added for themselves, their suppliers and for the retail and hospitality sectors. Added value pays tax liabilities, employees' wages, and rewards lenders and entrepreneurs for their investments. For the Romanian government, it is the source of VAT revenue.

Figure 4.1 value-added in 2013 related to the production and consumption of beer in Romania (in million Euro)



Source: calculations Regioplan (2014)

The Romanian brewing sector's share in overall value-added arising from the production and sale of beer is 22 per cent, which is higher than the brewing sector's share in total employment arising from beer (8%). A significant explanation for this is the higher productivity of employees in the brewing sector compared with the productivity of those in other sectors.

An important note is that the value-added is needed to pay for most of the tax liabilities. For the brewing companies these are relatively large; see Chapter 2.

5 DECLINING ECONOMIC IMPACT

5.1 The 2013 economic impact in perspective

In the previous three chapters we show that in 2013 the Romanian beer production and consumptions influenced the economy positively. Beer creates jobs, value added and also huge government revenues. However compared to the year 2012, it can be stated that in 2013 the economic impact of the brewing sector declined. Figure 5.1 gives an insight into the negative developments of our impact indicators.

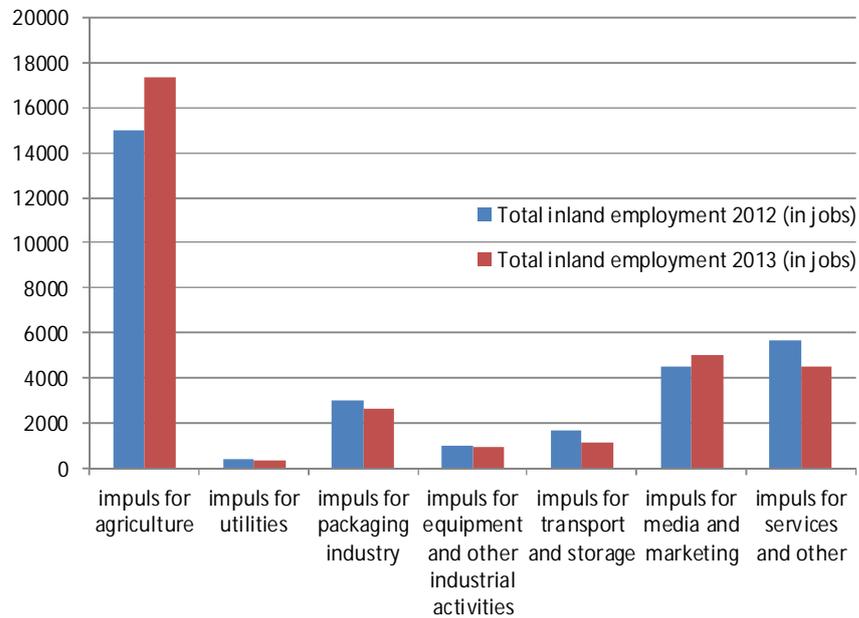
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Induced employment (hospitality)	30,700	23,700	-22.8%
Induced employment (retail)	8,900	8,300	-6.7%
Total beer related employment (jobs)	76,700	69,700	-9.1%
Total beer related value added (million Euro)	570	517	-9.8%
Excise duties	142	154	+9.0%
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Employment taxes brewing sector	24	23	-3.3%
Employment taxes other sectors	210	149	-7.2%
Total beer related government revenues (million Euro)	728	697	-4.2%

Source: calculations Regioplan (2014)

Given figure 5.1, the main conclusion must be almost all indicators show a negative development. There are only two exceptions to this negative picture. First, the excise duty revenues for the Romanian government grow with +9,0 per cent. The second positive trend entails the 2.6 per cent growth in the beer related employment in the supplying sectors. This is a result of major brewing companies buying a larger percentage of their intermediate goods and services within Romania. This effect is most visible with regards to agricultural products brewing companies use to brew their beer (see figure 5.2). On the other hand, the hospitality sector is confronted with the most severe negative development. In this sector the beer related employment decreased by almost 23 per cent.

Figure 5.2 Changes in impulse for inland employment in Romanian supplying sectors (jobs)

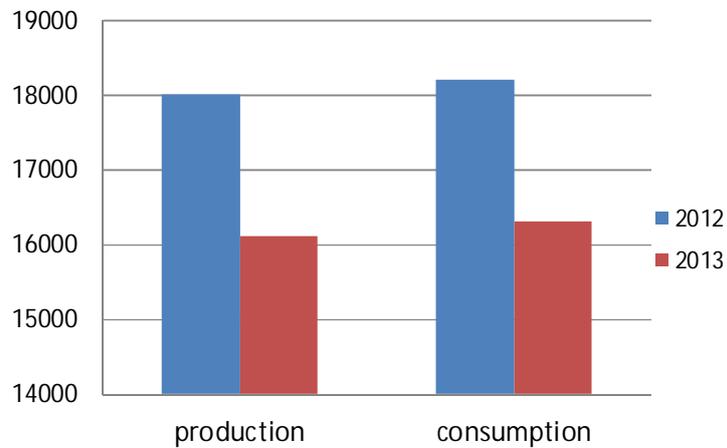


Source: calculations Regioplan (2014)

5.2 The decline in the economic impact explained

The overall question to be answered is what determined the 2013 decline in the economic impact of Romanian beer. The main answer is the huge 2013 back drop of Romanian production and consumption levels of beer. In 2013 Romanian beer production decreased by 10.5 per cent from 18,000,000 in 2012 to 16,110,000 hectolitres in 2013. The consumption decreased by 10.4 per cent from 18,201,000 in 2012 to 16,300,000 hectolitres in 2013. As a result of this the consumption per capita has decreased from 90 litres in 2012 to 81 litres in 2013.

Figure 5.4 Development of the production and consumption of beer in Romania (*1,000 hl)



Source: Asociația Berării României and the Beer study 2012 edition

Besides the overall decrease in the production and consumption levels, the impact of beer is also negatively influenced by the ongoing consumers' move to home drinking. The so-called off-trade percentage grew from 78 per cent in 2012 to 81 per cent in the 2013. From a macroeconomic perspective, there is more benefit to be gained from beer being consumed in bars, pubs or restaurants, than of beer being bought in a supermarket or grocery outlet and consumed at home. Beer sales through the hospitality sector are more labour-intensive than retail sales, and consumers are willing to pay more for their beer in a bar, pub or restaurant than in a grocery shop. In other words, beer sales in the on-trade sector create more employment and also higher VAT revenues for the government.

Another trend in the Romanian beer market that has a moderating influence on the economic impact of beer is the fact that consumers more often choose for beer in the lower segment, like beer in large PET bottles. These changing preferences affect VAT revenues negatively. A result of this is an negative effect of of this is that it influences for example the VAT revenues negatively.

5.3 Explanations for decreased production and consumption

We believe that the 2013 decline in beer production and consumption can be attributed to three main issues:

- First, the poor economic conditions Romania is facing in the last four to five years.
- Second, the increase in excise duty rate on beer, effective from February 2013. The beer excise duty rate has increased with 10 per cent.

Accordingly, the increase in excise duty rate is reflected in the consumer price and faces resistance by consumers.

- Third, the adverse weather conditions in 2013, to be precise a cold and short summer period. As a result of this the peak season for the on trade locations for selling beer was also relatively short.

Towards the first issue, it is often observed that decreasing beer production and consumption coexists with a general economic downwards trend. However, the Romanian GDP in 2013 increased and is at a much higher rate than 2012 (i.e. 3.5 for 2013; 0.6 for 2012). The aforementioned positive macroeconomic figures signal that the economy has improved in 2013. However, we still note a sharp back drop in beer production and consumption in 2013. This is a strong indication that the two other issues have a greater explanatory power. Seeing the extent of the back drop (production and consumption both decreased by 10%), we think that the rise in the excise duty rate is the key determinant. In 2013, the negative effects of the 10 per cent-rise of the excise duty rate (reflected in higher beer prices) unfortunate confluence with relatively bad weather conditions.

5.4 Try to maintain the brewing sector's impact!

Our study emphasizes that in 2013, the Romanian brewing sector generates important stimulus to the country's economy. The production and consumption of beer creates a lot of jobs, not only in breweries, but also in the hospitality sector, the retail sector and a large set of supplying sectors (most importantly in the agricultural sector). In other words, the brewing sector delivers a significant multiplier effect on the Romanian economy. In line with this, it yields a huge added value to the economy and generates important contributions to the state budget.

However, our study also shows that the sector's impact performance is a fragile one. Changing conditions in 2013, in our opinion mainly a 10 per cent-increase in the excise duty rate of beer, resulted in a smaller impact in 2013 compared to 2012. As a foreseeable effect the 10 per cent-rise in excise duty rate resulted in a rise in the excise duty revenues for the government. However, this positive effect is completely offset by other negative impact developments. Considering benefits for the government, it can be stated that, in 2013, the rise in excise duty revenues did not fully compensate the declining beer related VAT revenues and employment taxes. Besides the 2013 net-loss of government revenues, 2013 also witnessed a huge loss of beer related employment. In this perspective, a high prices has been paid for the rise in the excise duty revenues.

Considering its influences on the sector's economic impact, it is of pivotal importance that the brewing sector anticipates and aims to turn the downward

trend of less beer production and consumption around. It is with no doubt that, the Romanian brewing sector is willing to work to maintain its impact on the country's economy in the upcoming years. However, to achieve this goal a healthy and inspiring investment climate is desirable. In opinion of the brewing sector, the Romanian government has the ability to create such an environment in three essential ways. First, by not implementing any further excise duty increases, but establishing a fair fiscal system for all excised products. Second, by enhancing the predictability of the regulatory regime (for instance, no changes in legislation in the area of advertisement contracting). And last, to secure open channels of dialogue between the brewing sector and the government.

ANNEXES

METHODOLOGY & SCOPE

This study focuses on the economic impact of the brewing sector in Romania. Our calculations were made for the year **2013**.

Some of the reported outcomes are estimates based on a **model** constructed by Regioplan Policy Research. For this reason these outcomes are not a direct representation and are dependent on decisions made by Regioplan. These decisions are elucidated in Annex III.

To represent the economic impact of the brewing sector, three different effects can be distinguished:

- direct impact;
- indirect impact; and
- induced impact

The **direct impact** is defined as the effect generated directly by the Romanian brewing sector.

The **indirect impact** represents the impact of breweries on their suppliers. To be able to produce beer, Romanian breweries need to purchase a highly diverse range of goods and services, such as cereals, hops and water, and many types of packaging materials such as glass and aluminium. They also hire engineers, marketers, communications agencies and many more services. In this study, seven supply sectors are defined as: agriculture (raw materials); utilities; packaging and bottling industry; transport and storage; media, marketing and communication; equipment, manufacturing and other industrial activities; and other services.

The sale of beer by retail outlets and hospitality establishments in Romania is the most important source of economic benefits. The economic contribution of both sectors arising from the sale of beer is labelled in this study as the brewing sector's **induced impact**.

The above-mentioned effects have been measured in three areas (**employment, value-added and government revenues**). It is important to stress that these are not additional effects, but rather three ways in which the same effects can be perceived. Together, these effects and areas result in nine dimensions:

Dimensions for measuring the economic impact

	Direct impact	Indirect impact	Induced impact
Employment	Total number of people employed by brewing companies active in Romania	Total number of jobs in the supply chain resulting from the production of beer in Romania	Total number of jobs in the hospitality and retail sector resulting from the sale of beer to Romanian consumers
Value-added	Value-added created by the brewing companies active in Romania	Value-added in supply chain resulting from the production of beer in Romania	Value-added in the hospitality and wholesale/retail sector resulting from the sale of beer to Romanian consumers
Government revenues	Excise duty revenues resulting from the sale of beer as well as income tax and social contributions from by the brewing companies active in Romania and their employees	Income tax and social contributions from employers and employees in the supply chain	VAT revenues, income tax and social contributions from employers and employees in the hospitality and wholesale/retail sector resulting from the sale of beer to Romanian consumers

Calculations

Calculations have been based on original data provided by Asociația Berarii României and four brewing companies in Romania in response to questionnaires issued by Regioplan. However, where data points are quoted, rounded figures have sometimes been used for ease of presentation. Consequently, there is not always precise correlation between total sums and corresponding data sources and the data as quoted and derived percentages. Nevertheless, this is not a material issue.

DATA SOURCES

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

- data obtained directly from Asociația Berarii României through a detailed questionnaire;
- data collected directly from four brewing companies in Romania through a detailed questionnaire;
- data from Eurostat;
- data from additional public en confidential sources, such as the European Commission;
- data used in the 2012 beer study report: *The contribution made by beer to the European economy*.

Asociația Berarii României Asociația Berarii

Asociația Berarii României Asociația Berarii României delivered us some key data on the Romanian beer market such as on the distribution channels used for beer on the Romanian beer market.

Brewing companies

The brewers received a detailed questionnaire on the companies' key (financial) data, expenditures and purchases. Four brewing companies responded to our survey, but one of them contained too few answers for calculating.

Eurostat

With specific data on the brewing sector collected through questionnaires completed by national brewing associations and beer producers, more general economic data such as economic indicators and business statistics were obtained from Eurostat. Most of the Eurostat data we used was from 2009.

The European Commission

The European Commission provided data on excise duties and government revenues from alcoholic drinks (i.e. beer, wine and spirit).

Beer Study 2012 edition

In those cases in which no new data could be obtained at all, reference was made to the 2012 study. Also the presented impact figures on the Romanian brewing sector in previous years (before 2013) obtained from this report.

MODELING DECISIONS

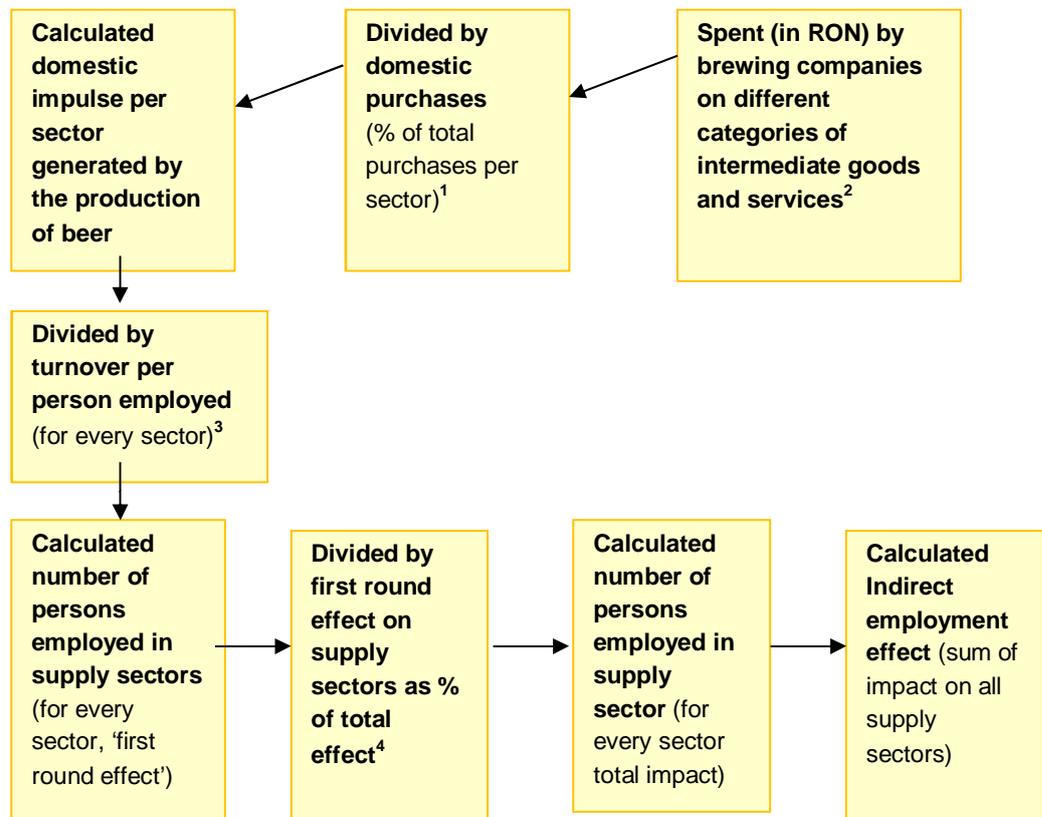
Some of the reported outcomes concerning the economic impact of the brewing sector are based on estimates, derived from a **model** constructed by Regioplan Policy Research. We illustrate here how the variables and estimates were calculated, focusing on:

- indirect and induced employment effects;
- value-added due to the production and sale of beer; and
- government revenues due to the production and sale of beer

Measuring the indirect and induced employment effects

The **indirect employment** effect is the employment generated in the supply sectors due to the production and sale of beer. See figure annex III.1 (underneath) for an explanation on how we calculated the indirect employment effect of the brewing sector.

Figure annex III.1 Model for measuring indirect employment effect



¹ Source: Questionnaires among brewing companies

² Source: Questionnaires among brewing companies

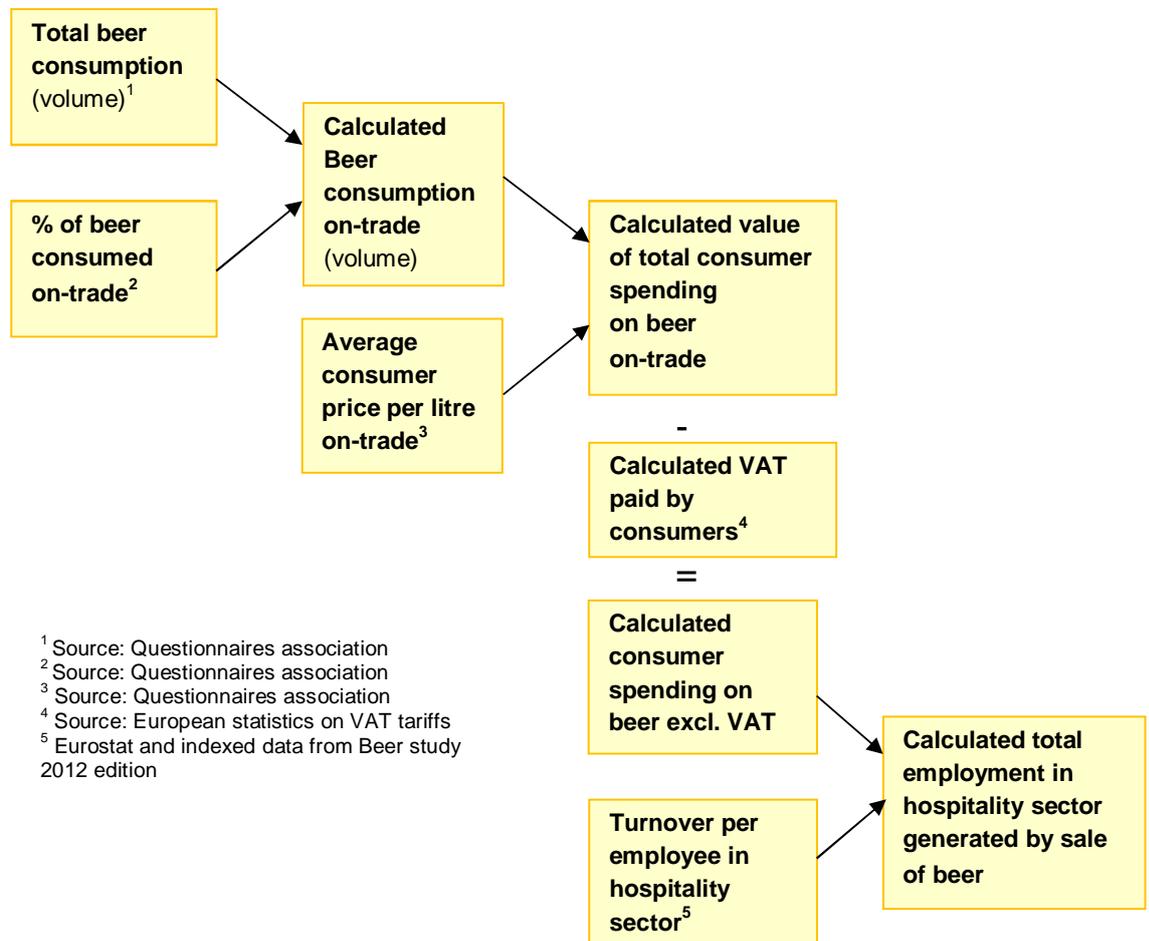
³ Source: Indexed data from Beer study 2012 edition

⁴ Source: Based on macroeconomic input output tables, we estimate that the first round indirect employment effect is approximately 65 percent of the total indirect employment effect

Data on turnover and value-added per employee per sector were obtained from the Beer Study 2012 edition.

The model for calculating **induced employment**, employment due to the sale of beer in the retail and hospitality sectors is as follows:

Figure annex III.2 Model for measuring induced employment effect



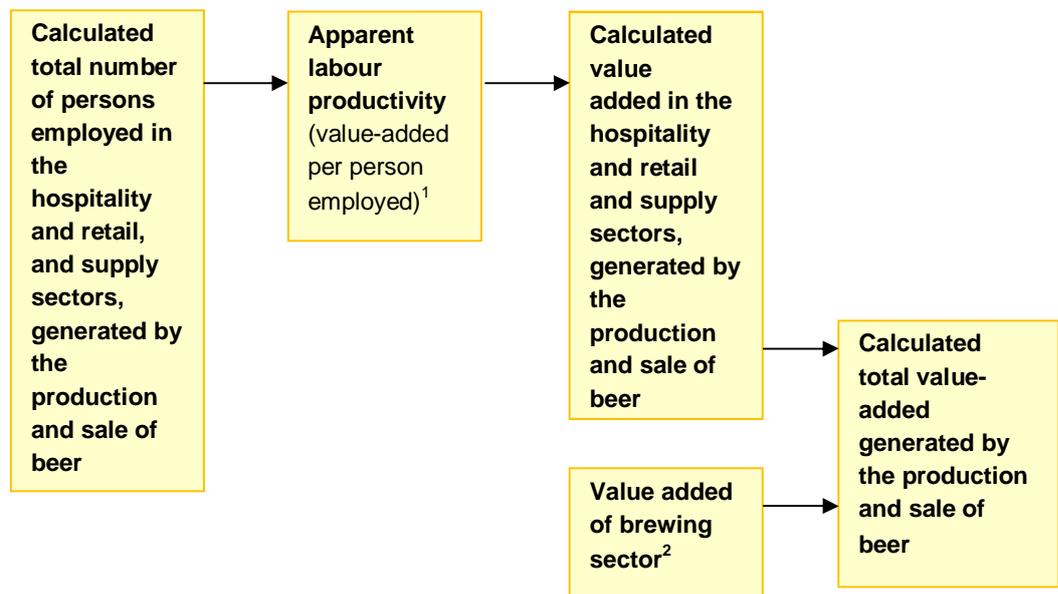
Estimates for the employment impact in the retail sector were calculated in a similar way to the hospitality sector.

Measuring the total value added generated by the production and sale of beer

The **direct value-added** in the brewing sector was obtained through the questionnaires completed by brewing companies.

The value-added in other sectors resulting from the production and sale of beer (**indirect and induced value-added**) were estimated using the employment effects. It was estimated by multiplying the employment effect by the apparent labour productivity (gross value-added per person employed) in the sector.

Figure annex III.3 Model for measuring the direct, indirect and induced value-added



¹ Source: Eurostat and European Commission

² Source: Questionnaires among brewing companies

Measuring the total government revenues due to the production and sale of beer

When it comes to government revenues generated by the brewing industry, our study sheds light on the following three segments:

- a) Excise duty revenues;
- b) VAT revenues;
- c) Income-related revenues such as social contributions.

Data on excise duty revenues were acquired from the European Commission.

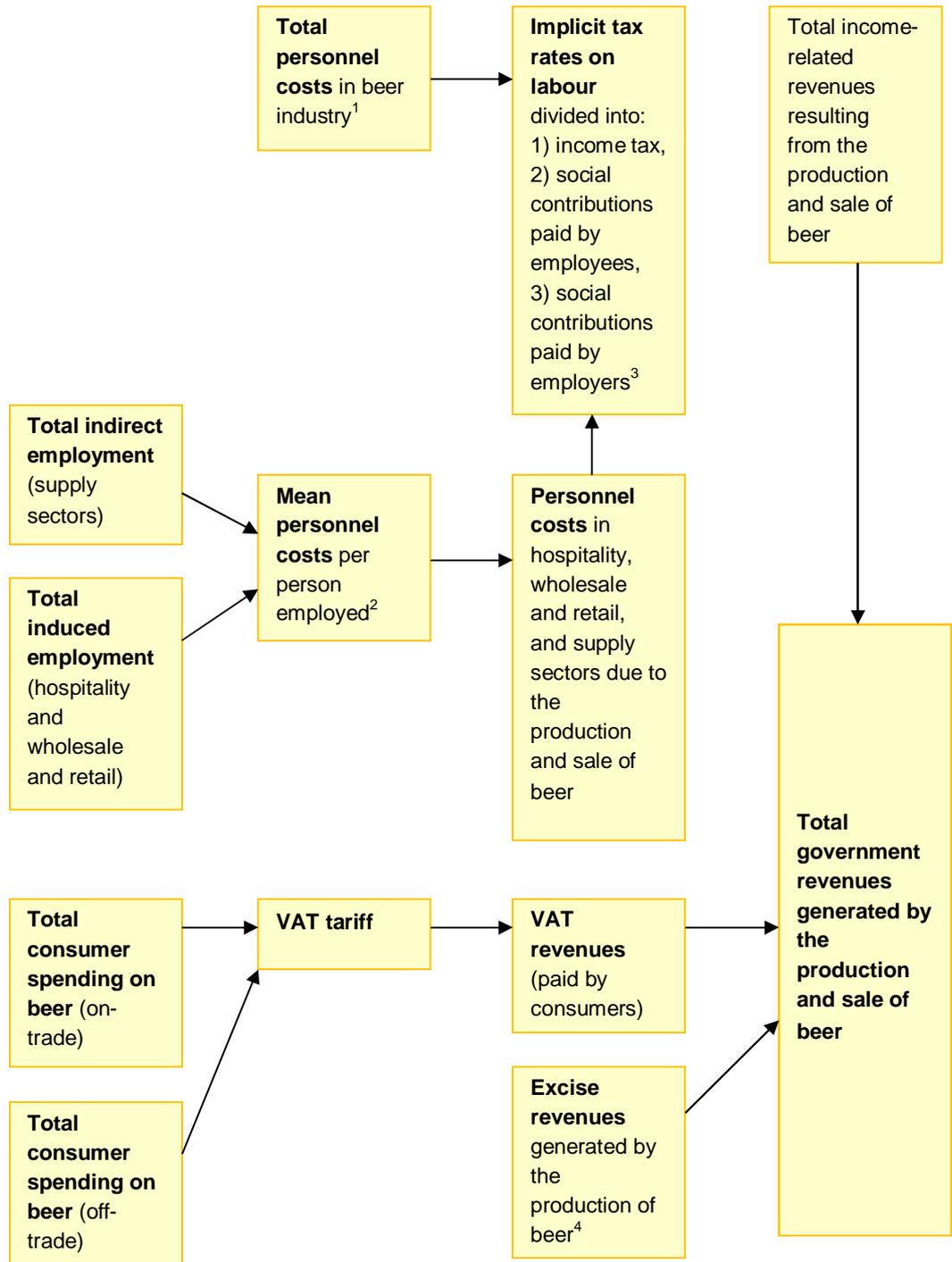
VAT revenues resulting from the sale of beer were calculated by multiplying the total on-trade and off-trade consumer spending on beer with the VAT tariff in Romania (24%).

Income-related revenues were estimated by multiplying personnel costs with implicit tax rates. The personnel costs in the brewing industry were obtained from Eurostat and from the questionnaires from breweries. Personnel costs in supply sectors, hospitality and wholesale and retail were calculated by multiplying indirect and induced employment by the mean personnel costs per person employed.

Implicit tax rates on labour were obtained from statistics from the European Commission. The implicit tax rate is the percentage of personnel costs that consists of taxes and social contributions. It encompasses the mean ratio of three concepts: 1) the income tax, 2) the social contributions paid by employees and 3) the social contributions paid by employers. The implicit tax rates made it possible to report separately on income tax revenues and social contributions.

It was not possible to take other taxes paid directly or indirectly by the brewing industry (for example corporate taxes or energy taxes) into account.

Figure annex III.4. Model for measuring government revenues



¹ Source: Questionnaires among brewing companies
² Source: Indexed data from Beer study 2012 edition
³ Source: European Commission
⁴ Source: European Commission

GLOSSARY

Alcohol by volume

Indication of alcoholic strength expressed as percentage in the final product

Brewing sector

All the brewing companies located within a certain geographical area.

Brewery

A plant or an establishment for beer production.

Brewing company

A company which produces and / or sells beer, operating one or more breweries.

Corporate tax

Corporate tax or company tax is the tax imposed on the income of companies.

Excise duty

Indirect taxes on the consumption or the use of certain products. They are mainly specific taxes, in other words, expressed as a monetary amount per quantity of the product.¹ The most commonly applied excise duties are those on alcoholic beverages, manufactured tobacco products and energy products.

GDP

Gross domestic product (GDP) is a basic measure of a country's overall economic health. As an aggregate measure of production, GDP is equal to the sum of the gross value added of all residential units (i.e. industries) engaged in production, plus any taxes, and minus any subsidies, on products not included in the value of their outputs².

GDP in PPS

Gross domestic product in purchasing power standards (GDP in PPS) is the gross domestic product (GDP) converted into purchasing power standards (PPS), an artificial currency unit. The GDP in PPS represents pure volume, after subtracting for price-level differences between countries.

¹ General Overview, Excise duties on alcohol, tobacco and energy, Taxation and Customs Union, European Commission.

² Glossary: Gross domestic product (GDP), Eurostat, European Commission.

Government revenues

The income a government receives. For the purpose of this study, it includes excise duty revenues on beer, VAT on beer sold in the on-trade and off-trade sector and all income-related revenues from jobs in the brewing sector and jobs in other sectors generated by beer production and sales. These income-related revenues include personal income tax, social security contributions paid by employees and employers and payroll taxes.

Hectolitre (hl)

A hectolitre is a metric unit of volume or capacity where one hectolitre equals 100 litres.

Indirect employment

Impact of the brewing sector on supply sectors (e.g. farmers, packaging industry) in terms of employment.

Induced employment

Employment at companies that distribute or sell beer, mainly in the wholesale, retail and hospitality sectors. For the purpose of this study, the induced employment is confined to the retail and hospitality sectors.

Inflation rate

In this report, the inflation rate refers to the rate of inflation based on the consumer price index (CPI), measuring changes in the average price level of a market-based "basket" of goods and services bought by consumers.

Off-trade sector

Beer sales through wholesale and retail (shops, supermarkets and other outlets).

On-trade sector

Beer sales through (licensed) pubs, clubs, bars, restaurants, etc., also called the hospitality sector.

Personal income tax (PIT)

A tax levied on the personal income of citizens.

Personnel cost

Total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees, as well as home-workers) in return for work done by the latter during the reference period. Personnel costs are made up of wages, salaries and employers' social security costs. They include taxes and employees' social security contributions retained by the employer, as well as the employer's compulsory and voluntary social contributions.³

³ Glossary: Personnel Cost -SBS, Eurostat, European Commission.

Production value

The actual production of a company, calculated as follows: turnover, plus or minus the changes in stocks of finished products, work in progress and goods and services purchased for resale, minus the purchases of goods and services for resale, plus capitalized production; plus other operating income (excluding subsidies). Income and expenditure classified as financial or extraordinary in company accounts are excluded from production value.

Purchases

The value of all externally sourced goods and services purchased during the accounting period for resale or consumption in the production process, excluding capital goods.

Social security contribution (SSC)

Financial contributions paid by employees and their employers giving access to the social security system and entitlement to certain benefits in situations of unemployment, sickness, disability or old age.

Value-added

Value-added is the difference between the market value and the purchasing value of the goods and services needed for production. It describes the enhancement of production on the value of a good. In the production and consumption of beer, breweries create value-added for themselves, their suppliers and for the retail and hospitality sector. Added value pays employees' wages, and rewards lenders and entrepreneurs for their investments.

VAT

Value-added tax (VAT) is a general, broadly based consumption tax assessed on the value-added to goods and services. VAT is charged as a percentage of price, meaning that the actual tax burden is visible at each stage in the production and distribution chain.⁴

⁴ Glossary: Value added tax (VAT), Eurostat, European Commission.

ACKNOWLEDGEMENTS

This is the first study on the economic impact of the brewing sector in Romania commissioned by Asociația Berarii României. A study of this scale could only be possible with the assistance of the staff of Asociația Berarii României and the six brewing companies in Romania. They all were involved by providing us the needed information. We would like to thank Asociația Berarii României and the brewing companies for their commitment to this study.

The study was conducted by a dedicated team of economic researchers from Regioplan Policy Research (see title page of this report).

Amsterdam, October 2014

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About Regioplan Policy Research

Regioplan Policy Research has been active in the Netherlands since 1983 as a policy research agency specialising in social and economic research. Our expertise covers a broad range of subjects, and we offer a number of services, such as research studies, monitoring and evaluation, policy advice, product development and secondment for most knowledge areas within policy research. In addition to assignments for Dutch organizations, Regioplan Policy Research is also very active in the international market. One of Regioplan's large international clients is the European Commission and its various Directorates General. Regioplan was a subsidiary of EY until 1 July 2008.

For more information and for new requests for proposals please consult our English pages on www.regioplan.nl

About Asociația Berarii României

Asociația Berarii României was set up upon the initiative of the most important beer producers on the Romanian market. The main mission is to promote and develop a responsible and sustainable beer industry in Romania. This because they want to ensure a healthy business environment in their sector and employees within the brewing sector.

For more information see:

<http://www.berariiromaniei.ro>

For more information about this study, please contact us.

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