The Contribution made by Beer to the European Union Economy

Edition 2010

European chapters
EU-27

The Brewers of Europe

ERNST & YOUNG
Quality In Everything We Do

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Ernst & Young Tax Advisors and Regioplan Policy Research

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Table of contents

- Key messages 1
- About the study 3

1 The EU beer market in 2009 5

2 Government revenues 9

3 Value added 13

4 Employment 15

5 Purchases made by breweries 21

6 Developments 25

Annexes

- Annex I: Methodology & scope 31
- Annex II: Data sources 33
- Annex III: Variables and estimates 35
- Annex IV: Exchange rates 39
- Annex V: Glossary 41
- Annex VI: Country abbreviations 45
- Annex VII: Contact information 47

Key messages

At the end of 2010 and beginning of 2011, Ernst & Young and Regioplan Policy Research jointly conducted for the third time, a study focusing on the economic impact of the production and sale of beer in the EU-27. Below we have listed the key economic messages from edition 2010.

Key messages on the contribution made by beer to the economy of EU-27

The brewing sector makes an important contribution to the economy of the European Union. In 2009, sales totalled 110 billion euro and 2.1 million jobs in the European Union were directly or indirectly related to the production and sale of beer. Government benefited as well as citizens. In 2009 the total government revenue from VAT, social security contributions paid by employers and employees and excise was 51 billion euro or 46% of total sales value.

Notwithstanding its economic importance, analysis shows that the brewing sector was negatively impacted by the global economic downturn in 2009. The 2009 market characteristics were:

- A total production of 386 million hectolitres of beer by the breweries in EU-27, a decrease of 6% compared to the production in 2008 (408 million hectolitres).
- Approximately 17% of EU beer production (66 million hectolitres) in 2009 was exported (both intra-EU-27 and extra-EU-27 trade); a decrease of 6% compared to 2008.
- In 2009, total beer consumption in EU-27 was 359 million hectolitres a decrease of 4% on the level in 2008.
- However, in the hospitality sector, beer sales fell by over 9% in 2009. In the off-trade sales fell by just under 1%.

The overall picture is that, compared to 2008, in 2009 the beer market has reduced in size having the following implications for the contribution of the beer industry to the economy of the European Union:

- The total number of jobs directly or indirectly related to the production and sale of beer decreased by 9% between 2008 and 2009; a loss of 200,000 jobs. This largely reflects the fall in sales in the hospitality sector where the majority (165,000) of the total jobs losses occurred .The proportion of beer consumed at home rather than in bars or restaurants increased which has a negative impact on employment and government revenues.
- The total value-added attributed to the production and sale of beer in EU-27 decreased in the same period by 8%.
- Despite rising VAT and excise rates in a number of member states, total revenues for national governments of the 27 Member States decreased by 6% (3.4 billion euro) between 2008 and 2009.

Looking to the future, the brewing sector is facing a number of developments and threats that may affect the contribution of beer to the EU economy, in particular:

- Slow economic recovery.
- Further increases in excise rates.
- Higher prices for agricultural inputs;
- Decreasing consumption of beer per capita.
- Tighter constraints on the ability to market and distribute beer.

About the study

Purpose of the study

This study was commissioned by The Brewers of Europe to quantify the economic impact of the brewing sector in the European Union. This is the third edition of the study, the first study being published in January 2006 and the second in September 2009, which also covered countries outside the EU.

Economic impact

Three different effects are considered in order to provide a complete picture of the economic impact of the brewing sector; direct effects, indirect effects and induced effects.

The **direct impact** is the effect generated directly by brewing companies.

The **indirect impact** represents the impact of beer producers on their suppliers. A highly diverse range of goods and services needs to be purchased to facilitate beer production. To mention just a selection: water, agricultural products and packaging materials such as bottles and cardboard. Breweries also hire engineers, marketers, communications agencies and many more services. This study considers six supply sectors: suppliers of raw materials, utilities, packaging industry, transport, media and marketing and other services.

The **induced impact** is the economic contribution of firms in off trade outlets and the hospitality sector arising from the sale of beers. The sale of beer by off trade outlets and hospitality firms is an important source of economic benefit. It is important to note that effects caused by the sales of other drinks in the hospitality sector (e.g. spirits and wine) are not within the scope of the study and are thus not taken into account.

We measured the effects in three areas: employment, value-added and government revenues.

Data collection

Most of the reported outcomes are based on a reuse of existing data from our 2009 study together with the following additional data:

a Statistics from The Brewers of Europe.
b Data obtained from a questionnaire completed by national associations representing the brewing sector.
c Data from the European Commission and Eurostat.

Figures for 2009

Our calculations are made for the year **2009**.

Calculations for the year 2010 were not undertaken in this report, because the most important data will not be available before May 2011. However, a further report including the figures for 2010 would be released in autumn 2011.

1 The EU beer market in 2009

1.1 Highlights

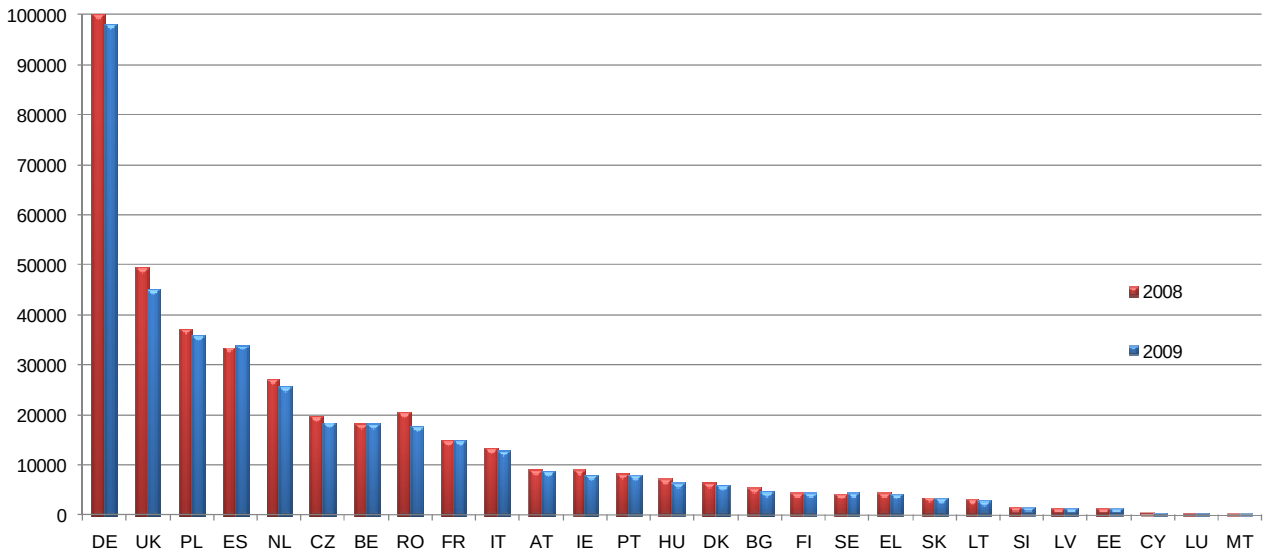
Highlights of the European beer market in the EU-27

- In 2009 the total of 3,306 breweries in the EU-27 produced 386 million hectolitres of beer. This is 6% less than in 2008 when 408 million hectolitres of beer were produced.
- Approximately 17% of the production (66 million hectolitres) is exported (both intra-EU-27 and extra-EU-27 trade).
- The annual beer consumption in the EU-27 decreased in 2009 from 374 to 359 million hectolitres, and the value of the consumption decreased from 117 to 110 billion euro (including VAT).
- This was largely driven by a fall in sales in the hospitality sector (bars, restaurants et cetera) which declined by 9.2%. Off trade sales fell by only 0.8% therefore increasing the proportion of beer consumed in the home from 60% to 62%
- Over 10% (40 million hectolitres) of the beers consumed are imported beers moving across national borders (both intra-EU-27 and extra-EU-27 trade).

1.2 Production

In 2009, 3,306 breweries (including microbreweries) produced a total of 386 million hectolitres of beer in the EU-27. In 2008 the production volume was higher; a total of 408 hectolitres.

Production per country in EU-27 (thousand hectolitres)



The EU-27 is still keeping a strong position to be one of the world's most important beer producers (386 million hectolitres), as compared with China (424 million hectolitres) and the United States (230 million hectolitres).[1]

European beer brands are sold worldwide, either brewed in Europe and exported, or produced abroad under licence or by subsidiaries of the larger European brewing companies. A significant number of independent small- and medium-sized brewing companies and microbreweries contribute to the rich variety of beer brands available to consumers.

The total number of breweries in the EU-27 decreased from 3,413 in 2008 to 3,306 in 2009. Germany has the largest number of breweries (1,327). Six other countries have more than 100 breweries each: United Kingdom (745), Italy (301), Austria (172), the Czech Republic (128), Belgium (123) and Denmark (120). In the other twenty countries, brewery numbers range from 78 in France to just one in Malta.

1.3 Exports and imports

Some 66 of the 386 million hectolitres of beer produced is exported outside national borders (around 17% of total beer production) and a volume of 40 million hectolitres is imported. These export and import figures represent flows between countries. The exact destination or origin of these exports and imports (within or outside the EU-27) could not be deduced from the figures obtained. However, based on Eurostat data[2] we estimate that, in 2008, approximately 42% of the total exports comprised exports within Europe. The other 58% was exported to countries outside Europe.[3]

The export and import figures illustrate that the beer market is an open and global one. Although consumers in many countries prefer to drink beers brewed domestically and locally, European beers are appreciated worldwide with the United States being the most important export market.

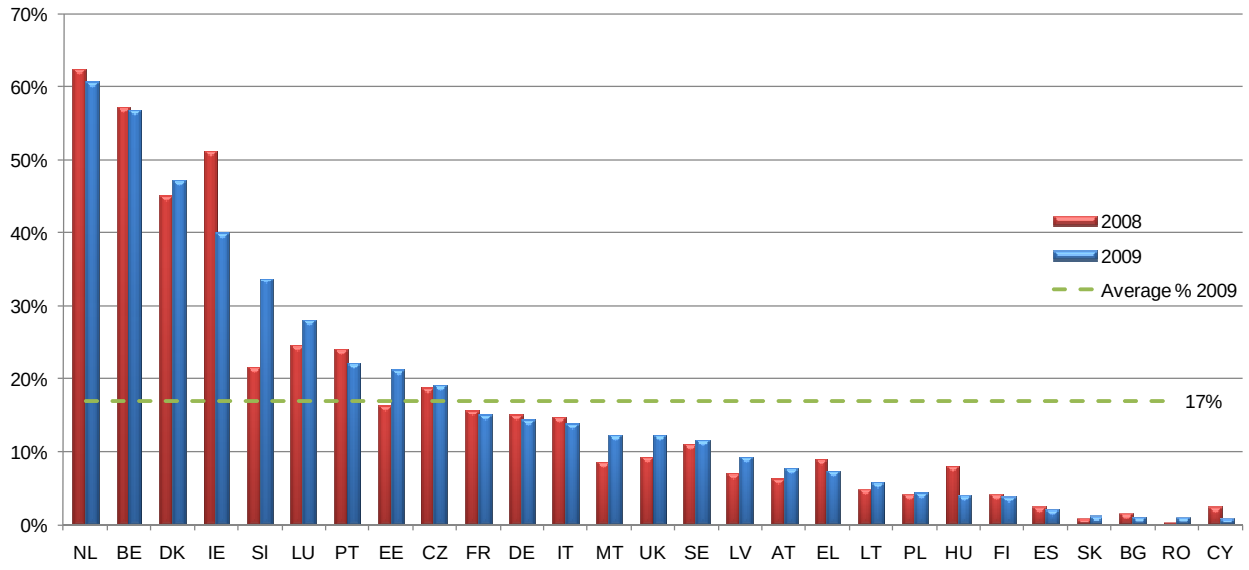
Exports are especially important for countries such as the Netherlands, Belgium, Denmark and Ireland where the percentage of exports compared to total domestic beer production is high (between 40 and 61%). The reason for the scale of exports from these countries can be explained in large part by the fact that they are home to some important multi-national brewing companies.

1 Source: Barth-Haas Group; *The Barth Report 2009-2010*.

2 Source: Eurostat*: EU27 Trade Since 1995 By SITC (DS_018995).*

3 These figures only relate to the 27 EU members. Norway, Switzerland, Croatia and Turkey are not included.

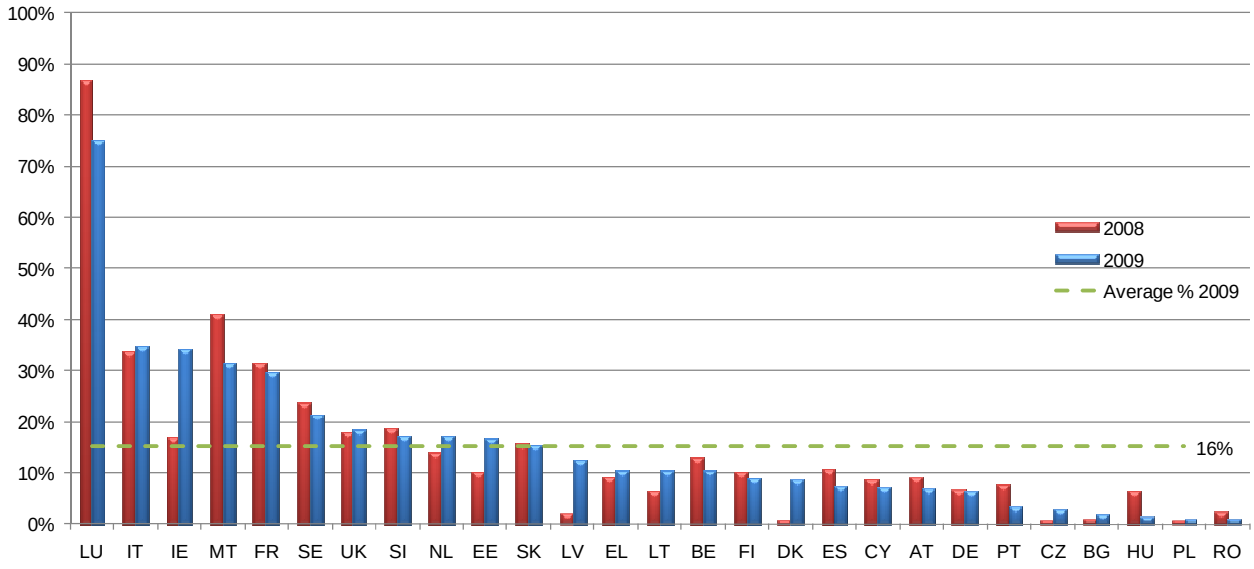
Exports as percentage of production per country in EU-27



Sources: Ernst & Young questionnaire among brewers' associations (2011); The Brewers of Europe "Beer Statistics" (2010), Canadean "Global beer trends" (2010), Eurostat.

Over 40 of the 359 million hectolitres of beer consumed in 2009 were imported (i.e. both intra-European and extra-European). The main European importers of beer are Luxembourg, Italy, Ireland, Malta and France where the percentage of imports compared to the total consumption of beer lies between 30 and 78%. For Malta and Luxembourg this can be explained by the small size of the countries. Italy and France are dominated by larger brewing companies, producing international brands.

Imports as share of consumption per country in EU-27



Sources: Ernst & Young questionnaire among brewers' associations (2011); Brewers of Europe "Beer Statistics" (2010) (based on Canadian "Global beer trends" (2010) and Eurostat).

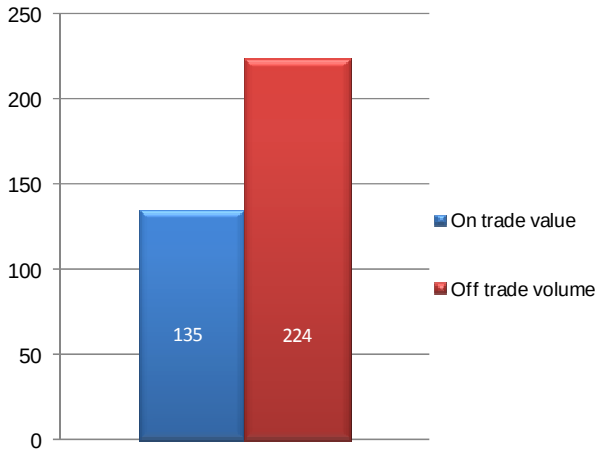
1.4 Consumption

In 2009, the consumption of beer decreased from 374 to 359 million hectolitres (EU-27), a decrease of 4%. Of this European consumption, it is estimated that over 62% is purchased in supermarkets and other retail outlets; referred to here as the 'off-trade'. The other 38% is consumed in the hospitality sector (pubs, restaurants et cetera); referred to as the 'on-trade'.

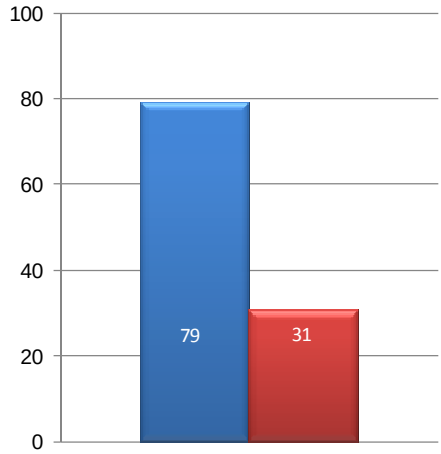
Compared to 2008, we see little increase in consumption off-trade, namely from 60 to 62%. In real terms the off-trade consumption decreased from 225.2 in 2008 to 223.8 million hectolitres in 2009, a decrease of 0.8%. However, the decrease in on-trade volume is even larger; this volume decreased from 149.1 in 2008 to 135.4 million hectolitres in 2009; equivalent to a decrease of 9.2%, representing more than eleven times the decrease in off-trade volume.

The size of the European beer market can also be estimated in euro. The total value (paid by consumers) of European beer consumption in 2009 is estimated at approximately 110 billion euro (including VAT). In 2008 the total value was 117 billion euro. As in 2008, 72% of this figure is represented by turnover in pubs and restaurants. In terms of euro the retail channel is less important.

Volume in million hl in EU-27



Value in billion euro in EU-27



Source: Ernst & Young calculation based on input from the National Brewery Associations (2011); Brewers of Europe "Beer Statistics" (2010).

1.5 Profitability

In 2009 PriceWaterhouseCoopers carried out an analysis for The Brewers of Europe on the costs of producing beer.[4] One of their findings is that beer is the most expensive form of alcohol to produce. Another main conclusion is that, compared to the other types of alcohol, beer achieves the smallest net margin per volume of finished product. It is only because of the high volumes sold that beer attains a large total margin.

[4] Source: PriceWaterhouseCoopers, Taxing the brewing sector: a European analysis of the costs of producing beer and the impact of excise duties, 2010.

2 Government revenues

2.1 Highlights

Highlights of government revenues in EU-27

- Total government revenues arising from beer in terms of VAT, excise, income taxes, payroll taxes and social security contributions are estimated at 51 billion euro, a decrease of 6% (3.4 billion euro) compared to 2008.
- Of the taxes and contributions included in our calculations, the most important is VAT, followed by social security contributions paid by employers and employees.
- Excise revenues, estimated at approximately 8.7 billion euro, also contribute significantly. Total excise duty revenue declined by 10% in 2009. This is despite increases in excise duty rates in 11 member states during this period.

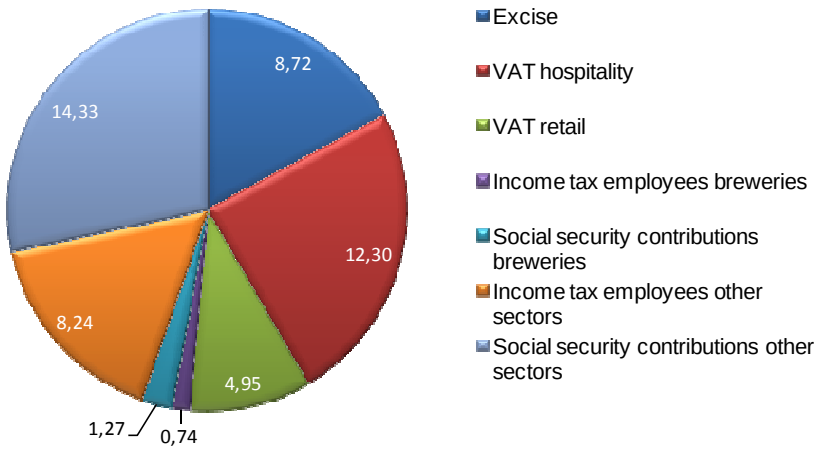
2.2 Government revenues

National governments benefit substantially from the production and sale of beer by receiving excise revenues, VAT revenues, income-related 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'. In addition to these taxes, governments also benefit from corporate taxes, property taxes, community taxes, environmental taxes (such as climate change levy), vehicle excise duty and stamp duty land tax.

The total revenues from the beer sector for governments in 27 European Union countries are almost 51 billion euro in 2009. This compares with 54 billion euro in 2008, a decrease of 6% (3.4 billion).[5] These revenues include only VAT, excises, income taxes, social security contributions and payroll taxes. Other taxes were not taken into account in this study.

5 Source: European Commission, Excise duty tables, July 2010. For the year 2008 we had to make a recalculation for the amount of excises. In the 2008 report we partly used information on excises delivered by national associations, for 2009 we could only use the statistics of the European Commission on excise revenues. To be able to compare the 2008 and 2009 figures, we had to recalculate the 2008 figures and base them solely on information of the Commission.

Government revenues due to the production and sale of beer in EU-27: 50.6 billion euro



Source: Ernst & Young calculation (2011).

A rough estimate of government revenues at European level (2008) from corporate and environmental taxes were respectively € 1.150 billion and € 125 million[6]. As these taxes and other taxes such as property taxes, community taxes and vehicle excise duties are not included in our estimate of government revenues; real government revenues from taxes will be even higher than our estimated 51 billion euro per year.

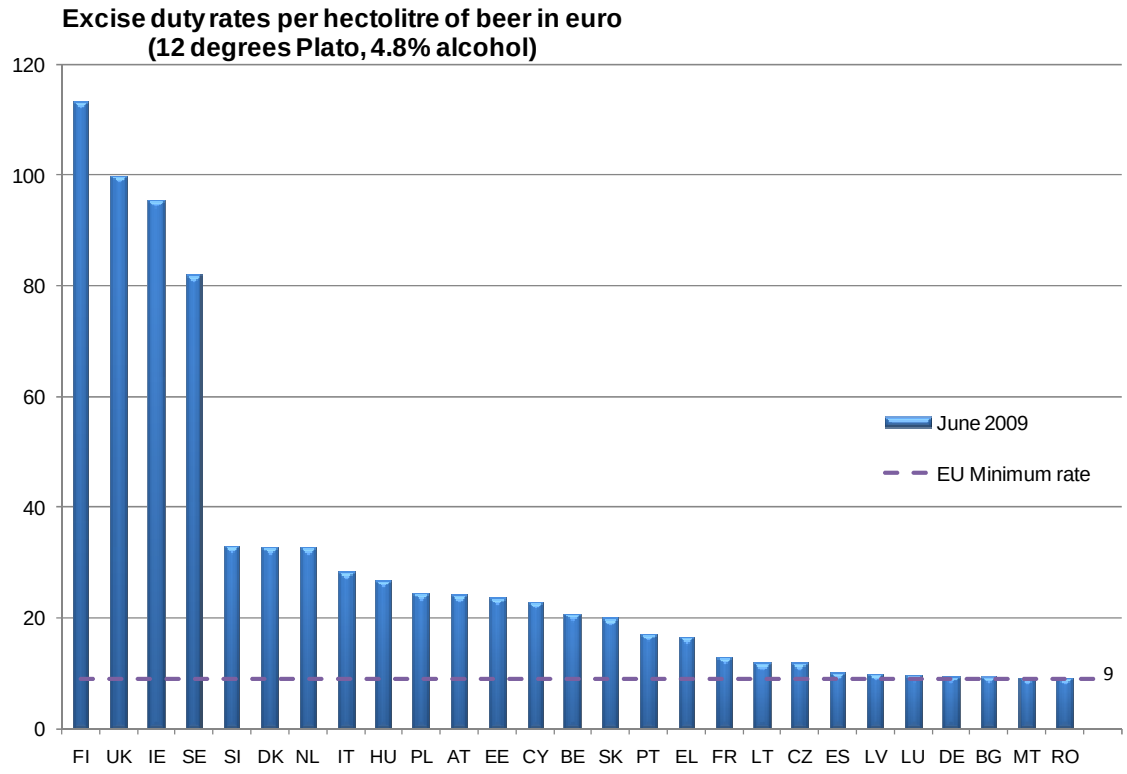
The most important source of European government revenues is Value Added Taxes (VAT). European consumers pay an average of 19.7% VAT on their beer consumption. In 2008, the average VAT rate was 19.5%. In five countries VAT has increased and in two countries it has decreased. VAT revenues on beer sales in the retail and hospitality sector are estimated at 17.3 billion euro. In 2008 the governments collected 18.9 billion euro of VAT revenues, a decrease of more than 8%. This percentage is relativity high in view of the fact that not only was less beer consumed, but also relativity more beer was purchased in supermarkets where the average price of beer is significantly lower and, so also less VAT is collected by the government.

Excise revenues also contribute significantly to the national treasuries. These revenues are estimated at approximately 8.7 billion euro in 2009. This compares with 9.7 billion euro in 2008, a decrease of 11%.[7] This is despite 11 countries increasing excise duty rates during this period. The total revenues from VAT and excises decreased from 28.7 in 2008 to 26.0 billion euro in 2009.

It should also be noted that Member States are free to set excise rates at the level they chose, as long it is greater than or equal to the EU minimum rate. For 2009, the base year of our calculations, the variation in excise rates is shown by the figure below.

6 Ernst and Young, Contribution of the brewing sector to European economy, September 2009.

7 Source: European Commission, Excise duty tables, July 2010. For the year 2008 we had to make a recalculation for the amount of excises. In the 2008 report we partly used information on excises delivered by national associations, for 2009 we could only use the statistics of the European Commission on excise revenues. To be able to compare the 2008 and 2009 figures, we had to recalculate the 2008 figures and base them solely on information of the Commission.



Source: European Commission, The Brewers of Europe; situation as on June 2009

Another source of government revenue consists of income and payroll taxes and social security contributions paid by employers and employees. These taxes and contributions are paid by employers and employees in the brewing sector, the supplying sectors, in retail and in the hospitality sector where jobs can be attributed to the production and sale of beer. We estimate these income-related taxes and contributions in 2009 to be 24.6 billion euro; in 2008 this figure was 26.0.

The decrease in revenues is not the only impact on the national governments in the Member States as a result of a reduction in the size of the European beer market. There are also significant job losses as a result of this downsize in the market. This will result in additional government spending on social security payments. In this study we did not attempt to quantify this additional cost impact on governments.

3 Value added

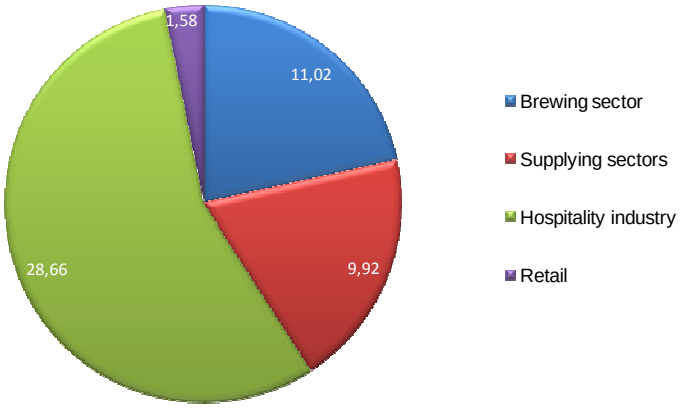
3.1 Highlights

Highlights of value-added in EU-27
– The total value-added created directly and indirectly by beer in EU-27 is estimated at approximately 51 billion euro, which means a decrease of 8% compared to 2008 (55 billion).
– Compared to other sectors, employees of European brewery companies have a relatively high productivity.

3.2 Value-added by sector

Another contribution of the beer industry is the value-added it creates, and the value-added created by the supplying, retail and hospitality sectors. Value-added can be defined as the difference between the production value and the value of purchased inputs (goods and services). In economic terminology, value-added is also defined as the reward for all production factors (mainly labour, capital, entrepreneurship). For the governments in Europe, the value-added is important because they levy a tax on it (VAT, see chapter 2). We estimate the total value-added related to the production and sale of beer in the European economy was approximately 51 billion euro in 2009. In 2008, the total value-added amounted to 55 billion euro.

Value added due to the production and sale of beer in EU-27: 51.18 billion euro



Source: Ernst & Young calculation (2011) (see Annex III for an explanation on methodology).

This total of 51 billion euro of value-added is generated by 2.1 million employees working in the brewing sector, in the supplying sectors and the hospitality and retail sectors. This only includes jobs relating to beer; jobs due to other sectors are not included. The average value-added per employee is therefore some 24,339[8] euro a year.

The average value-added per European brewery employee is far higher, i.e. approximately 83,295 euro per year. This illustrates the relatively high productivity of employees in the brewing sector in comparison with other sectors. The average brewery productivity in terms of value-added per employee is also much higher than the average productivity in other industrial sectors such as packaging and equipment.

The total value-added related to the production and sale of beer (51 billion euro) can be compared to the gross domestic product of countries like Slovakia (63 billion euro in 2009).[9] The total gross domestic product (GDP) of the European Union (EU-27) was some 11,791[10] billion euro in 2009. This means that the brewing sector's contribution to the European economy is approximately 0.43% of total GDP.

8 This is calculated as follows: 51.19 billion euro divided by 2.1 million employees.

9 Source: Eurostat, Annual national accounts, 2009.

10 EY data calculation based on: Eurostat, Annual national accounts, 2009.

4 Employment

4.1 Highlights

Highlights of employment effect of beer in EU-27

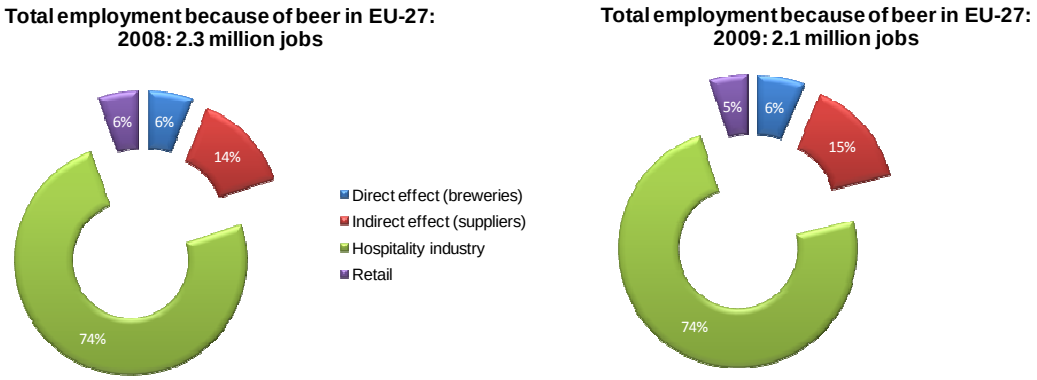
- Compared to 2008, in 2009 the total employment in EU-27 which could be attributed to the production and sale of beer, decreased by 9% (from 2.3 million jobs in 2008 to 2.1 million in 2009).
- The majority of jobs lost (163,000) were in the hospitality sector.
- Approximately 6% of these jobs were created directly by the breweries in the 27 countries.
- For each job in the European brewing sector, one job is generated in retail, 2 in the supplying sectors and 12 in the hospitality sector.
- 1% of all jobs in the European Union (EU-27) can be attributed to the production and sale of beer.

4.2 Total employment

The EU-27 has a strong brewing sector which has a heavy expenditure on goods and services within EU-27, (see the next chapter). The consumption of beer also leads to a large turnover in the retail and hospitality sectors. Considering this, it is not surprising that the contribution of beer to the European economy is considerable. One of the main effects is the employment generated from the production and sale of beer. In 2009, 3,306 breweries in the EU-27 gave rise to 2.1 million jobs. However, this means a decrease of more than 200,000 jobs in comparison to 2008. In 2009 particularly the absolute number of 'jobs relating to beer' in the hospitality sector decreased significantly.

If we express this figure as a share of the total number of jobs in EU-27 (approximately 210 million jobs[11]), it becomes clear that approximately 1% of all jobs can be attributed to the production and sale of beer. The total employment effect of the brewing sector is comparable to the total employment of countries such as Finland (2.5 million jobs[12]) or Slovakia (2.4 million jobs).

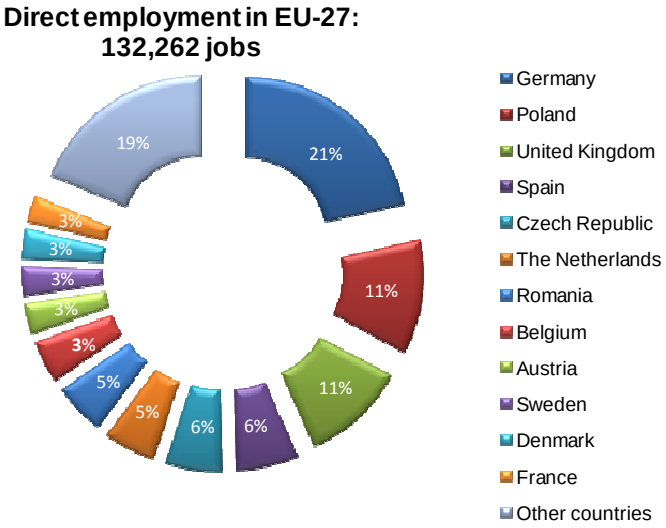
11 Estimate based on Eurostat: European Union Labour Force Survey, 2009.
12 Source: Eurostat: European Union Labour Force Survey, 2009.



Source: Ernst & Young calculation (2011) (see Annex III for an explanation of the methodology).

4.3 Direct employment

European breweries together provide more than 132.000 jobs; this is the so-called direct employment effect. This represents a decrease on the 2008 data (141.000 jobs); in other words a decrease of more than 6%.

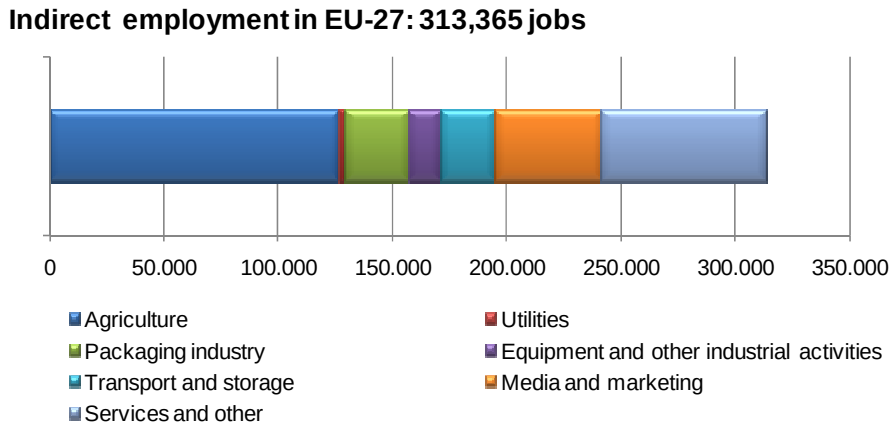


Source: Ernst & Young calculation (2011) (see Annex III for an explanation on the methodology).

Germany has the largest number of employees (approximately 28.000 jobs) followed by Poland and United Kingdom.

4.4 Indirect employment

The brewing sector also generates a considerable indirect employment effect. The production and sale of beer by breweries is only possible because various sectors provide the necessary goods and services, ranging from barley, malt and hops to energy and transportation capacity, and a variety of industrial products and services. Based on the information collected for the 2009 study, we estimate that more than 310.000 jobs of the total number of jobs in these supplying sectors can be attributed to the production and sales of beer. The number of jobs in 2008 was nearly 320,000. This is a decrease in employment of 2%.



Source: Ernst & Young calculation (2011) (see Annex III for an explanation on the methodology).

For the 2009 study we calculated that 40% of the total purchases made by European breweries involved the services sectors (including marketing and media), and 18% the agricultural sector. In 2009 we also calculated that the services sector and media and marketing sectors together generated 38% of the indirect employment, and agriculture 40%. The share of the agricultural sector in the employment effect is much higher than its share in the total purchases by the brewing sector. Although 40% of the total number of jobs generated by the brewing sector consists of jobs in agriculture, only 18% of purchases by breweries occur in this sector. This is explained by the relatively low turnover and labour costs per employee in the agricultural sector in comparison with other sectors.

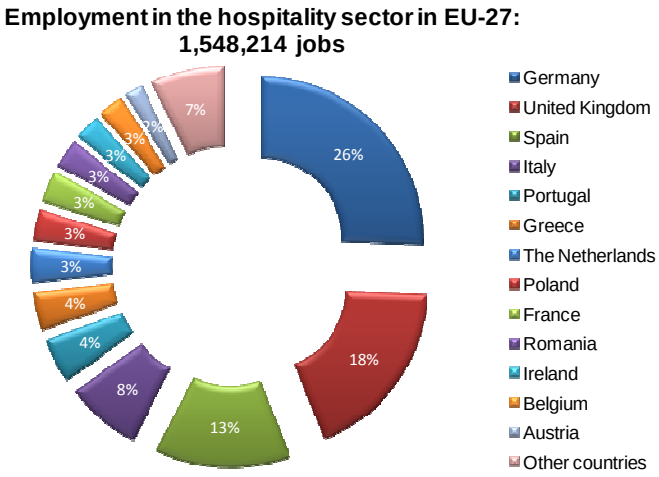
4.5 Induced employment

In addition to the direct and indirect impact of the brewing sector, the number of jobs created by beer sales in the hospitality and retail sectors exhibits a far greater effect.

Hospitality sector

Of the total jobs in the hospitality sector, over 1.5 million can be attributed to the sales of beer.[13] The other jobs in the hospitality sector can be attributed to the sale of other products such as food, wine and/or spirits. In 2008, more than 1.7 million jobs were attributed to the sale of beer, so the employment effect of beer in the hospitality sector decreased by more than 10%.

[13] In 2008 the total number of jobs in the hospitality was 11.7 million.

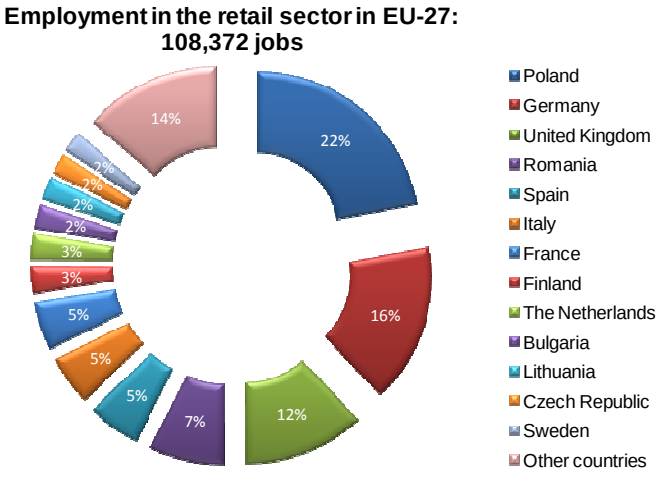


Source: Ernst & Young calculation (2011) (see Annex III for an explanation on methodology).

Compared to other sectors, the number of jobs created by beer in the hospitality sector is relatively large. This can be explained by the relatively low turnover per employee in that sector. It is also the reason that the 2009 loss in consumer spending in the hospitality sector (as a result of the combined effect of the economic crisis and the trend to drink more at home instead of in bars and restaurants) has the largest effect on the employment figures in the hospitality sector.

Retail sector

In the retail sector almost 110,000 jobs can be attributed entirely to the sales of beer. In 2008 there were almost 130,000 retail jobs due to beer; in other words a decrease of 16%. The main explanation for this decrease in retail jobs is a large increase in the turnover per person employed in the retail sector in the same period.



Source: Ernst & Young calculation (2011) (see Annex III for an explanation on methodology).

Hospitality versus retail

In countries where the majority of beer is sold in the hospitality sector, the induced employment effect is shown to be very high. Examples are Ireland, Portugal and Greece with over 60% of beer being sold in pubs and restaurants. In 15 countries the on-trade consumption decreased in 2009, in 9 countries it remained stable and in 3 countries it increased.

5 Purchases made by breweries

5.1 Highlights

Highlights of purchases made by breweries in EU-27
– Expenditure of breweries in EU-27 on goods and services was 21.3 billion euro in 2009, in 2008 it amounted to 23.3 billion euro; in other words a fall of 2 billion euro in spending.
– Most money was spent in the services sector, agriculture and the packaging industry.
– Europe is worldwide the number-one producer of malting barley. The existence of a strong brewing sector is the main reason for this.

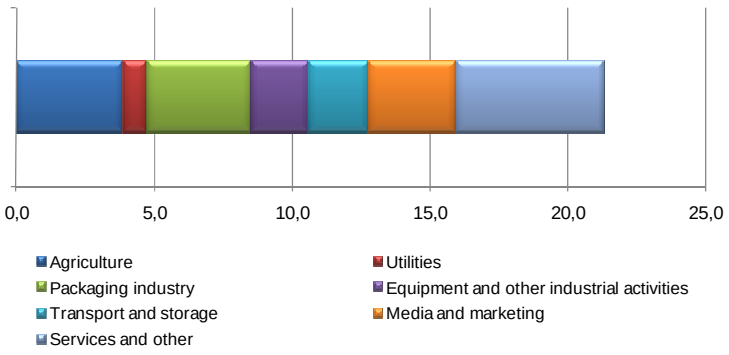
5.2 Purchases by sector

The annual production of 386 million hectolitres of beer is only possible because various sectors provide the necessary goods and services, ranging from barley, malt and hops to energy, transportation capacity and a variety of industrial products and services.

Based on information on purchase management by individual breweries collected for our former study, we estimate that in 2009 the brewing sector purchased goods and services from supplying sectors with a value of 21.3 billion euro (compared to 23.3 billion euro in 2008).

Breweries do not buy all purchases in their own countries, some of these goods and services are imported. In our calculations of the other economic impacts of beer (see the previous three chapters), imported purchases have not been taken into account. This is because we have no information about the country of origin of these imports (within or outside EU27). It does however mean that it can be said that the economic impact of the brewery sector would be even greater than that calculated in our study if imported goods and services were taken into account.

Purchases of goods and services in billion euro in EU-27



Source: Ernst & Young calculation (2011) (see Annex III for an explanation of the methodology).

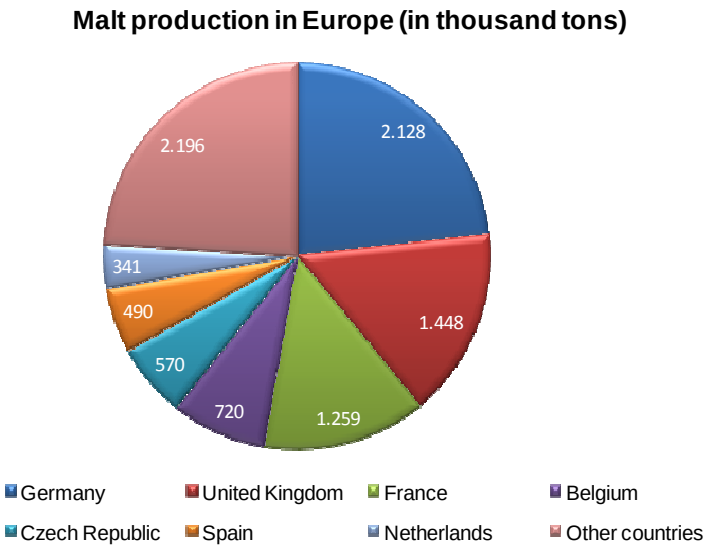
In 2009 we calculated that a large share (40%) of the purchases made by European breweries is carried out in the services sector (including marketing and media). Another important supplying sector for breweries is agriculture and packaging. Some 18% of breweries' expenditure is in these two sectors. We assumed these percentages are the same as in the previous study. Because of time constraints, it was not feasible to update our information on purchase management. Thus, we do not know if the economic crises have impacted this area, e.g. resulting in an expenditure drop on advertising and media.

5.3 Hops, malting barley and malt

The key ingredients of beer are malting barley, malt and hops. Europe is worldwide one of the main producers of these ingredients. The existence of a strong brewing sector is the main reason for this

Malting barley and malt

Europe is the world's largest producer of malting barley. In 2007 some 55% of the global output was produced in Europe.[14] Germany, the United Kingdom and France are major producers of malt in Europe.[15] The production of malt increased from 8,803 million tons in 2008 to 9,152 million tons in 2009.

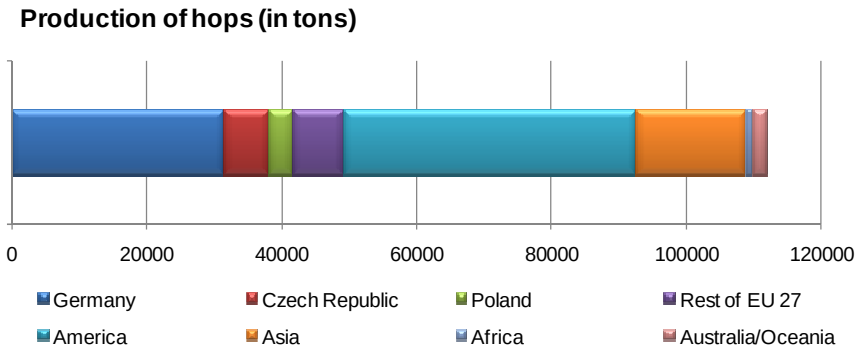


Source: Euromalt, EU malt production (2009)

Hops

Around 44% hops produced worldwide is of European origin. Germany is by far the most important hops-producing country, followed by the Czech Republic and Poland. The United States accounts for some 39% of global hop production.[16] In 2009, the production of hops in the USA increased (from 30%) and the production in Europe decreased (from 53%). On the world market the decreased production of hops in Europe is not compensated by a higher production in the USA, therefore the world market price of hops increased in 2009.

14 EUROMALT does not publish statistics on the EU malting barley production anymore.
15 Euromalt homepage, data on malt production (2009).
16 Barth-Haas group, The Barth Report (2009/2010).



Source: Barth-Haas group, The Barth Report (2009/2010)

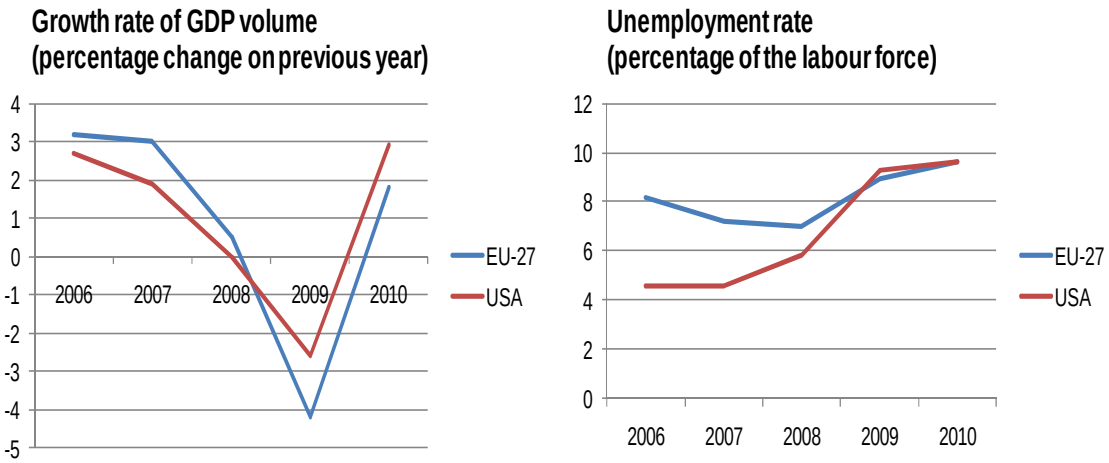
6 Developments

The European brewing sector operates in a complex and rapidly changing environment. Some developments, such as changes in the international economic situation or the regulatory environment, have influenced the contribution of beer to the economy in recent years, and may inhibit this contribution in the years ahead.

Based on a literature study and questionnaires returned from 18 national associations of EU Member States, it is possible to identify the most important developments for the brewing sector.

Worldwide economic crisis

The figures below indicate that the last three years were difficult for the global economy. In 2009, the macro economic situation was probably the worst.



Source: Eurostat. The percentages for 2010 are forecasts and not definitive figures.

The worldwide economic crisis has had an inevitable impact on the European brewing sector. In 2009, production, exports and sales in the hospitality and retail sectors declined in the EU. Production and export figures for 2009 show an overall drop of 6% in comparison to 2008, while consumption decreased by 4%. The decline in volumes sold was exacerbated in value terms as a result of some consumers moving to cheaper brands or other types of beer. A shift from draught to cheaper bottled beer has been confirmed in the Czech Republic, whilst in Poland, a predominantly beer consuming country, increasingly people are drinking homebrewed beer than beer offered in the respective sales channels. A growing cross-border trade has also been observed in Poland and Sweden[17].

[17] Feedback to questionnaires from national brewers' associations.

Also important is the consumer trend, enhanced by the economic crisis, of shifting from on-trade to cheaper off-trade consumption. Thus more beer is consumed at home (off-trade) rather than in the pub or other hospitality locations (on-trade). This trend is observed in more than half of the 27 Member States.

This shift to home consumption may be due to the overall economic situation and the price difference between beer in the hospitality sector and the retail sector, but it may also be due to other interventions (i.e. smoking bans in bars and licensing regulations) that have led some consumers to change their consumption behaviour. An important factor in terms of price differences is how excise duty changes pass-through in to prices (see below).

The induced employment effect[18] of on-trade consumption is higher than the employment effect of off-trade consumption. This is explained by the much lower turnover per employee in the hospitality sector in comparison with the retail sector. The consequence of this switch from on-trade consumption to off-trade consumption is that less jobs are created for each hectolitre of beer sold.

Higher prices for agricultural inputs

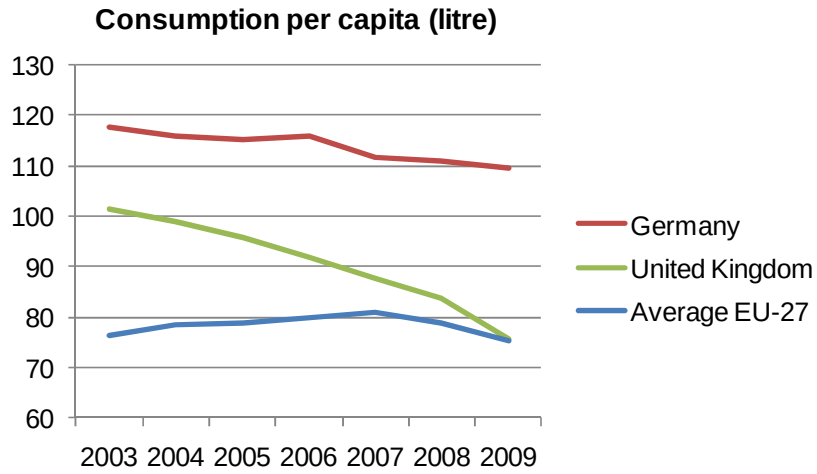
In 2009 the brewing sector was once again confronted with higher prices of agricultural ingredients for beer production. This was because the worldwide production of hops decreased as a result of poor harvests in Europe in the year(s) before, which led to a very tight world market for hops. In most cases the increases in prices of agricultural inputs for beer have led to an increase in beer prices. These are inevitable because of the small profit margin of beer. Higher prices affect the demand for beer which, in turn leads to a decrease in consumption.

In 2011 the sector will be confronted with the effects of the poor 2010 harvest of malting barley in the Ukraine, as drought cut brewing-quality output from European Union producers. This will result in higher prices. At the end of 2010, malting barley prices had more than doubled since May 2010. In November 2010, French winter malting barley prices increased €7 month on month to €194 per tonne, while spring barley was up €6 at €212 per tonne. As a result of these higher prices, some breweries may be forced to use lower-quality feed barley to make their beer, while others will use the more expensive malting barley. This will once again lead to higher prices for beer. Higher prices of malting barley already have been considered as a threat for the brewing sector by national brewers' associations of Germany, Latvia, the Netherlands and Slovakia.

Decreasing consumption of beer per capita

Another perceived challenge for the brewing sector is the decreasing consumption of beer per capita. This has been a long-term, as showed in the graphs below. Figures are shown for EU-27, Germany and the United Kingdom. These individual countries are chosen because, in absolute terms (hectoliters), consumption in these countries is the largest.

18 See Annex I for an explanation of the induced employment effect.



Source: Canadean Global beer trends 2009 edition

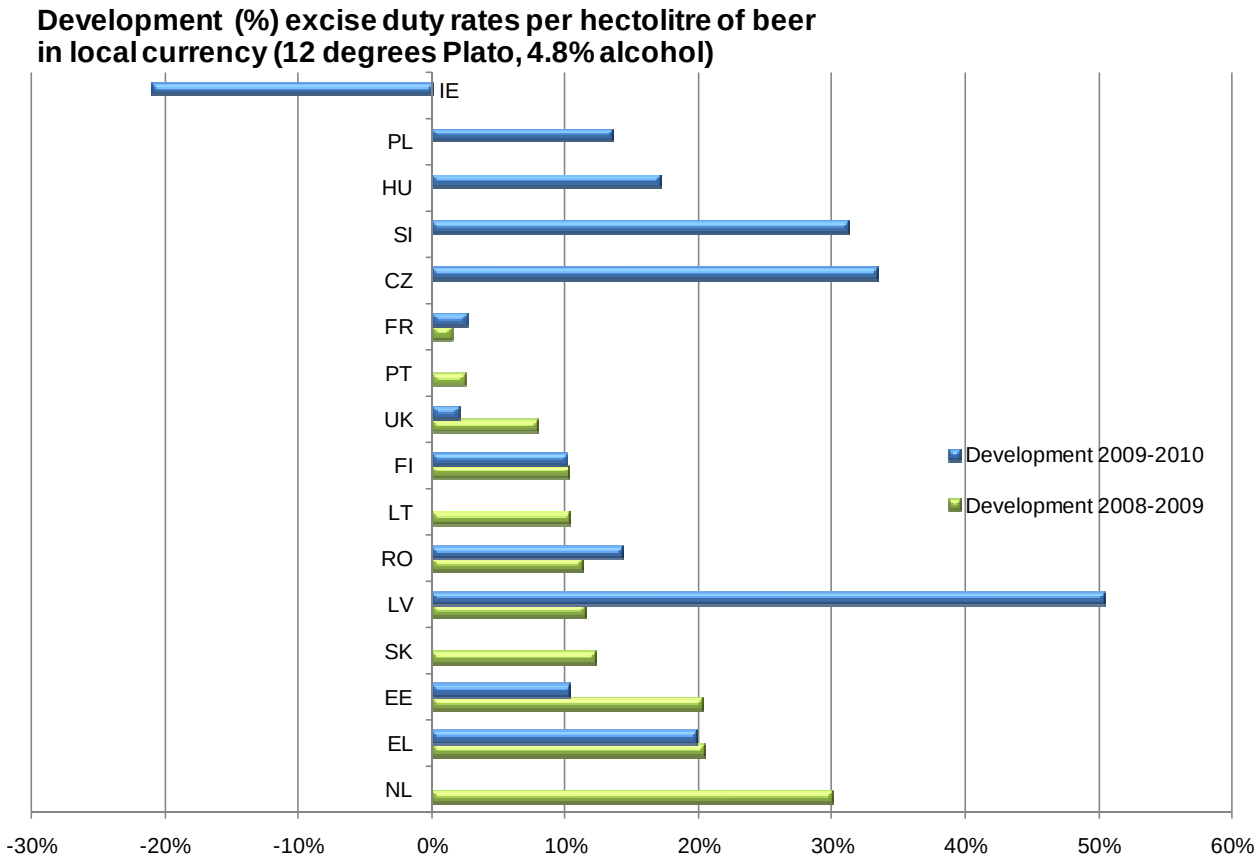
Recently the German statistics office released the news that in 2010, Germans for the fourth year in a row, have been drinking less beer. Also in our study 14 of the 18 responding national associations referred to a decrease in consumption of beer per person as an important threat to the sector.

Increasing fiscal pressure

The recent economic crisis has caused a sharp escalation of government deficits, which turned into a public debt crisis in several countries, most notably in Greece. Faced with the need to bring public debt under control, governments were forced to raise revenues and lower their expenditures. Drawing on past experience, increasing excise duties on alcoholic beverages is often considered an easy target for revenue rising.

In the period between 2008 and June 2010, in ten EU Member States, the excise rate on beer has remained stable for the whole period[19]. In most of the other countries, the excise rate has been increased; the largest increases being in Latvia, Slovenia, Czech Republic; further exacerbating the decline in sales in those markets. Substantial increases also occurred in Norway and Turkey.

[19] These ten countries are Austria, Cyprus, Belgium, Bulgaria, Denmark, Germany, Italy, Luxembourg, Malta and Sweden.



Source: European Commission, The Brewers of Europe; situation as on January 2008, June 2009 and June 2010

It is realistic to assume that a part of the decrease in beer consumption in the European Union can be explained by the rise in excise rates in some of its Member States, which have impacted consumption in the rest of the EU[20]. The explanation is that excise and VAT tax rises are to some extent passed on in consumer prices. In addition, it is important to note that the demand for beer is price elastic. This means that a higher price (here due to a rise in the excise and VAT rate) leads to a decrease in demand for beer. The level of passing on is higher in the hospitality sector than in the retail sector, and the demand for beer is also more price elastic in the hospitality sector. This means that the same percentage increase in leads to a higher fall in consumption in the hospitality than in the retail sector. Combining these research findings[21] would mean that higher excise rates will decrease the consumption of beer in the hospitality sector to an even greater extent than in the retail sector. However, our calculations also show that the sale of beer in the hospitality sector gives rise to relatively more jobs than in the retail sector. Tax revenues are also higher when beer is consumed in bars and restaurants.

There has also been fiscal pressure on other taxes such as VAT. Those fiscal constraints, due to government deficits in Member States, are expected to continue in 2011 and beyond, due to economic conditions and obligations resulting from the EU's Stability and Growth pact and related measures. Additionally, pressure may also increase if the European Commission decides to change its tax policy towards different categories of beverages.

[20] Source: PriceWaterhouseCoopers, Taxing the brewing sector: a European analysis of the costs of producing beer and the impact of excise duties, 2010.
[21] Idem.

The current framework for beer taxation is encompassed within the directive on structures of alcohol taxation (Council Directive 92/83/EEC). This directive was designed to harmonise the structures of alcohol taxation i.e. specifying the categories of products subject to excise duty arrangements, amongst other things. In addition, Directive 92/84 laid down minimum rates for the categories of products whereby, as long as these minimum rates were met, Member States could have a degree of flexibility in setting the levels of taxation they consider appropriate to their own circumstances. Both these directives have remained largely unchanged since 1992 and modernisation of this framework might be considered.

Moreover, some national associations have drawn attention to the large differences in taxation between different kinds of alcoholic beverages in their countries. Beer is taxed heavier than for example, wine. In some countries the latter has a zero excise rate. The difference has been exacerbated in countries like the Czech Republic or Greece, with negative effects on the consumption of beer, and on the brewing sector.

Tighter constraints on distribution and advertising

In every European country there are self-regulatory mechanisms in place within companies, trade associations and across the advertising industry, to help ensure that advertising is carried out in a responsible manner, for example by only being targeted at audiences above the legal purchasing ages. However, there are some countries where governments put in place legislation that further restricts or even bans the marketing of beer using certain media. This includes either total bans on TV advertising, or partial bans restricting advertising until after a certain time of day. There are also national bans in place with regard to product placement or the sponsorship of certain activities. All these restrictions have an obvious impact on the ability of beer to contribute to the economy directly or through support to, and financing of, the media and advertising industries.

Furthermore, there are also pieces of national legislation that restrict the places and hours of sale for alcoholic beverages, and also laws with regard to certain pricing promotions. Such laws also impact upon the contribution made by beer to the European economy and may affect the opportunities for beer to contribute to the European economy through its distribution in both the on-trade and the retail sectors.

The recently adopted WHO Global Strategy to reduce the harmful use of alcohol[22] highlights some of these restrictions as possible policies to be implemented by national governments.

[22] Resolution WHA63.13 "Global strategy to reduce the harmful use of alcohol" adopted by the World Health Assembly on 20th May 2010.

Annex I: Methodology & scope

This study focuses on the economic impact of the brewing sector in **27 European Union Member States**. Although the brewing sector is international in scope and many brewing companies are organisations operating as multinationals, the analyses were carried out at country level. In this manner, the impact on individual national economies could be measured.

The base year for the analysis is **2009**. If data were not available for this year, data for 2008 and in some exceptional cases, 2007 data were used.

Some of the reported outcomes were estimated on the basis of a **model** constructed by Ernst & Young. For this reason these outcomes are not a direct representation and are dependent on estimates made by Ernst & Young. These decisions are elucidated in Annex III.

To represent the economic impact of the brewing sector, three different effects were considered as follows:

- direct impact
- indirect impact
- induced impact

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

The **indirect impact** represents the impact of breweries on their suppliers. To be able to produce beer, breweries need to purchase a highly diverse range of goods and services. To mention just a selection: barley, malt, hops, water and many types of packaging materials such as glass and aluminium. Breweries also employ engineers, marketers, communications agencies and many more services. In this study, six supplying sectors are included: agriculture, utilities, packaging industry, transport, media, marketing and other services.

The sale of beer by retail outlets and hospitality companies is an important source of economic benefit. The economic contribution of firms in the retail and hospitality sectors arising from the sale of beer is identified in this study as the brewing sector's **induced impact**.

The abovementioned effects have been measured in three areas (**employment, value added and government revenues**). Together this generates nine dimensions:

	Direct impact	Indirect impact	Induced impact
Employment	Total number of jobs in the brewing sector	Total number of jobs in supplying sectors resulting from the production and sale of beer	Total number of jobs in the hospitality and wholesale/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 wholesale/ retail sector resulting from the sale of beer
Government Revenues	Excise revenues resulting from the production and sale of beer and income tax and social contributions from employers and employees in the brewing industry	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 wholesale/retail sector resulting from the sale of beer

Annex II: Data sources

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

a Data obtained from a questionnaire completed by national associations representing the brewing sector.
b Statistics obtained from The Brewers of Europe.
c Data from Eurostat and the European Commission.
d Data used in the 2008 study: The Contribution Made by Beer to the European Economy.

Sub a

The **national brewing associations** have been a major source of valuable data. 20 of the 27 associations completed a detailed questionnaire. The elements of this questionnaire were consumer prices in the on-trade and off-trade sectors, distribution margins of production sold on-trade and off-trade and the most important developments and threats in the beer sector in their countries.

Sub b

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 particular countries, for example: data on production, consumption and direct employment in the brewing sector.

Sub c

Whereas specific data on the brewing sector were collected through questionnaires completed by national brewing associations and breweries, more general data on individual European economies were obtained from **Eurostat and the European Commission**. Eurostat statistics provided useful data on labour costs, turnover and value-added per employee generally covering all or most of the countries considered. The European Commission provide data about excise duties and social security contributions.

Sub d

We agreed with The Brewers of Europe to use the percentages of the division of purchased goods among supply sectors from the **2008 study.** Furthermore, only in exceptional cases, where no new data could be obtained at all, data were used from the 2008 study. For countries where we had to reuse the consumer prices of 2008, prices were indexed by inflation.

Annex III: Variables and estimates

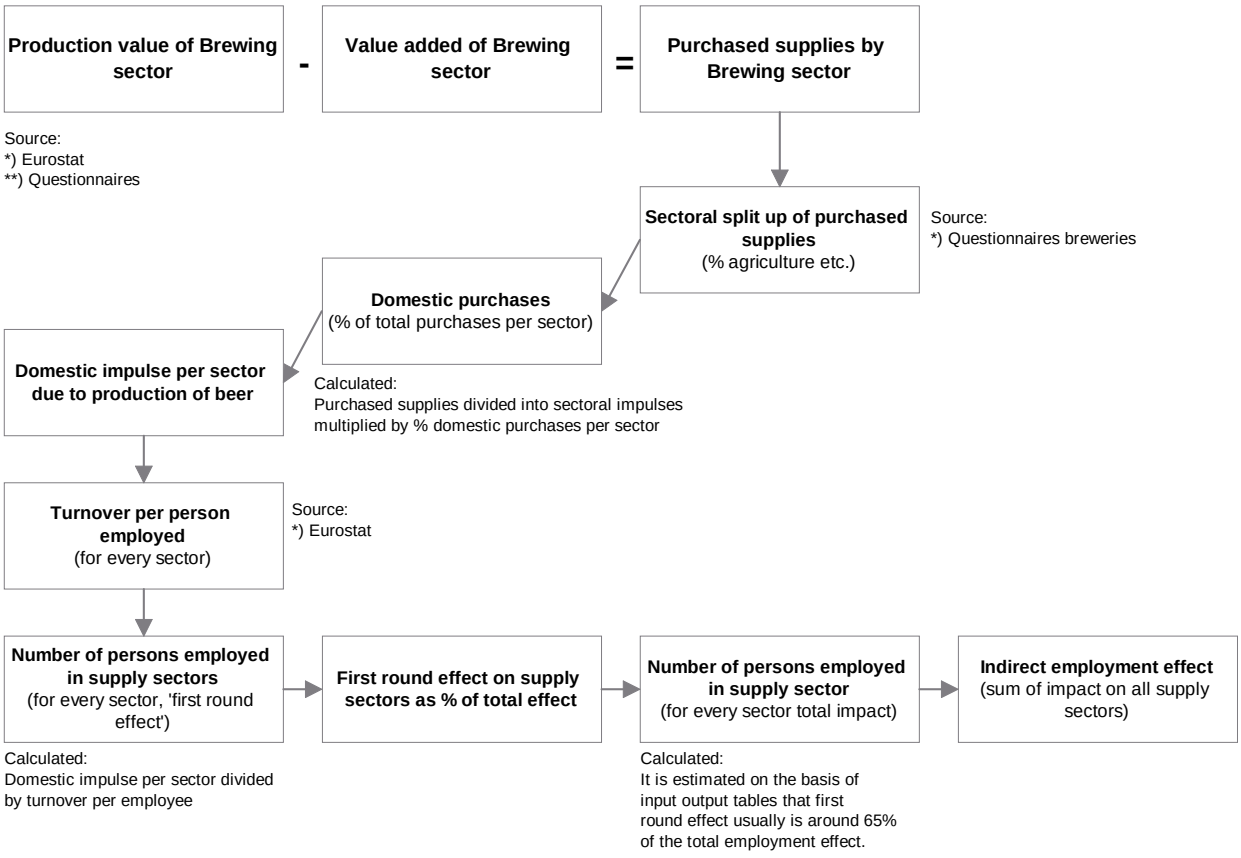
Some of the reported outcomes concerning the economic impact of the brewing sector are based on estimates. These estimates derived from a **model** constructed by Ernst & Young. We illustrate here how these variables have been estimated, focusing on:

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

Employment effects

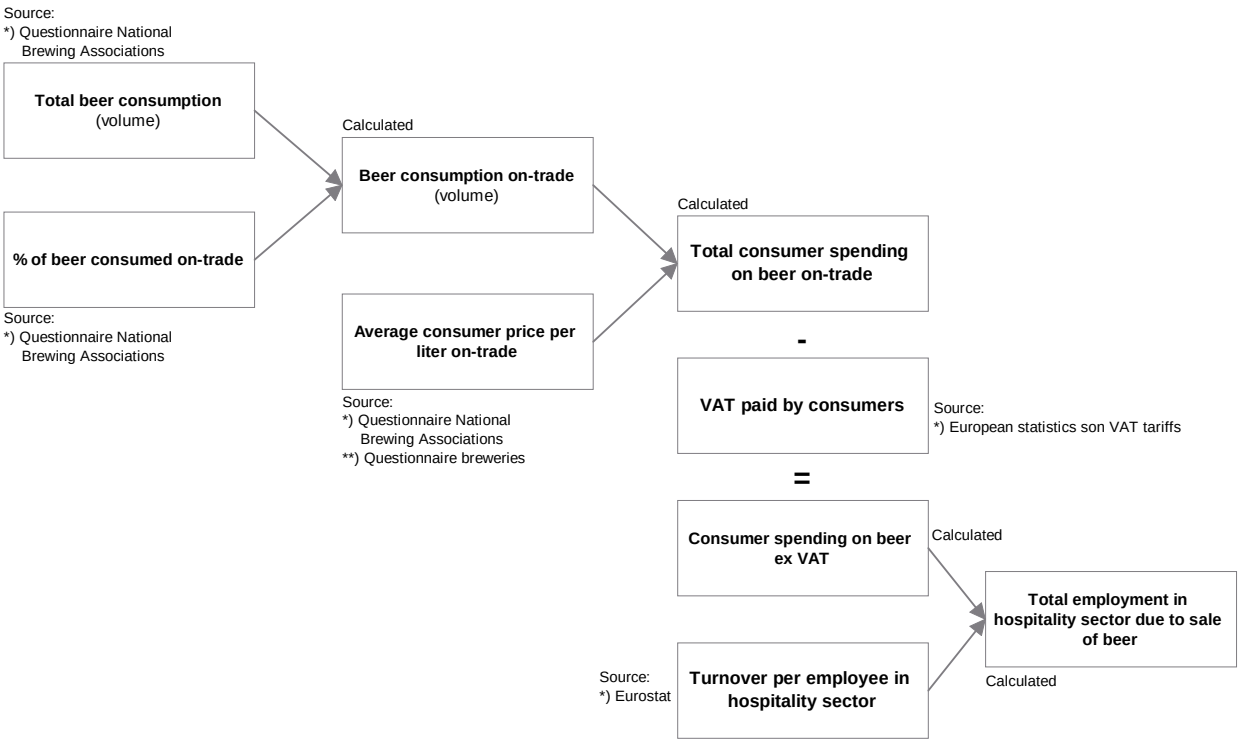
The **direct employment** effect signifies the number of people employed in the brewing sector. The data on direct employment were obtained from statistics from The Brewers of Europe and the questionnaire returns from national brewing associations. If these sources were not available, alternative sources (mainly Eurostat) were used.

The **indirect employment** effect concerns the employment generated in supply sectors due to the production and sale of beer. The starting point of the estimates on indirect employment is the impact in supply sectors resulting from purchases made by the brewing sector.



Data on turnover and value added per employee per sector were obtained from Eurostat. For sector data, NACE codes (classification of economic activities by the European Union) were used: for agriculture data with NACE code A (agriculture, forestry and fishing) were used; packaging industry and equipment (C manufacturing); utilities (E electricity, gas, water supply); wholesale and retail[23] (G wholesale and retail trade; repair of motor vehicles and motorcycles); hospitality (H Hotels and restaurants); transport (I Transport storage and communication); marketing and services and other (K retail renting and business activities).

The **induced employment** effect, resulting in employment due to the sale of beer in the hospitality sector and in retail, was estimated as follows:

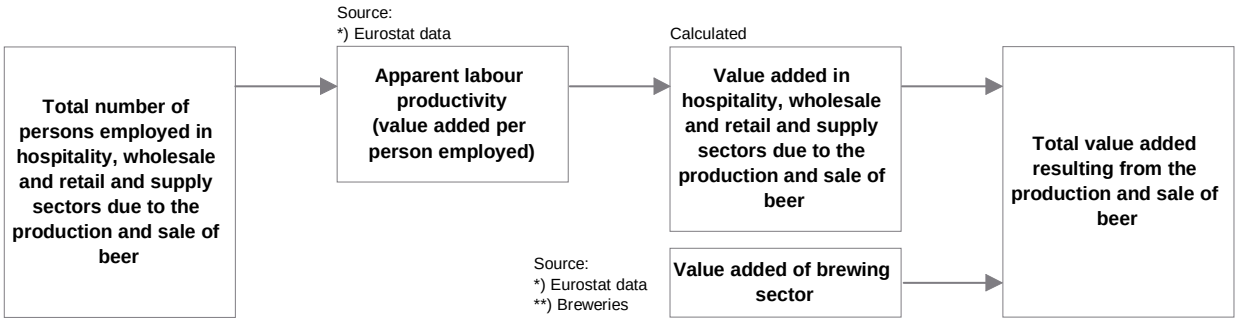


Illustrated, is the way the employment impact on the hospitality sector was estimated. Estimates for retail are made in a similar way.

Value-added due to the production and sale of beer

The **direct value-added** in the brewing sector was obtained through the questionnaires completed by breweries and brewing associations and through Eurostat data. The value-added in other sectors resulting from the production and sale of beer (**indirect and induced value-added**) was estimated on the basis of employment effects. The value-added in a particular sector was estimated by multiplying the employment effect by the apparent labour productivity (Gross value added per person employed) in the sector. If no data on labour productivity for a particular country were available, estimates were made based on statistics of national statistics agencies or the OECD.

23 The percentage of added-value on beer in the wholesale and retail sector differs significantly from other products. For this reason NACE code G5225 (Retail sale of alcoholic and other beverages) has been used for the added-value per employee in wholesale and retail.



Government revenues due to the production and sale of beer

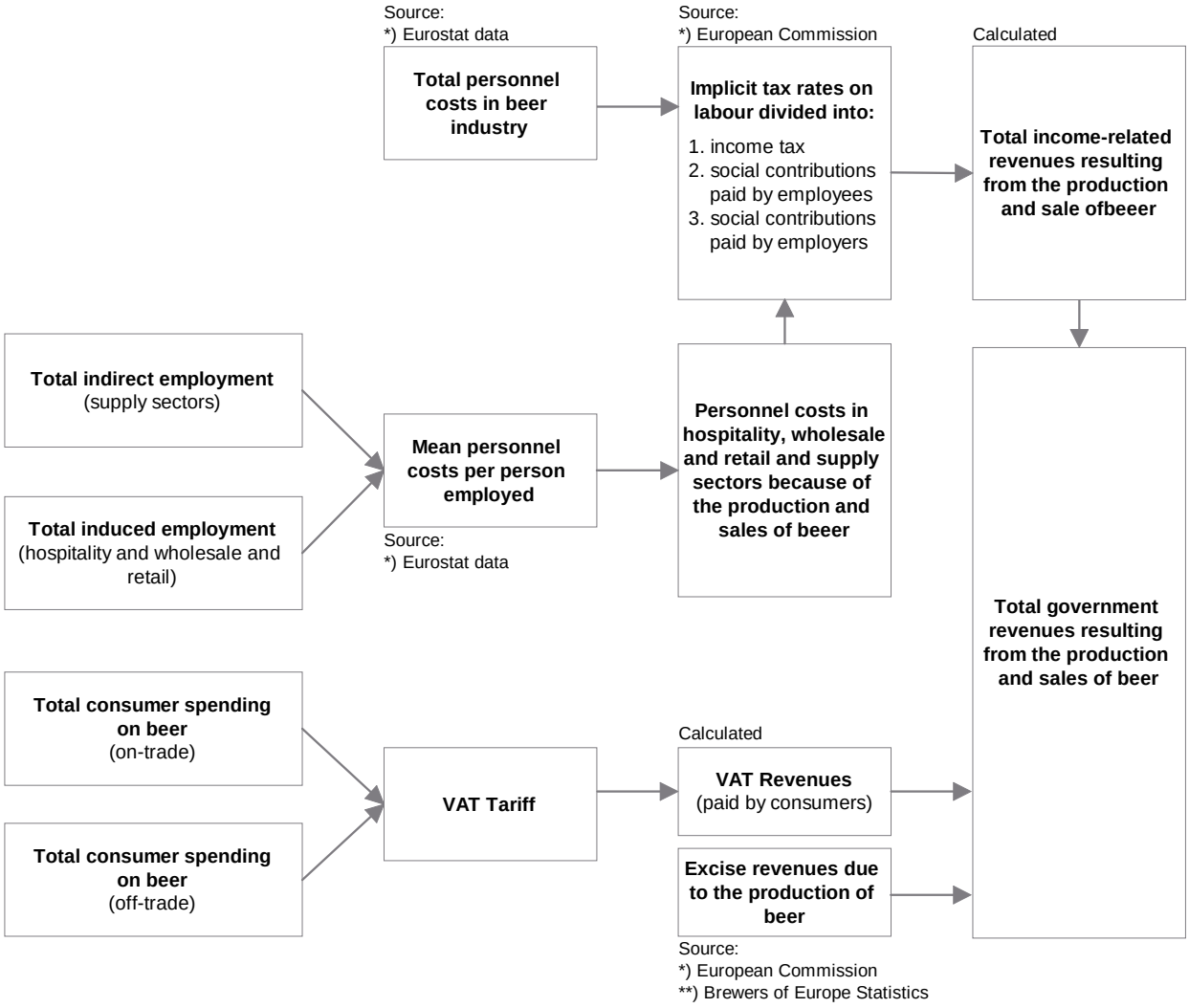
The government revenues due to the brewing industry consist of three segments:

- Excise revenues
- VAT revenues
- Income-related revenues

Data on **excise revenues** were obtained from the European Commission and from statistics from The Brewers of Europe. **VAT revenues** resulting from the sale of beer were calculated by multiplying the total consumer spending on beer (on-trade and off-trade) in a particular country.

Income-related revenues were estimated by multiplying personnel costs with implicit tax rates. The personnel costs in the brewing industry were obtained directly from Eurostat. 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 according to Eurostat.

Implicit tax rates on labour were obtained from statistics from the European Commission. 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. Using implicit tax rates it was possible to report separately on income tax revenues and social contributions.


Source:
*) Eurostat data
Total personnel costs in beer industry
Source:
*) European Commission
Implicit tax rates on labour divided into:
1. income tax
2. social contributions paid by employees
3. social contributions paid by employers
Calculated
Total income-related revenues resulting from the production and sale ofbeeer
Total indirect employment (supply sectors)
Total induced employment (hospitality and wholesale and retail)
Mean personnel costs per person employed
Source:
*) Eurostat data
Personnel costs in hospitality, wholesale and retail and supply sectors because of the production and sales of beeer
Total government revenues resulting from the production and sales of beer
Total consumer spending on beer (on-trade)
Total consumer spending on beer (off-trade)
VAT Tariff
Calculated
VAT Revenues (paid by consumers)
Excise revenues due to the production of beer
Source:
*) European Commission
**) Brewers of Europe Statistics

Annex IV: Exchange rates

Since most data sources used for the study apply to the year 2009, the mean exchange rates of that year were used for the majority of data calculations. For data that applied to an earlier period, mean exchange rates of 2008 were used.

Exchange rates used in the report

Currency	Mean euro exchange rate in 2008	Mean euro exchange rate in 2009
Bulgarian Lev	1.9558	1.9558
Czech Koruny	24.946	26.435
Danish Krone	7.4560	7.4462
Estonian Krooni	15.6466	15.6466
Hungarian Forint	251.5121	280.3270
Latvia Lats	0.7027	0.7057
Lithuanian Litas	3.4528	3.4528
Polish Zlotych	3.5121	4.3276
Romanian Lei	3.6826	4.2399
Slovakian Koruna	31.2617	-
Swedish Krone	9.6152	10.6191
UK Pound Sterling	0.79628	0.89094

Source: www.statistics.dnb.nl

Annex V: Glossary

Backward linkage	See indirect employment
Bottom up approach	Analysis of the direct, indirect and induced effects, taking a selection of brewing companies as a starting point.
Brewing sector	All the brewing companies located within a certain geographical area. These companies may also be involved in activities other than brewing beer, such as the production of soft drinks and bottled mineral water.
Brewery	A plant where beer is produced by fermentation.
Brewing company	A company which produces and/or sells beer.
Direct employment	Employment, value-added and tax revenues for governments generated directly by the brewing sector.
EU27	27 Member States of the European Union (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom).
Excise	A taxation on the production volume, rather than the production value, of a certain good. In the case of beer it is often related to the amount of alcohol released for consumption.
Exports	The annual volume of beer sold and shipped to foreign countries. Both intra-European (within Europe) as well extra-European (to countries outside Europe) flows are included in this figure.
First round employment effect	The number of jobs directly generated in supplying sectors by purchases of the brewing sector. The employment that is generated by purchases of these supplying sectors is not included.
Forward linkage	See induced employment.
FTEs	Full time equivalents.
Government revenues	Amount of money received by the government from outside the government entity. In this study they include excise revenues on beer, VAT on beer sold in hospitality and retail sectors and all labour-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 social security contributions and payroll taxes paid by employers.

Hectolitre (hl)	One hectolitre equals 100 litres.
Implicit tax rate on labour	Ratio of taxes and social security contributions on employed labour income to total compensation of employees. It is the sum of all direct and indirect taxes and employees' and employers' social contributions levied on employed labour income divided by the total compensation of employees working in the economic territory increased by taxes on wage bills and payroll.
Indirect employment	Impact of the brewing sector on supplying sectors in terms of employment or value-added. For example: farmers selling hops or barley or manufacturing industry producing bottles, cans, kegs or brewing equipment.
Induced employment	Employment at companies that distribute or sell beer, mainly in the wholesale, retail and hospitality sectors. For example: bartenders, waitresses and shopkeepers. For this study the induced employment is confined to the retail and hospitality sectors.
Input output table	A detailed matrix containing data on how much one industry purchases from other industries. These tables were used to calculate the purchases of the brewing sector from supplying industries.
Imports	The annual volume of beer bought and brought in from foreign countries. Both intra European (within Europe) as well extra European (from countries outside Europe) flows are included in this figure.
Multiplier	The multiplier in this study is defined as indirect employment divided by direct employment. Multipliers can also be estimated for induced impact and they can be expressed in terms of employment and in terms of value-added.
On-trade	Beer sales through (licensed) pubs, clubs, bars, restaurants and the like.
Off-trade	Beer sales through shops, supermarkets and other retail outlets.
Personal income tax	A tax levied on the personal income of people. In this study taxes on income out of labour generated by beer production and sales are included in the figures.
Personnel costs	The total remuneration payable by an employer to an employee in return for work done by the latter during the reference period. Besides salary, personnel costs also include taxes and employees' social security contributions retained as well as the employer's social contributions.
PET bottle	A bottle made of polyester (polyethylene terephthalate).

Production Value	The amount actually produced by the unit, based on sales, including changes in stocks and the resale of goods and services. The production value is defined as 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 capitalised production, plus other operating income (excluding subsidies). Income and expenditure classified as financial or extraordinary in company accounts is excluded from production value.
Purchases of goods	The value of all goods and services purchased during the and services accounting period for resale or consumption in the production process, excluding capital goods. It refers to externally-bought products and services.
Social security contributions	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.
SSC	See: Social security contributions.
Top down approach	Analysis of the direct, indirect and induced effects, taking existing statistics as a starting point.
Value-added	Difference between the production value and the value of purchased inputs (goods and services). In economic terminology value-added is also defined as the reward for all production factors (mainly labour, capital, entrepreneurship).
VAT	Value Added Tax.

Annex VI: Country abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom
USA	United States of America
EU	European Union

Annex VII: Contact information

About Ernst & Young

Ernst & Young is a global leader in assurance, tax, transaction and advisory services, aiming to have a positive impact on businesses and markets, as well as on society as a whole. With its global network and 135,000 employees the foundation is laid for the success of its clients. To this end the right multi-disciplinary team is assembled for each business, drawing on a global talent pool, helping to achieve the potential of each of its clients. Ernst & Young works closely with its clients, gaining a clear understanding of their organisation and striving to identify issues before they become problems. Ernst & Young ensures its clients gain fast access to the people they need, wherever in the world they need them. And with a global focus on 14 Global Industry Sectors, clients benefit from a market-leading global response to their specific needs.

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For more information and for new requests for proposals please consult our international webpage at http://www.regioplan.nl/pagina/english

About The Brewers of Europe

The Brewers of Europe, founded in 1958 and based in Brussels, is the voice of the European brewing sector towards the European Union institutions and international organisations. Currently it has 27 members, comprising 24 national brewing associations from most EU Member States, plus Norway, Switzerland and Turkey.

For more see:
www.brewersofeurope.org

For more information about this study, please contact us. See below for contact details.

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