



# The Contribution made by Beer to the European Economy

European Chapters  
Edition 2009



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Ernst & Young Tax Advisors and Regioplan Policy Research



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# About the study

## Second edition

This Contribution made by Beer to the European Economy report is the second edition; the first was published in January 2006. The report has been compiled by Ernst & Young, Regioplan Policy Research and The Brewers of Europe members. A separate EU-27 edition is available and can be requested at [info@brewersofeurope.org](mailto:info@brewersofeurope.org).

## Methodology

The study focuses on the economic impact of the brewing sector in 27 European Union Member States plus four other countries (Croatia, Norway, Switzerland and Turkey). The methodology used for estimating this economic impact is described in Annexes I to III. Annex VI reports on the differences between the 2006 study and this current one.

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## About The Brewers of Europe

For European institutions and international organisations, The Brewers of Europe, founded in 1958 and based in Brussels, is the voice of the European brewing sector. It has 27 members, comprising 24 national brewers' associations from EU Member States plus Norway, Switzerland and Turkey. For more information: [www.brewersofeurope.org](http://www.brewersofeurope.org).





# Key messages

In the spring of 2009 Ernst & Young carried out a study on the impact of the production and sale of beer. This study was commissioned by The Brewers of Europe and covered 31 countries in Europe: the EU-27, Norway, Switzerland, Croatia, and Turkey. Our study makes clear that in 2009 beer's contribution to the European economy is still significant. The main contributions are:

## Key messages of the Contribution Made by Beer to the European Economy

- ▶ In total **2.5 million jobs** are directly or indirectly related to the production and sale of beer
- ▶ The total value-added attributed to the production and sale of beer in Europe is estimated at approximately **59 billion euros**
- ▶ The total revenues for the national governments are estimated at approximately **57 billion euros**
- ▶ Europe is the **number one** producer of beer worldwide.
- ▶ There are **3,733 breweries** in Europe.

In addition to employment, value-added and tax revenues for governments, **the brewing sector also generates social benefits to the European countries.** Brewing companies are very active in sponsoring a variety of cultural and sports events. Brewing companies are concerned about the well-being of the local communities in which they work and they also invest in the working conditions of their employees. In many countries in Europe, salaries in the brewing sector are also high when compared to most other sectors. Lastly, but probably most importantly, one cannot underestimate the social benefits of groups of friends coming together, often over a beer, to socialise and converse, and the integral role that local bars, pubs and cafés often play in the fabric of local communities across the whole of Europe. Investigating these social benefits, some of which are difficult to quantify, has not been part of our study.

The contributions mentioned above are realised because **European breweries produced 427 million hectolitres** of beer, and **Europeans consumed 394 million hectolitres** (one hectolitre equals 100 litres) in 2008. Europe is the number one producer of beer worldwide. The production and consumption of beer has a major impact on other important European sectors. For example, the brewing sector has a strong impact on the agricultural sector from malting barley, which is needed for production of beer, and for the production, marketing and sales processes, and breweries buy goods and services in supplying sectors, mostly within Europe. The **annual expenditure of European breweries on goods and services is worth 24.5 billion euros.** Mainly as a result of a strong European beer sector, **Europe is the number-one producer of hops, malt and malting barley.**

Although there are some countries in which the brewing sector is still growing, for example in Eastern Europe where investment in modernising brewing facilities in recent years has led to higher efficiency, there are some developments impacting on the contribution of the beer sector to the European economy. The main developments are:

- ▶ Higher production prices
- ▶ Economic downturn
- ▶ Changing structures of alcohol taxation
- ▶ Higher tax burden
- ▶ Changing patterns in beer consumption.

These developments have in common that they can influence consumption and production of beer and ultimately affect the contribution of beer to the European economy.



# 1 The European beer market

## 1.1 Highlights

### Highlights of the European beer market

- ▶ Europe is the number-one beer producer.
- ▶ There are 3,733 breweries in Europe.
- ▶ The European breweries together produce 427 million hectolitres of beer annually.
- ▶ Almost 17% of the production (72 million hectolitres) is exported (both intra-European and extra-European trade).
- ▶ The annual beer consumption in Europe is approximately 394 million hectolitres and has a value of 124 billion euros (including VAT).
- ▶ More than 10% (43 million hectolitres) of the beers consumed are imported beers moving across national borders (both intra-European and extra-European trade).
- ▶ Approximately 40% of the consumption volume is sold in the hospitality sector (bars, restaurants etc.). This equals 72% of the value of total beer sales in euros.

## 1.2 Production

In 2008, 3,733 breweries (including microbreweries) together produced 427 million hectolitres of beer in the EU-27, Switzerland, Turkey, Croatia and Norway. The number of breweries is somewhat underestimated, because some countries were unable to provide us with complete figures. This means that the actual number of breweries is even higher than 3,733.

With the total production volume of 427 million hectolitres of beer, **Europe is the world's most important beer producer**, followed by China and the United States (around 393 and 234 million hectolitres respectively).<sup>1</sup>

European beer brands are sold worldwide, either produced in Europe and exported, or manufactured abroad under licence or by subsidiaries of European brewing companies (AB InBev, SABMiller, Heineken and Carlsberg). A significant number of independent small and medium brewing companies and microbreweries also contribute to the variety of beer brands. We cannot provide an exact breakdown. What is important is that the number of breweries is constantly changing as microbreweries spring up across the European landscape.

Countries differ in the number of breweries operating within their borders. Germany is the country with the most breweries within its borders (1,330). Eight other countries have 100 or more breweries per country: United Kingdom (667), Italy (272), Switzerland (270), Austria (173), France (132), the Czech Republic (128), Belgium (135) and Denmark (120). In the other twenty two countries the number of breweries differ from 72 in the Netherlands to just one in Malta.

<sup>1</sup> Source: Barth-Haas Group; *The Barth Report 2007-2008*.

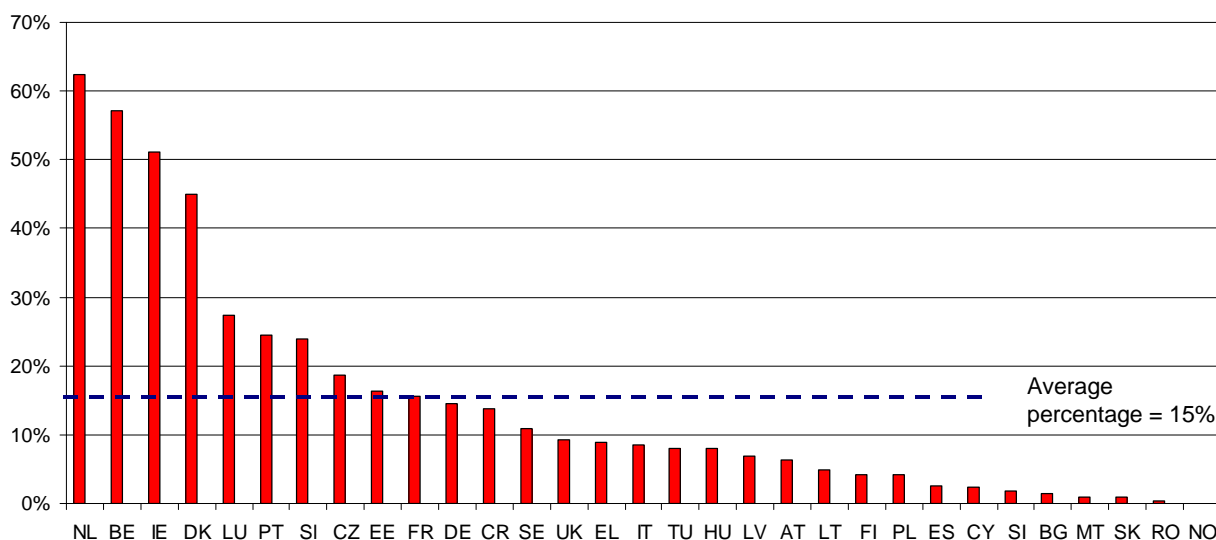
### 1.3 Exports and imports

Some 72 of the 427 million hectolitres of beer produced are exported outside national borders (around 17% of total beer production) and 43 million hectolitres are imported. These export and import figures, which we received directly from the national brewery associations, relate to ‘between countries’ flows of beer. The exact destination or origin of these exports and imports could not be deduced from these figures. Based on Eurostat data<sup>2</sup> we estimate that approximately 42% of the total exports comprises exports within Europe, while the other 58% is destined for countries outside Europe.<sup>3</sup>

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. This explains why so much beer is exported to countries outside Europe, with the United States as the most important target market.

Exports are especially important for countries such as the Netherlands, Belgium, Ireland and Denmark where the percentage of exports compared to total domestic beer production varies between 45 and 62%. The strong export position of these countries is partly explained by the fact that they are home to some of the world’s largest brewing companies, and that these are traditional brewing companies famous for their high-quality beers.

**Exports as percentage of production per country**



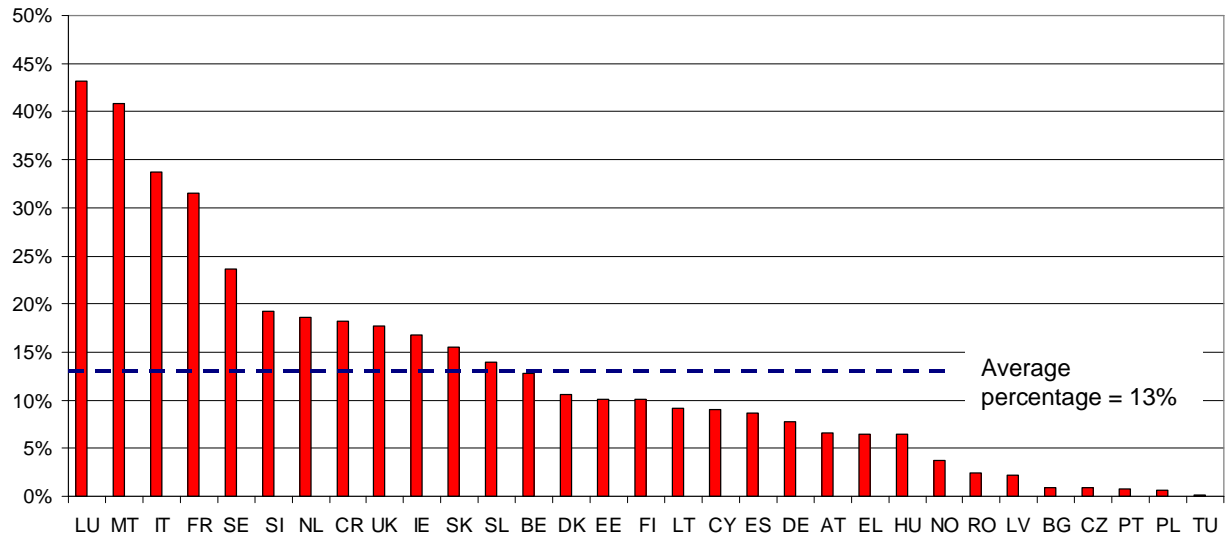
Sources: Ernst & Young questionnaire among brewers’ associations (2009) ;Canadian “Global beer trends” (2008)

<sup>2</sup> Source: Eurostat: EU27 Trade Since 1995 By SITC (DS\_018995).

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

Main European importers of beer (import in terms of both intra-European and extra-European trade) are Luxembourg, Malta, Italy and France where the percentage of imports compared to the total consumption of beer lies between 31 and 43%. For Malta and Luxembourg this can be explained by the small size of these countries. In Italy and France one of the larger brewing companies, active at those markets, brews a high share of their beer outside these countries. This explains the high share of imports in these countries.

### Imports as share of consumption per country



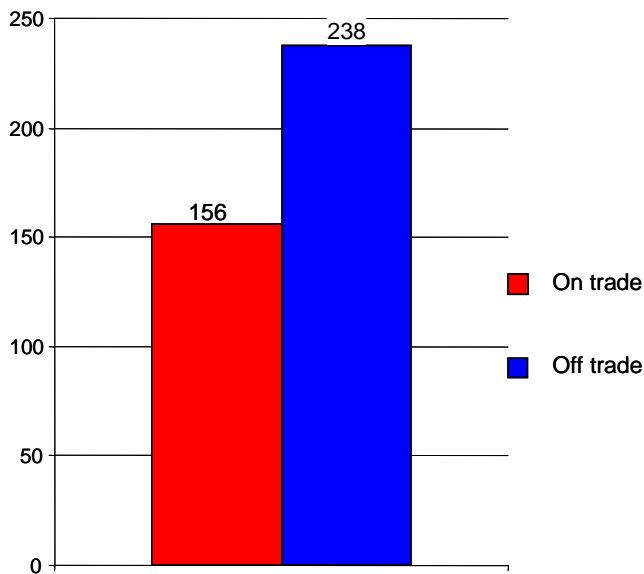
Sources: Ernst & Young questionnaire among brewers' associations (2009); Canadian "Global beer trends "(2008)

### 1.4 Consumption

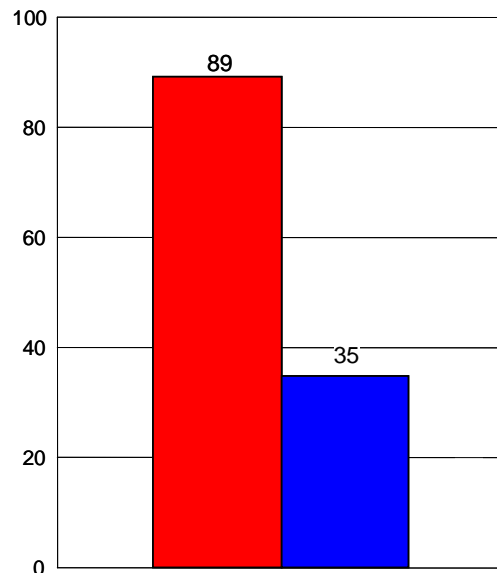
In 2008 some 394 million hectolitres of beer were consumed in the EU-27 and Switzerland, Norway, Turkey and Croatia. Of this European consumption, it is estimated that over 60% is purchased in supermarkets and other retail outlets, which is referred to as 'off-trade'. The other 40% is consumed in the hospitality sector (pubs, restaurants et cetera), which is referred to as 'on-trade'.

The size of the European Beer market can also be estimated in euros. The total value (paid by consumers) of European beer consumption is estimated at approximately 124 billion euros (including VAT). Almost 72% consists of turnover in pubs and restaurants. In terms of euros the retail channel is less important.

**Volume in million hl in EU-27 + Switzerland, Turkey, Norway and Croatia**



**Value in billion euro in EU-27 + Switzerland, Turkey, Norway and Croatia**



Source: Ernst & Young calculation based on input from the National Brewery Associations (2009)

## 2 Purchases made by breweries

### 2.1 Highlights

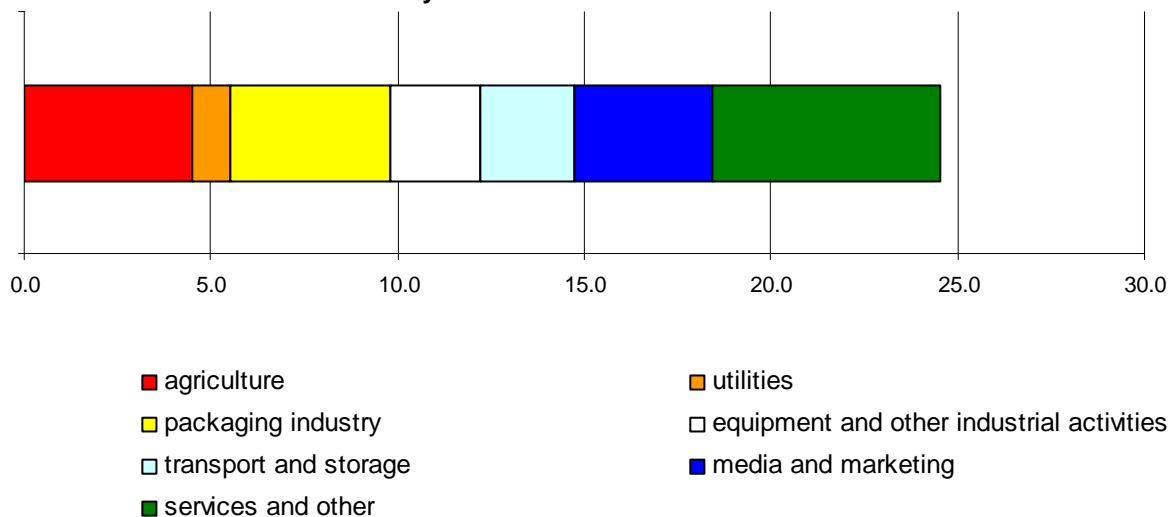
#### Highlights of purchases made by breweries

- ▶ The annual expenditure of European breweries on goods and services is 24.5 billion euros.
- ▶ Most money is spent in the services sector, agriculture and the packaging industry.
- ▶ Europe is the number-one producer of hops, malts and malting barley. The existence of a strong brewing sector is the main explanation for this position.

### 2.2 Purchases by sector

The annual production of 427 million hectolitres of beer is only possible because various sectors provide the necessary goods and services, ranging from barley, hops and malt to energy and transportation capacity, and including a variety of industrial products and services. In total the brewing sector purchases goods and services from supplying sectors with a value of 24.5 billion euros.

#### Purchases of goods and services in EU 27 and Switzerland, Croatia, Norway and Turkey in billion euros



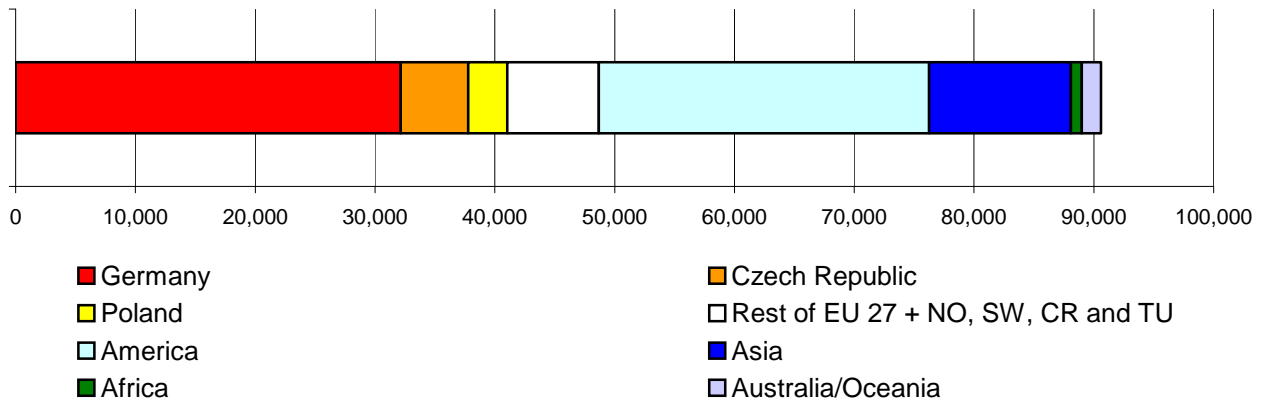
Source: Ernst & Young calculation (2009) (see Annex III for an explanation of the methodology).

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. Some 18% of the breweries' total expenditure is spent in this sector.

### 2.3 Hops, malting barley and malt

Important ingredients of beer are hops, malting barley and malt. It is no coincidence that because Europe is the world's largest beer producer, that Europe is also the number-one producer of malting barley, malt and hops. Around 53% of global hops production is of European origin. Germany is by far the most important hops-producing country, followed by Poland and the Czech Republic. The United States accounts for some 30% of global hops production.<sup>4</sup>

Production of hops (tons)

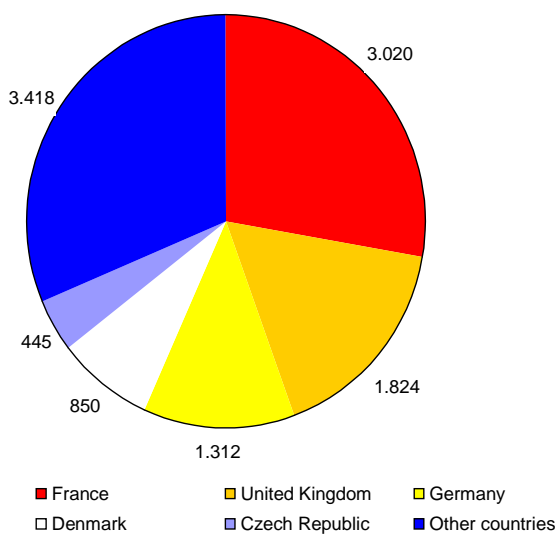


Source: Barth-Haas group, The Barth Report (2007/2008)

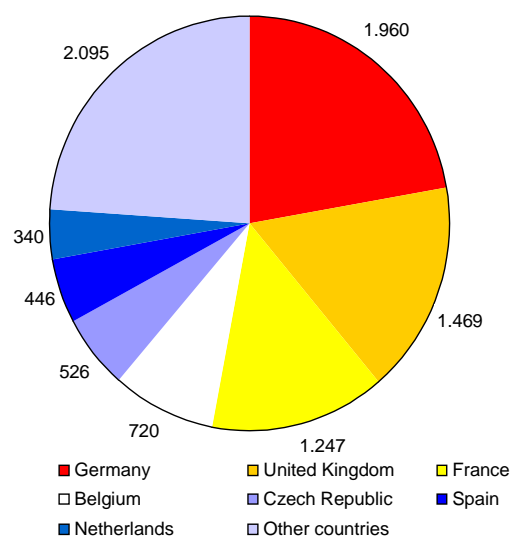
Europe is the world's largest producer of malting barley, with some 55% of the global output being produced in Europe. France, the United Kingdom and Germany are major producers of barley malt and malt in Europe.<sup>5</sup>

It is important to note that the beer sector is not the only one using hops, malting barley and malt. This means that a substantial proportion of the production of hops, malting barley and malt is purchased by other sectors. This study has therefore taken into account the fact that not all hops, malting barley and malt production is for beer, when measuring the impact of beer on the economy and jobs in these sectors.

Malting barley production in Europe (in million tons)



Malt production in Europe (in million tons)



<sup>4</sup> Barth-Haas group, The Barth Report (2007/2008).

<sup>5</sup> Euromalt, data on malting barley and malt (2008).



## 3 A high employment effect

### 3.1 Highlights

#### Highlights of employment effect of beer

- ▶ 2.5 million jobs in Europe can be attributed to the production and sale of beer.
- ▶ Approximately 6% of these jobs are created directly by the breweries in the 31 countries.
- ▶ For each job offered in the European brewing sector, one job is generated in retail, two in the supplying sectors and more than 12 in the hospitality sector.
- ▶ 1% of all jobs in the European Union (EU-27) plus Norway, Switzerland, Turkey and Croatia can be attributed to the production and sale of beer

### 3.2 Total employment

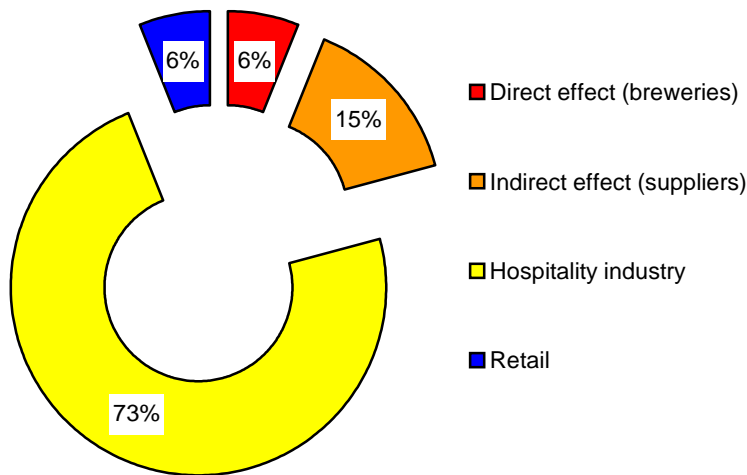
The preceding chapters pointed out that Europe has a strong brewing sector which spends a lot of money on goods and services within Europe. The consumption of beer also leads to a large turnover in the retail and hospitality sectors. Considering this, it is not surprising that the contribution of beer to the European economy is considerable. One of the main effects is the employment generated from the production and sale of beer. In 2008, 3723 breweries in Europe leads to 2.5 million jobs.

If we express this figure as a share of the total number of jobs in the European Union (EU-27), Norway, Switzerland, Turkey and Croatia (approximately 251 million jobs<sup>6</sup>), 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<sup>7</sup>) Norway (2.5 million jobs) or Slovakia (2.4 million jobs).

<sup>6</sup> Estimate based on Eurostat: European Union Labour Force Survey, 2008.

<sup>7</sup> Source: Eurostat: European Union Labour Force Survey, 2008.

**Total employment because of beer in EU-27 + Norway, Switzerland, Turkey and Croatia: 2.5 million jobs**

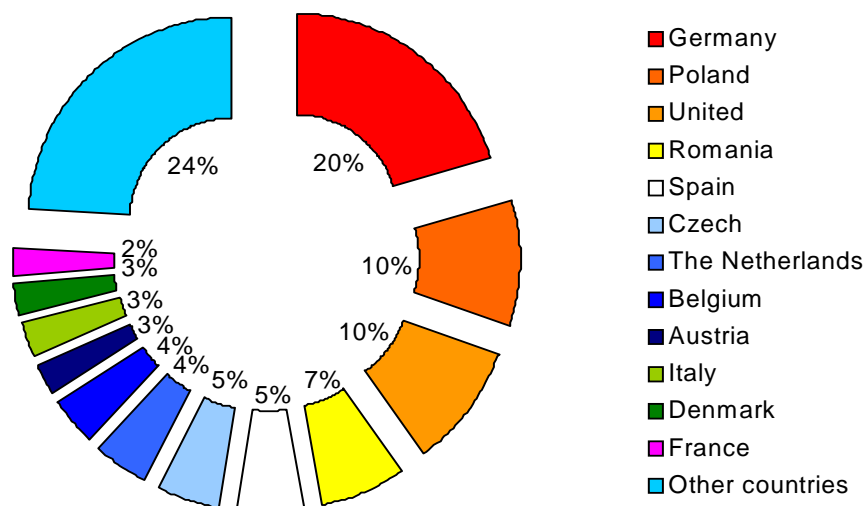


Source: Ernst & Young calculation (2009) (see Annex III for an explanation of the methodology).

**3.3 Direct employment**

The European breweries together provide 150,600 jobs; this is the so-called direct employment effect. These jobs are spread across Europe. Germany has the largest number of employees (approximately 30,700 jobs) followed by Poland, the United Kingdom and Romania.

**Direct employment: 150,600 jobs**

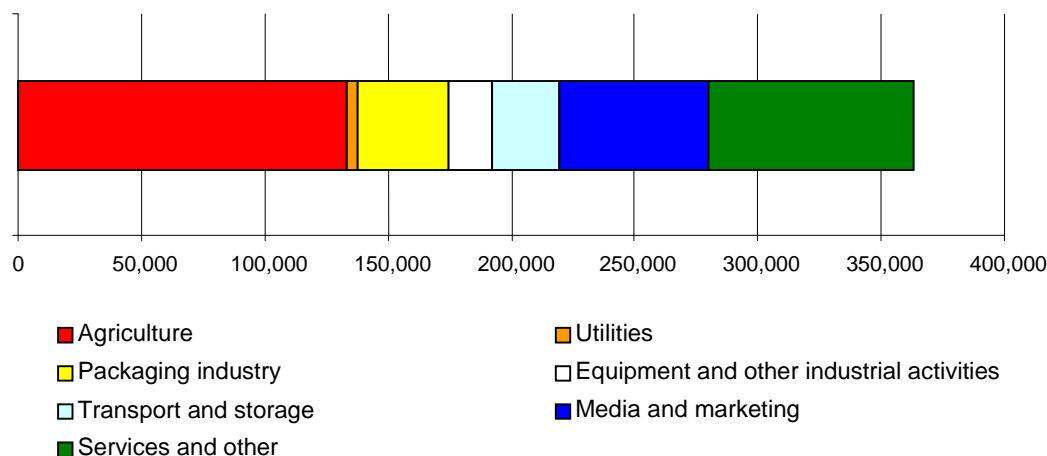


Source: Ernst & Young calculation (2009) (see Annex III for an explanation on the methodology).

### 3.4 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, hops and malt to energy and transportation capacity, and including a variety of industrial products and services. Some 363,100 jobs in these supplying sectors can be attributed to the production and sales of beer.

#### Indirect employment in EU 27 and Switzerland, Norway, Turkey and Croatia



Source: Ernst & Young calculation (2009) (see Annex III for an explanation on the methodology).

Chapter 2 stated that almost 40% of the total purchases made by European breweries involve the services sectors (including marketing and media), and 18% the agricultural sector. The figure above and table 1 below show that the service sector and media and marketing sector together generate 40% of the indirect employment, and agriculture 37%. 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 37 percent of the total number of jobs generated by the brewing sector consists of jobs in agriculture, only 18 percent of the purchases by breweries occurs 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. A one million euro impulse in the agricultural sector generates approximately 30 jobs, whereas the same impulse into for example marketing and media or other services generates only 15 jobs.

**Table 1: Number of jobs generated per sector due to beer sales.**

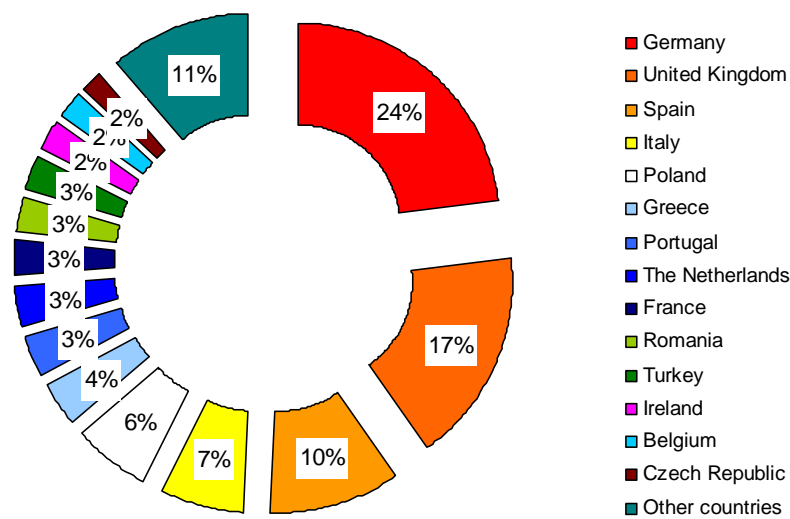
Sectors	Number of jobs	Share in total indirect employment
Agriculture	133,100	37%
Utilities	4,900	1%
Packaging industry	36,500	10%
Equipment and other industrial activities	17,400	5%
Transport and storage	27,400	8%
Media and marketing	60,800	17%
Services and other	83,000	23%
<b>Total</b>	<b>363,100</b>	<b>100%</b>

Source: Ernst & Young calculation (2009) (see Annex III for an explanation on methodology).

### 3.5 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. Almost 1.8 million jobs of the total of 11.7 million jobs in the hospitality sector can be attributed to the sales of beer. This means that approximately 15 percent of the jobs in the hospitality sector can be attributed to the sale of beer. The other jobs in the hospitality sector can be attributed to the sale of other products. In countries where the majority of beer is sold in the hospitality sector, the induced employment effect turns out to be very high. Examples are Ireland, Spain, Greece and Portugal with over 60% of beer being sold in pubs and restaurants. The largest number of jobs in the hospitality sector related to beer sales is however found in Germany. In the retail sector another 150,100 jobs can be attributed entirely to the sales of beer.

**Employment in the hospitality sector: 1.8 million jobs**



Source: Ernst & Young calculation (2009) (see Annex III for an explanation on methodology).

## 4 High value-added

### 4.1 Highlights

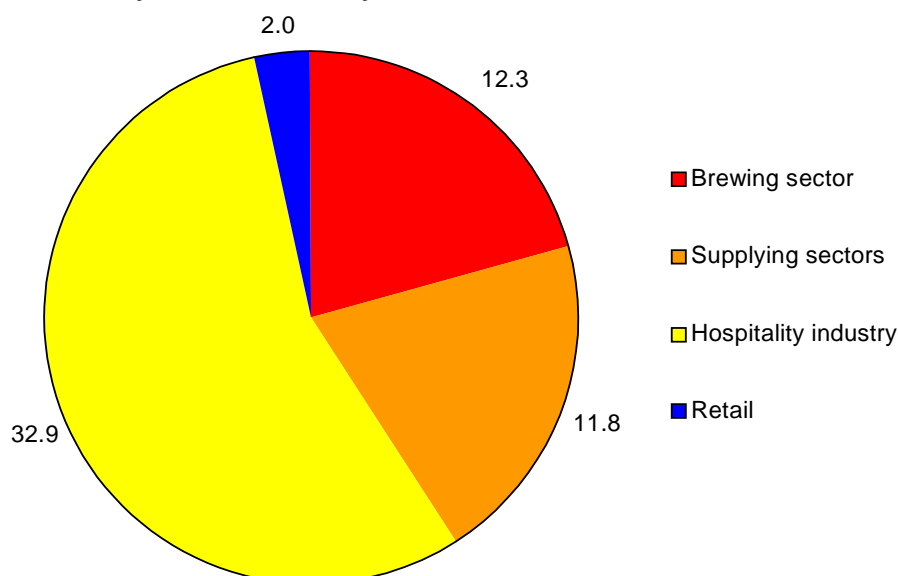
#### Highlights of value-added

- ▶ The total value-added created directly and indirectly by beer in Europe is estimated at approximately 59 billion euros.
- ▶ Compared to other sectors, employees of European breweries have relatively high productivity.

### 4.2 Value-added by sector

Another contribution of the beer industry is the value-added it creates, and the value-added created by the supplying, the retail and the 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 next chapter). We estimate the total value-added related to the production and sale of beer in the European economy at approximately 59 billion euros.

#### Value added due to the production and sale of beer EU-27 Turkey, Croatia, Norway and Switzerland: 59.0 billion euros



Source: Ernst & Young calculation (2009) (see Annex III for an explanation on methodology).

This total of 59 billion euros of value-added is generated by 2.5 million employees working in the brewing sector, in supplying sectors and in the hospitality and retail sectors. This only includes jobs due to beer; jobs due to other sectors are not included. The average value-added per employee is therefore some 23,700<sup>8</sup> euros a year.

The average value-added per European brewery employee is far higher, namely approximately 81,300 euros a 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 (59 billion euros) can be compared to the gross domestic product of countries like Slovakia (65 billion euros in 2008) or Croatia (47 billion euros).<sup>9</sup> The total gross domestic product (GDP) of the European Union (EU-27), Turkey, Switzerland, Norway and Croatia together was some 13,693<sup>10</sup> billion euros in 2008. This means that the brewing sector's contribution to the European economy is approximately 0.43% of total GDP.

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<sup>8</sup> This is calculated as follows: 58.8 billion euros divided by 2.5 million employees.

<sup>9</sup> Source: Eurostat, Annual national accounts, 2008.

<sup>10</sup> EY data calculation based on: Eurostat, Annual national accounts, 2008.

# 5 Government revenues due to Beer

## 5.1 Highlights

**Highlights of government revenues**

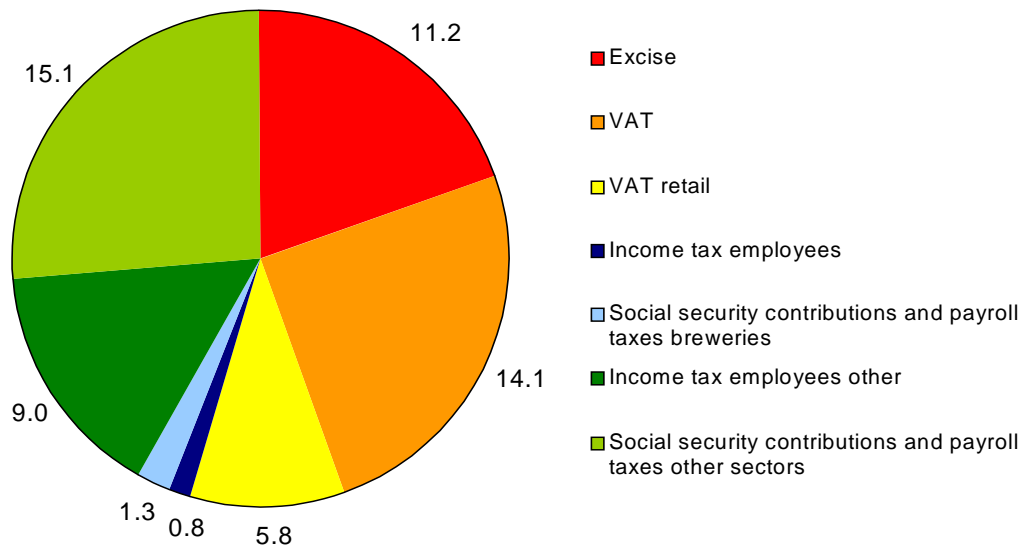
- ▶ The total government revenues arising from beer in terms of VAT, excise, income taxes, payroll taxes and social security contributions are estimated at 57 billion euros.
- ▶ The most important source of European government revenues is VAT, followed by social security contributions paid by employers and employees.
- ▶ Excise revenues, estimated at approximately 11.2 billion euros, also contribute significantly.

## 5.2 Government revenues

National governments benefit substantially from the production and sale of beer by receiving excise revenues, VAT revenues and 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'. Besides the aforementioned taxes, governments also benefit from other taxes such as corporate taxes, property taxes, community taxes, environmental taxes (such as climate change levy), vehicle excise duty and stamp duty land tax.

The total revenues for the governments in the 31 European countries are approximately 57 billion euros per year. These revenues include only VAT, excises, income taxes, social security contributions and payroll taxes.

**Government revenues due to the production and sale of beer EU-27  
Switzerland, Norway, Croatia and Turkey: 57.2 billion euros**



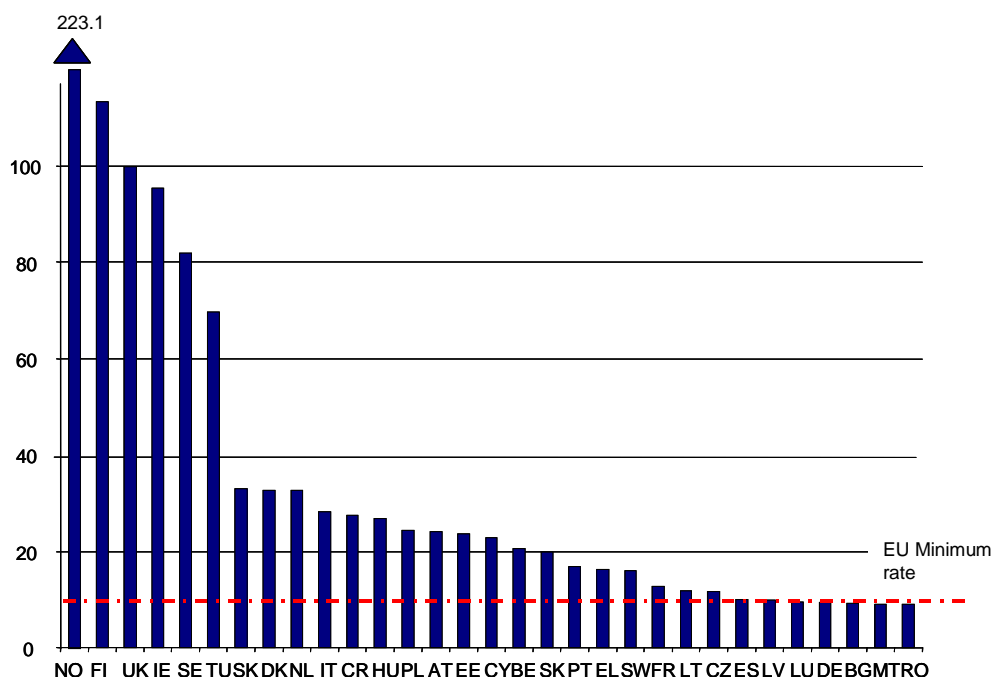
Source: Ernst & Young calculation (2009).

Due to data gaps it was not possible to estimate the government revenues from corporate and environmental taxes at national level. However, it is possible to provide a rough estimation of government revenues from these taxes at European level (EU-27 and Switzerland, Norway, Croatia and Turkey). These revenues from corporate and environmental taxes are estimated at respectively € 1.150 billion and € 125 million. As these taxes and other taxes as property taxes, community taxes and vehicle excise duties are not included in our estimation of government revenues, real government revenues from taxes will be even higher than the estimated 57 billion euros per year .

The most important source of European government revenues are Value Added Taxes (VAT). European consumers pay an average 18% VAT on their beer consumption. VAT revenues on beer sales in the retail and hospitality sector are estimated at 19.9 billion euros. Excise revenues also contribute significantly to the national treasuries. These revenues are estimated at approximately 11.2 billion euros.

As Member States of the EU-27 have a certain degree of flexibility in setting the levels of beer taxation, the excise rate differs between countries. For example Germany 's excise rate on beer is not as high as for breweries in the Nordic countries, which implement even higher excise rates. The variation in excise rates is shown by the following figure.

**Excise duty rates per hectolitre of beer (12 degrees Plato, 4.8 % alcohol)**



Source: *The Brewers of Europe, Excise Duty Rates for Beer, 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. These income-related taxes and contributions are estimated at 26.1 billion euros.

A total of 57 billion euros in tax revenues represents more or equals the total annual government expenditure of countries such as Hungary (52 billion euros) or the Czech Republic (63 billion euros)<sup>11</sup> in 2008, defined as the value of all goods and services purchased plus the value of all goods and services produced by these governments.

<sup>11</sup> Source: Eurostat: annual government finance statistics (2008).



## 6 A market under pressure

### 6.1 Market developments

The previous chapters made clear that in 2008 the production and sale of beer contributed significantly to the European economy in terms of employment, value-added and government revenues. However, we observed a number of developments in the beer market that may temper the contribution of beer to the economy in the years ahead. These main developments are:

#### ▶ Higher production prices

There has been a significant increase in production prices in recent years. The market price of hops has risen drastically, resulting in higher costs of ingredients needed for production. These high prices are explained by disappointing hops production volumes in 2006 and 2007.<sup>12</sup> Production volumes in those years were not sufficient to meet brewing industry demand. The disappointing production volumes were caused by unfavourable weather conditions shortly before or during the harvest period. These higher hops prices had several consequences. Some of the breweries were forced to adjust their recipes and consumers were faced with increased prices.<sup>13</sup> The increased beer prices were inevitable because of the small profit margin on beer.

Besides increases in hops prices, breweries in Eastern and Central European countries were faced with significant increases in labour costs. On average gross earnings increased in 13 of the monitored Eastern and Central European countries, by 8 to 24% per year.<sup>14</sup> These higher wages lead to higher production costs, but another effect of the higher wages is that they lead to higher consumer expenditures. This means that consumers are able to spend more money on beer.

In most cases the increases in production prices have led to an increase in beer prices. Higher prices affect the demand for beer and may lead to lower consumption.

#### ▶ Economic downturn

It can be expected that the current global economic slowdown will have its effect on the brewing sector. In the first half of 2009 for example, the brewers SABMiller<sup>15</sup> and Heineken<sup>16</sup> announced that consumer demand had been affected by the global economic slowdown.

To illustrate how the economic downturn can affect national markets, figures show that the market for beer in the United Kingdom suffered a 7.2% decline in the third quarter of 2008, compared to the same quarter in 2007. The fall in the fourth quarter of 2008 was 8.3% compared to the fourth quarter of 2007. The fall is the largest third-quarter decline for a decade.

<sup>12</sup> Barth-Haas group, The Barth Report, (2007/2008).

<sup>13</sup> Cortissoz, A., With fewer hops, prices jump, The Boston Globe, 9 January 2008.

<sup>14</sup> Database Central Europe, Rapid increase in labour costs in Central and Eastern Europe in 2008, 19 January 2009

<sup>15</sup> RTT News, SABMiller FY09 Profit Declines on Costs, Stronger Dollar, Update, Tradingmarkets.com, 14 May 2009.

<sup>16</sup> Agence France Presse (AFP), Economic crisis, smoking bans hamper beer sales: Heineken, 22 April 2009.

A total of 161 million fewer pints were sold between July and September compared against the same period last year - a fall of 1.8 million pints a day (1.02 million litres). Beer sales in pubs, bars and restaurants fell in the third quarter by 8.1% and in the fourth quarter by 9.9% over the same period. Sales in supermarkets and off-licences also fell 6% from July to September compared against the same period the previous year.<sup>17</sup>

The accelerating decline in beer sales is a clear sign of a worsening economy, worried households and weakening spending. It is also reducing the government's revenues from duties and VAT. It is estimated that tax income for the British government from duty and VAT are down £181 million since the March Budget, compared against the same period in 2007. This is despite the fact that beer taxes went up by 18% in 2008.<sup>18</sup>

The likely effects of the economic downturn in terms of reductions in direct and indirect employment, and the value-added to the European economy due to beer would need further investigation.

### ► **Changing structures of alcohol taxation**

The European Commission services are currently considering the need for modernising 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 product subject to excise duty arrangements, amongst other things. On the other hand Directive 92/84 laid down minimum rates for the categories of product 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.

As mentioned in Chapter 5, European countries differ in their levels of taxation (rate of excise), so a change in European policy will affect some countries more than others. If the EC decided to raise their minimum excise rate on beer, breweries, for example in Germany, will face higher excise rates. Breweries in the Netherlands for example, or the Nordic countries, Ireland and the United Kingdom already face higher excise rates on beer than those laid down by the EC.

The European Commission is not alone in considering the need to modernise legislation on taxes. Various Member States are also considering changing their legislation on alcohol taxation or have already changed it. On 1 January 2009 the Dutch government increased the excise rates on beer by 30%. Other countries that increased their excise rate on beer in 2009 are Estonia, Greece, Lithuania, Latvia, Hungary, Portugal, Romania, Slovakia, Finland and the United Kingdom.

As shown by our study in the Netherlands, changes in tax policy can have serious consequences for the brewing sector.<sup>19</sup> The supplying sectors (e.g. agriculture, transport and the packaging sector) and the hospitality and retail sector which benefit from beer production and sales will also feel the consequences of such a change in tax policy.

Moreover, there are large differences in taxation between different kinds of alcoholic beverages. Beer is much stronger taxed than for example, wine, the latter which at the time of this report (June 2009) has a zero excise rate. This will have an even larger negative effect on the consumption of beer, and on the brewing sector.

<sup>17</sup> BBPA, UK Quarterly Beer Barometer, 27 January 2009.

<sup>18</sup> BBPA, UK Quarterly Beer Barometer, 27 January 2009.

<sup>19</sup> Increasing the Excise Duty on Beer. Penny Wise, Pound Foolish', Ernst & Young and Regioplan, Amsterdam (2008).

▶ **Increased tax burden**

In the questionnaire distributed for the purposes of this study among National Brewery Associations and breweries, it was asked which taxes have been increased since our first study in 2005. The table below reinforces the perception that the tax burden on beer has changed. In most cases higher taxes lead to higher beer prices. Because of the small profit margin on beer, higher taxes are passed on to consumers. Furthermore, excises and VAT are so-called consumer taxes. These taxes are generally charged if a consumer purchases the relevant goods, in this case beer. These taxes are designed to be transferred to be charged to consumers.

**Table 2: Changes in tax rates since 2005**

	A slight increase	A moderate increase	A strong increase	A very strong increase
VAT	3 countries	2 countries		
Excise	3 countries	3 countries	6 countries	5 countries
Corporate taxes			1 country	1 country
Property taxes		1 country	3 countries	
Climate change levy (energy tax)		2 countries		
Vehicle excise duty		2 countries	2 countries	
Packaging taxes			2 countries	1 country
Fuel tax	1 country	3 countries	3 countries	
Other environmental taxes	1 country	1 country		

Source: 29 National Brewery Associations, situation as on June 2009.<sup>20</sup>

Interpreting the results of table 2 above, it can be observed that 17 countries have faced an increase in excise since 2005. Although excises are transferred to consumers, an increase in excises also affects the brewing sector. This is because the consumption of the more expensive beer in particular, comes under pressure if prices are raised.

▶ **Autonomous effects on beer consumption**

There are also some autonomous effects leading to a lower beer consumption in Europe. In many countries consumers have changed their drinking habits over the 15 years. More people prefer to drink wine instead of beer. For example in the Netherlands, wine consumption per head has increased from 14.5 litres in 1990 to 21.6 in 2007.<sup>21</sup> In the same period the beer consumption per head has decreased from 88 to 77 litres. New generations of young people also seem to have shifted their preferences in favour of pre-mixed drinks and spirits at the cost of beer.

Another effect is that more beer is consumed at home (off-trade) instead of in the pub or other hospitality locations (on-trade).<sup>22</sup> This may be due to the increased prices in the hospitality sector when compared to the retail sector, but also due to other interventions (i.e. smoking bans in bars) that have led some consumers to change their consumption behaviour. The induced employment effect<sup>23</sup> 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 fewer jobs are created because of the sale of beer.

<sup>20</sup> The questionnaire was completed by 29 National Brewery Associations. The National Brewery Associations of Malta and Croatia did not complete this questionnaire.

<sup>21</sup> Website of the National Statistics Office the Netherlands consulted in June 2009, <http://statline.cbs.nl/statweb/>.

<sup>22</sup> Ernst & Young study on the Contribution Made by Beer to the European Economy (2009)

<sup>23</sup> See Annex I for an explanation of the induced employment effect.

## 6.2 Summary of main developments in the brewing sector

The brewing sector is under pressure due to a number of developments. These main developments are:

### Summary of the main developments in the brewing sector

- ▶ Higher production prices
- ▶ Economic downturn
- ▶ Uncertainty about pending tax changes
- ▶ Higher tax burden
- ▶ Changing drinking preferences at the cost of beer
- ▶ A switch from on-trade to off-trade

These developments have in common that they will affect the consumption of beer and may influence the success of the brewing sector.

# Annex I: Methodology & scope

This study focuses on the economic impact of the brewing sector in **27 European union Member States plus 4 countries** (Croatia, Norway, Switzerland and Turkey). 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 **2008**. If data was not available for this year, data for 2007 and in some exceptional cases, data for 2006 was used.

Some of the reported outcomes are 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 decisions made by Ernst & Young. 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
- ▶ induced impact

The **direct impact** is defined straightforwardly as 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 and water and many types of packaging materials such as glass and aluminium. Breweries also hire engineers, marketers, communications agencies and many more services. In this study, six supplying sectors are distinguished: agriculture, utilities, packaging industry, transport, media and marketing and other services.

The sale of beer by retail outlets and hospitality firms is an important source of economic benefits. The economic contribution of firms in the retail and hospitality sectors arising from the sale of beer is labelled 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 results in nine dimensions:

	<b>Direct impact</b>	<b>Indirect impact</b>	<b>Induced impact</b>
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 collected directly from individual breweries across Europe through a detailed questionnaire;
- d data from Eurostat;
- e data from other (public) sources, such as national statistics agencies and the OECD;
- f data used in the 2006 study: The Contribution Made by Beer to the European Economy.

### Sub a

The **national brewing associations** have been a major source of valuable data. 29 associations completed a detailed questionnaire (only the associations from Croatia and Malta did not respond). Important elements of this questionnaire were:

- ▶ production and consumption volume, imports and exports;
- ▶ number of breweries and employees in the brewing sector;
- ▶ consumer prices in the on-trade and off-trade sectors and distribution margins of production sold on-trade and off-trade;
- ▶ information on the tax structure and changes in taxation over the last years.

Another important role of the national associations was to validate the outcomes of the study. To strengthen the underlying database for this study, Ernst & Young has presented draft country reports on the economic impact of the brewing sector to all national associations representing the brewing sector. The validated reports provide necessary national checks on the European data series used.

### Sub b

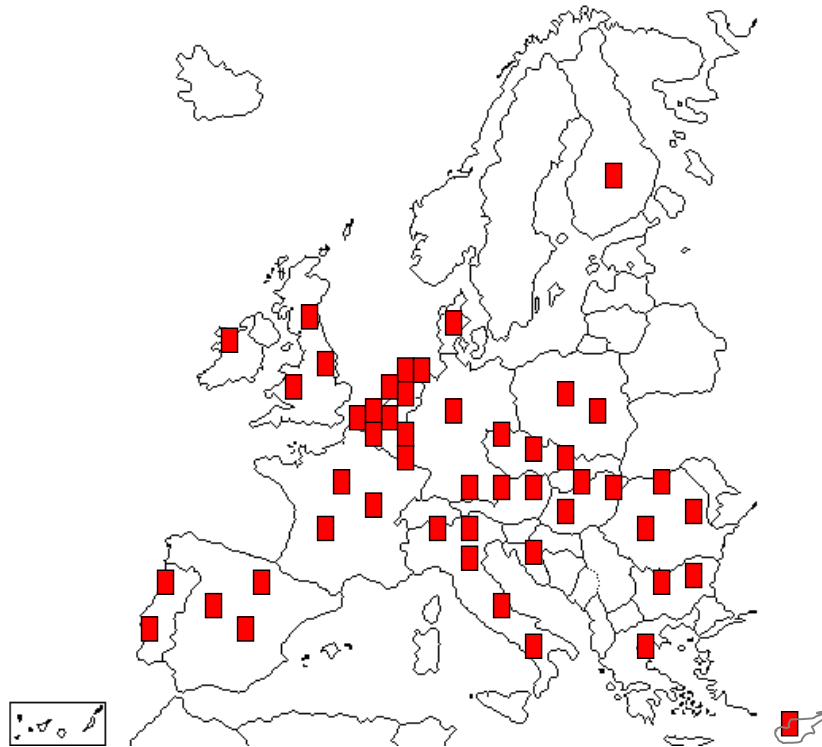
In addition to the information from the questionnaires, statistics provided by **The Brewers of Europe** have been used. These statistics consisted of general information on the beer industry in particular countries, for example: data on production, consumption and direct employment in the brewing sector.

### Sub c

Some of the data on the brewing sector could not be provided by the national brewing associations. In addition to the questionnaire that was sent to the national brewing associations, a different questionnaire was completed directly by 49 individual **brewing companies** all over Europe. It consisted of questions about:

- ▶ procurement and purchase management (amounts of money spent on a variety of goods and services needed to produce beer, and the proportion of purchases made domestically).
- ▶ consumer prices on-trade and off-trade and a breakdown of consumer prices in distribution margins for the retail and hospitality sector, VAT and excise duties, value-added for the brewing sector and goods and services purchased by the brewing sector.

Questionnaires returned by brewing companies provided good coverage of European regions:



#### Sub d

Whereas specific data on the brewing sector was collected through questionnaires completed by national brewing associations and breweries, more general data on individual European economies was obtained from **Eurostat**. Eurostat statistics have provided useful data on labour costs, turnover and value-added per employee generally covering all or most of the countries considered.

#### Sub e

If data could not be collected through the questionnaires, statistics by The Brewers of Europe and Eurostat, **alternative sources** have been used. For general data on national economies this data derives primarily from public sources such as national statistics agencies and OECD statistics. For more specific data, commercial reports on the brewing industry (for example Canadean<sup>24</sup> and Euromonitor<sup>25</sup>) have been used.

#### Sub f

In the exceptional case where no new data could be obtained at all, data has been used from the **2006 study**. This is mainly data which is unlikely to change much over time, for example the division of purchased goods among supply sectors in terms of percentages.

<sup>24</sup> [http://www.canadean.com/Products\\_Services/Beverages/Beer.aspx](http://www.canadean.com/Products_Services/Beverages/Beer.aspx)

<sup>25</sup> <http://www.euromonitor.com/Beer>



# Annex III: Variables and estimates

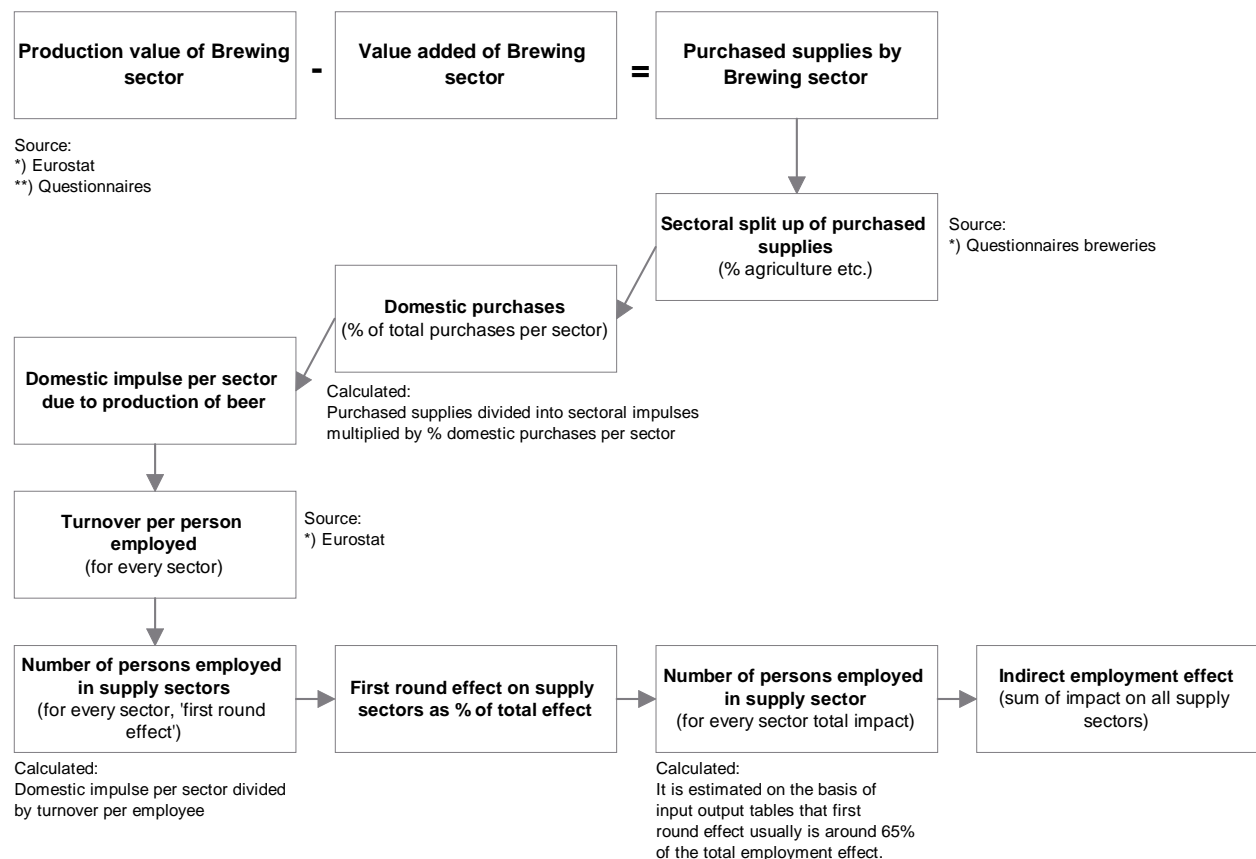
Some of the reported outcomes concerning the economic impact of the brewing sector are based on estimates. These estimates derived from a **model** constructed by Ernst & Young. We illustrate here how these variables have been estimated, focusing on:

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

## Employment effects

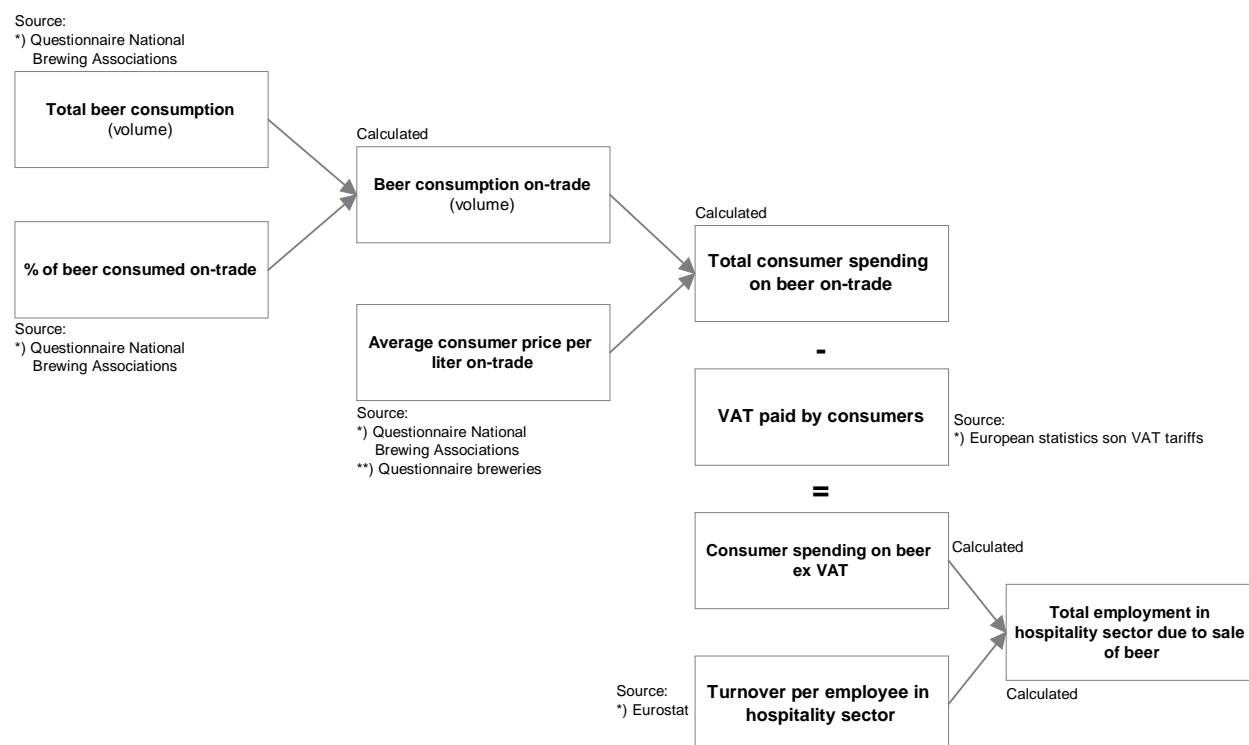
The **direct employment** effect signifies the number of people employed in the brewing sector. The data on direct employment was obtained from statistics from The Brewers of Europe and the results of the questionnaires among national brewing associations. If these sources were not available, alternative sources (mainly Eurostat) have been 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 impulse in supply sectors resulting from purchases made by the brewing sector.



Data on turnover and value added per employee per sector was obtained from Eurostat. For sector data NACE codes (classification of economic activities by the European Union) have been 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<sup>26</sup> (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, is estimated as follows:

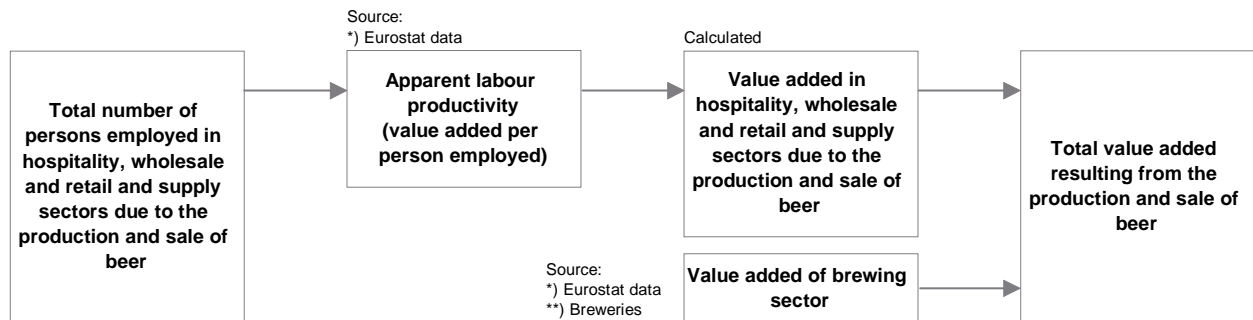


Depicted is the way the employment impact on the hospitality sector is estimated. Estimates for retail are made in a similar way.

**Value-added due to the production and sale of beer**

The **direct value-added** in the brewing sector is 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**) is estimated on the basis of the employment effects. The value-added in a particular sector is 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 was available, estimates were made based on statistics of national statistics agencies or the OECD.

<sup>26</sup> 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

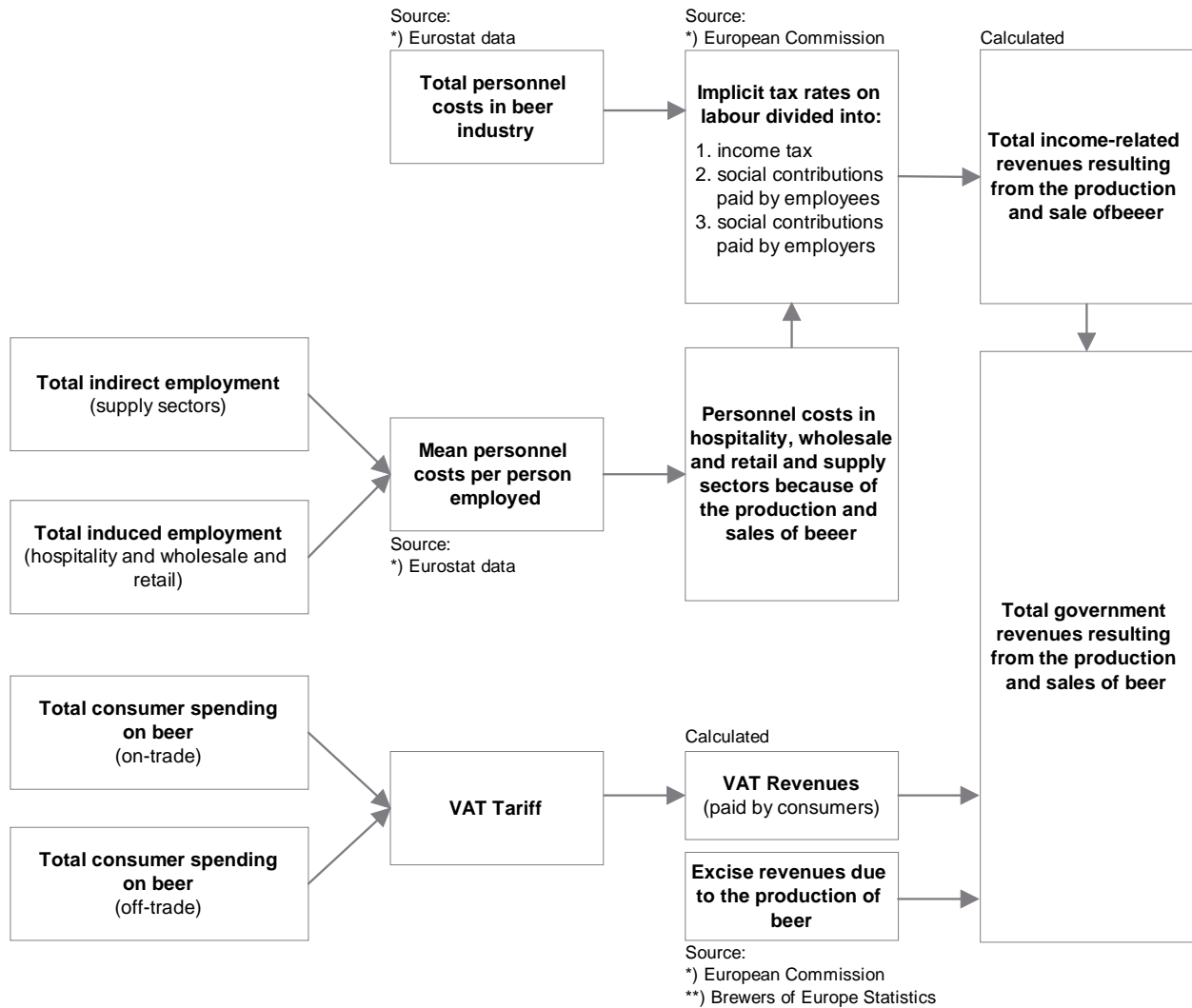
The government revenues due to the brewing industry consist of three segments:

- ▶ excise revenues
- ▶ VAT revenues
- ▶ income-related revenues

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

**Income-related revenues** have been 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 made it possible to report separately on income tax revenues and social contributions.



## Annex IV: Exchange Rates

Since most data sources used for the study apply to the year 2008, the mean exchange rates of that year have been used for the majority of data calculations. For data that applied to an earlier period, mean exchange rates of 2007 were used.

**Table 3: Exchange rates used in the report**

Currency	Mean euro exchange rate in 2007	Mean euro exchange rate in 2008
Bulgarian Leva	1.9558	1.9558
Croatian Kuna	7.338	7.224
Czech Koruny	27.766	24.946
Danish Krone	7.4506	7.4560
Estonian Krooni	15.6466	15.6466
Hungarian Forint	251.3520	251.5121
Latvia Lats	0.7001	0.7027
Lithuanian Litas	3.4528	3.4528
Norwegian Krone	8.0165	8.2237
Polish Zlotych	3.7837	3.5121
Romanian Lei	3.3353	3.6826
Slovakian Koruna	33.7745	31.2617
Swedish Krone	9.2501	9.6152
Swiss Franc	1.6427	1.5874
Turkish Lira	1.7865	1.9064
UK Pound Sterling	0.68434	0.79628

Source: [www.statistics.dnb.nl](http://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 brewed 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.
Europe	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) plus Norway, Switzerland, Croatia and Turkey.
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 amount of jobs that is 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: Comparison with the 2006 study

In January 2006, for the first time The Brewers of Europe published a report conducted by Ernst & Young on the economic impact of the production and sale of beer in Europe. The current report is an update of this study, pointing out that in 2009 the European brewing sector still generates a substantial contribution to the economy in terms of employment, value-added and governmental revenues.

Although most of the methods and data sources used are the same as in the 2006 study, there are some differences that cause deviations in the outcomes at the country level and make it difficult to draw comparisons between the two studies. The most important reasons for these deviations are:

- ▶ more accurate statistics available;
- ▶ improvements in the quality of the model;
- ▶ developments in regional economies.

There was a higher response rate to the questionnaire. More national brewers' associations as well as more breweries completed the questionnaire. There is also a wider coverage of country statistics through Eurostat in comparison with 2006. Due to the higher response rate and the wider coverage of statistics we had more accurate data and we were less dependent on estimates as an input for our calculations.

In comparison to the 2006 study some adjustments have been made in the methods used for the data calculations. The indirect employment is now calculated more directly (see Annex III). An adjustment is also made in the way the income-related taxes and revenues have been calculated. Due to more accurate statistics we were able to estimate not only the income taxes but also the payroll taxes and social security contributions for almost all countries.

Economic developments in certain countries also led to substantial differences in outcomes in 2006. The most prominent example of this is the increase in price levels in some Eastern European countries in recent years. This led to higher expenses by consumers and to higher labour costs for employers, and ultimately influenced the outcomes of the economic impact of the brewing industry in these countries substantially.

The abovementioned effects are most prominent at the country level. On a higher scale these deviations level out and the effect at the European level is therefore limited.



# Annex VII: Contact information

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

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