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 **ERNST & YOUNG**

Quality In Everything We Do

The Contribution made by Beer to the European Economy

Final Report, European chapter

**THE CONTRIBUTION MADE BY BEER
TO THE EUROPEAN ECONOMY**

Employment, value added and tax

-final report, European chapter-

Amsterdam, January 2006

Ernst & Young Netherlands

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PREFACE

The Brewers of Europe commissioned a study on the economic impact of the brewing sector. Ernst & Young have conducted this study in the period of April to December 2005 and we are proud to present herewith the main results. The economic impact of the brewing sector has been analysed and described at both the level of Europe as a whole and at the level of individual countries. The study has focused on the 25 member states of the enlarged European Union (EU-25) and also on Norway, Switzerland, Croatia, Bulgaria, Romania and Turkey.

The results at the European level are summarised in this report; a separate full report also contains individual chapters on each European country.

The economic impact of the brewing sector has been described in terms of employment due to the production and sale of beer, the contribution to the European economy in terms of value added and in terms of tax revenues collected by national governments. In the study we have distinguished between the direct and indirect impacts of the brewing sector, with the latter describing both the impact on supply sectors to the brewing sector and the impact of the sale of beer on the retail and hospitality sectors. The report therefore gives some measure of the contribution that the brewing sector is making to the EU's aims, within the Lisbon Strategy, of ensuring a more dynamic and stronger EU economy in the future.

Conducting this study at the scale of Europe has only been possible with the help of the national associations for the brewing sector. Individual brewing companies have been an important source of information as well and we would like to thank both national associations and brewing companies for their commitment to this study. Professor Carl Koopmans from the University of Amsterdam, Faculty of Economics, has also commented on the methodology used and we would like to thank him for sharing his knowledge on economic impact analysis with us.

The study has been conducted by a team of economic researchers from Regioplan Policy Research, subsidiary of Ernst & Young Netherlands, consisting of Marco Mosselman, Remco Meijer and Herbert ter Beek.

Amsterdam, January 2006

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KEY MESSAGES ON THE ECONOMIC IMPACT OF BEER

Europe's brewing sector contributes substantially to productivity, employment and the European economy's competitiveness. The direct economic impact of the breweries constitutes only a small fraction of their total economic impact. The following are some key messages to illustrate the **employment** effect:

- European breweries provide jobs for 164,000 employees, while 2.6 million jobs can be attributed to the brewing sector.
- Each brewery job is matched by two jobs in the supplying sectors. Some 342,000 supply-sector employees owe their jobs to beer.
- Sale of beer in the hospitality sector and through retailers generates considerable employment: a total of 2.1 million jobs in pubs, restaurants and shops. Of these more than 1.9 million are in the hospitality sector.

For the European Union (EU-25) it is estimated that of all those employed (194.4 million in 2004) around 1.2 percent owe their jobs directly or indirectly to the production and consumption of beer. The total employment effect of the brewing sector is then comparable to the total employment of countries such as Slovakia, Finland or Denmark (2.2 to 2.6 million jobs).

In terms of **productivity** and the **value added** impact of breweries:

- The total contribution of the brewing sector to the European economy in terms of value added is 57.5 billion euros.
- Some 21 percent of this is generated directly by the brewing sector (12 billion euros). Supply sectors (20 percent), hospitality sector (56 percent) and retail (3 percent) account for the rest.
- The total production value of European breweries is 34 billion euros, generating an economic impulse of 22 billion euros for the supplying sectors.
- The largest fraction of these euros spent on supplied goods and services concerns purchases made in the services sector (including marketing and media). The 9.8 billion euros spent on services generates some 100,000 jobs in the services sector.
- The indirect economic impact of the brewing sector on agriculture is very significant; the 3.9 billion euros spent on agricultural products generate around 147,000 jobs in this sector.
- Consumers spend an estimated 125 billion euros on beer annually, of which some 72 percent is spent in the hospitality sector.
- European breweries produce 416 million hectolitres beer, of which 23 million hectolitres is exported to outside Europe.

A total contribution to the European economy of 57.5 billion euros in terms of value added can be compared to the gross domestic product of the Polish or Austrian economy in the last quarter of 2004. The total gross domestic product (GDP) of the European Union (EU-25) is some 10,354 billion euros in 2004, meaning that the contribution made to the European economy by the brewing sector is around 0.55 percent of total GDP.

National governments receive a total of 39 billion euros in **tax revenues** from the production and sale of beer. VAT revenues paid by consumers are the most important revenue source at around 19 billion euros. Excise revenues equal 10.5 billion euros and corporate taxes are estimated at almost 900 million euros. Direct personal taxes paid by workers are estimated at 8.4 billion euros.

A total of 39 billion euros in tax revenues is comparable to the total government consumption expenditure of Spain in the first quarter of 2005 (defined as the value of goods and services produced by the Spanish government and all goods and services purchased by the Spanish government from market producers). It represents more than the total annual government expenditure of countries such as Finland or Poland (estimated at around 34 billion euros).

In addition to employment, value added and tax revenues for governments, the brewing sector also generates **other benefits** to the European economy. Brewing companies are very active in sponsoring all kinds of cultural and sports events. Brewing companies are concerned about the well-being of the local communities in which they work, also investing in working conditions of their employees. Furthermore in many countries in Europe, salaries in the brewing sector are high when compared to most other sectors. Investigating these other benefits to the European economy, some of which are difficult to quantify, has not been part of the Ernst & Young study.

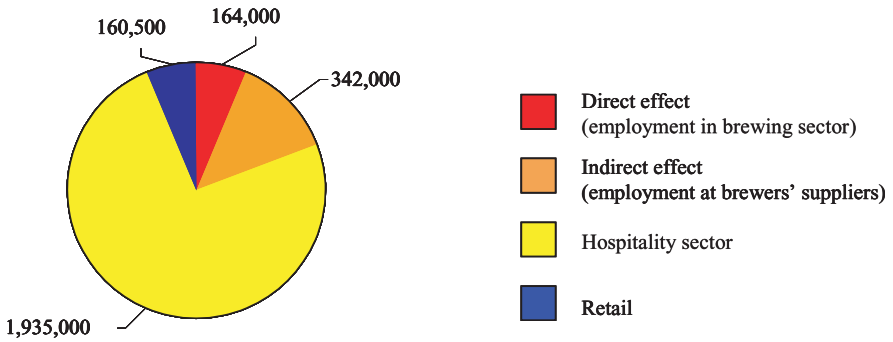
This economic impact study covers 30 countries in Europe. Included are the 25 member states of the European Union¹ and also Norway, Switzerland, Croatia, Bulgaria, Romania and Turkey.

¹ Malta has not been included because of difficulties in obtaining data.

1 HIGH SPIN-OFF EFFECTS ON EMPLOYMENT

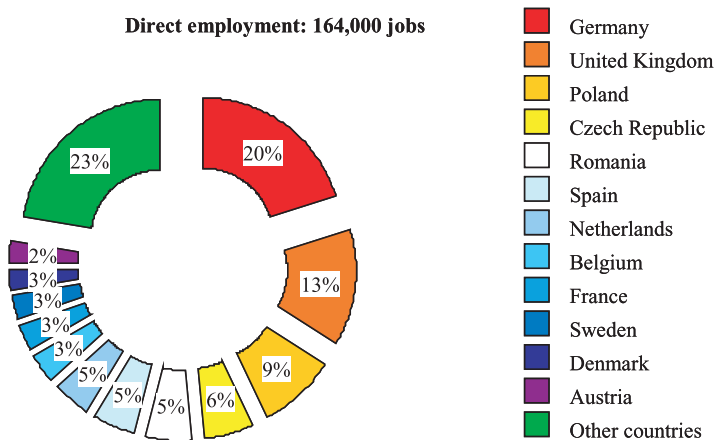
European breweries provide jobs for around 164,000 workers. However, this direct employment represents only a slight fraction of the total employment impact of 2.6 million jobs. For each job offered in the brewing sector, one job is generated in retail, two in the supplying sectors and almost twelve in the hospitality sector.

Total employment impact due to production and sale of beer: 2.6 million jobs



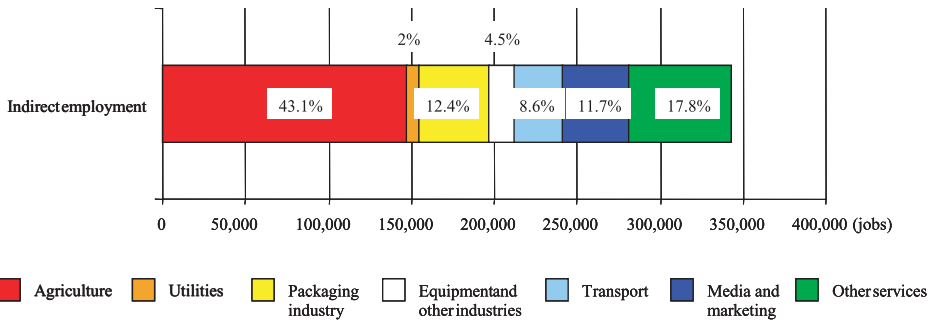
Jobs in the brewing sector are spread across Europe, with concentrations of direct employment to be found in Germany and the United Kingdom, followed by a number of Central and Eastern European countries such as Poland, the Czech Republic and Romania.

Direct employment: 164,000 jobs

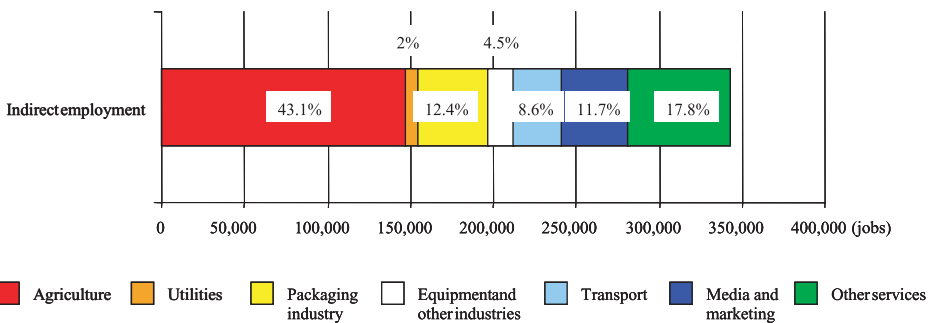


The production of beer by breweries is only possible because various sectors provide the necessary goods and services, ranging from barley, hops and malt to energy and transportation capacity, and including a variety of industrial products and services.

Some 342,000 jobs in these supplying sectors can be attributed to the production of beer:



The brewing sector purchases goods and services from supplying sectors worth 22 billion euros. Almost 45 percent of the total purchases made by European breweries involve the services sectors (including marketing and media):

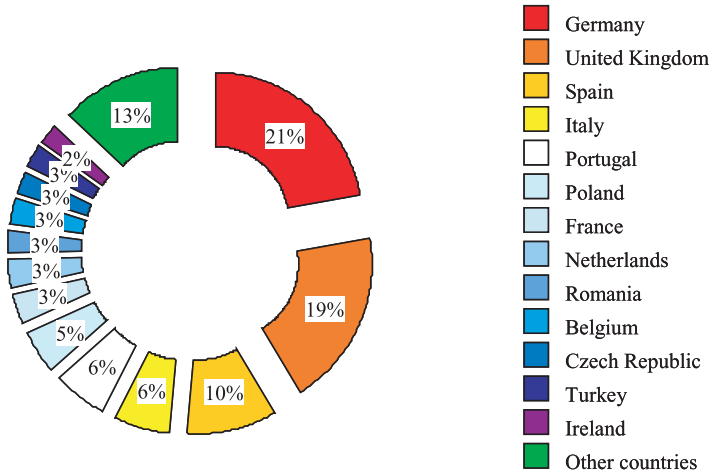


The charts above show that the agricultural sector receives some 18 percent of the breweries' total expenditures on supplies. Agriculture also generates 43 percent of the indirect employment. The explanation is that turnover and labour costs per worker are relatively low in the agricultural sector. A one million euro impulse in the agricultural sector generates around 38 jobs, whereas the same impulse into marketing and media or other services generates 10 jobs.

In addition to the direct and indirect impact of the brewing sector, the number of jobs created by the sale of beer in the hospitality and retail sectors exhibits a far greater effect. More than 1.9 million jobs in the hospitality sector can be attributed to the sale of beer, with another

160,500 jobs in retail. For countries where the on-trade segment of the beer market is relatively important, employment in the hospitality sector tends to be relatively high. Examples are Ireland, Spain, Portugal, the United Kingdom and Slovenia with over 60 percent of beer being sold in pubs and restaurants. The largest fraction of total jobs in the hospitality sector related to beer sales is however found in Germany:

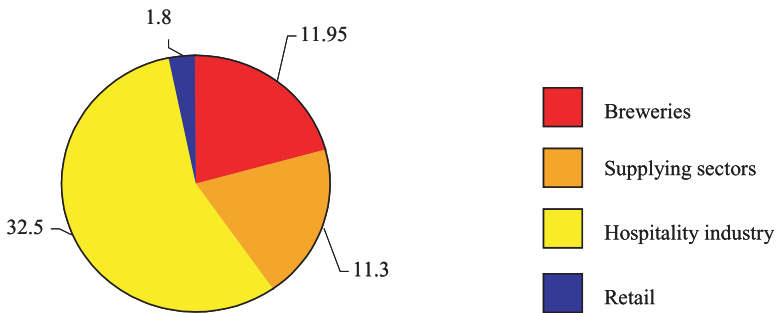
Employment in the hospitality sector: 1,935,000 jobs



2 PRODUCTIVITY AND VALUE ADDED

The direct, indirect and induced contribution of the brewing sector to the European economy is considerable. The total economic contribution from the production and sale of beer in Europe is around 57.5 billion euros:

Value added due to production and sale of beer: 57.5 billion euro

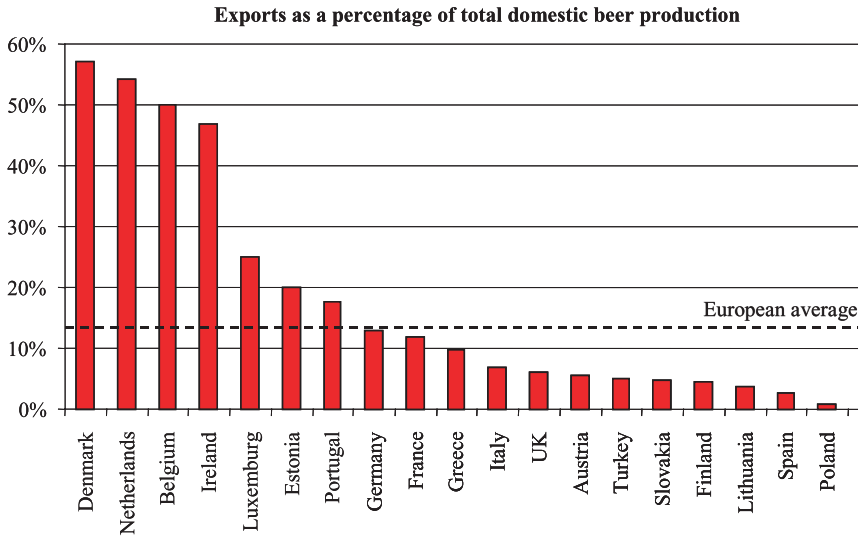


This total of 57.5 billion euros value added is generated by 2.6 million employees working for the breweries, in supplying sectors and in the hospitality and retail sectors. Average value added per employee is therefore some 22,000 euros a year. Value added per European brewery employee is far higher, averaging some 73,000 euros a year, illustrating European breweries' high productivity. 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.

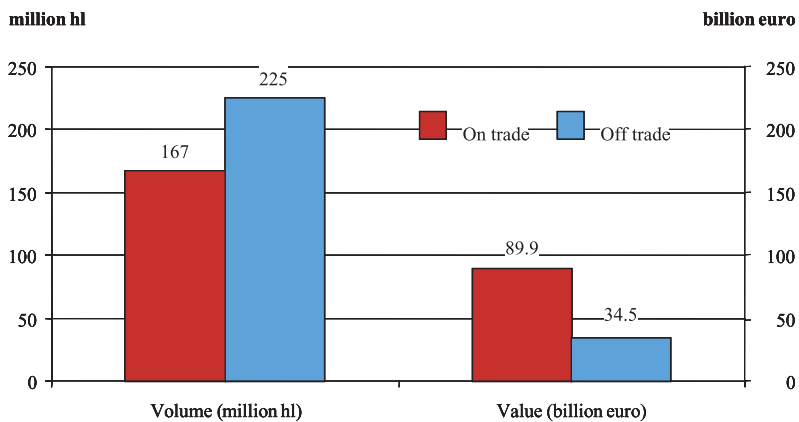
European breweries together produce almost 416 million hectolitres of beer. Some 55 million hectolitres are exported (around 13 percent of total beer production), illustrating the fact that the beer market is very much an international one. However consumers in many countries also prefer to drink domestically, and locally, brewed beers. European beer is appreciated worldwide, which explains why almost 23 million hectolitres are exported to countries outside Europe with the United States the most important target market.

Exports are especially important for countries such as Denmark, the Netherlands, Belgium and Ireland where the percentage of exports compared to total domestic beer production lies between 47 and 57 percent. The strong export position of these countries is partly explained by the fact that these are home to some of the world's largest brewing companies. Beer exports

however involve not only the larger brewing companies. To illustrate: of all 48 professional breweries in the Czech Republic only 5 do not export:



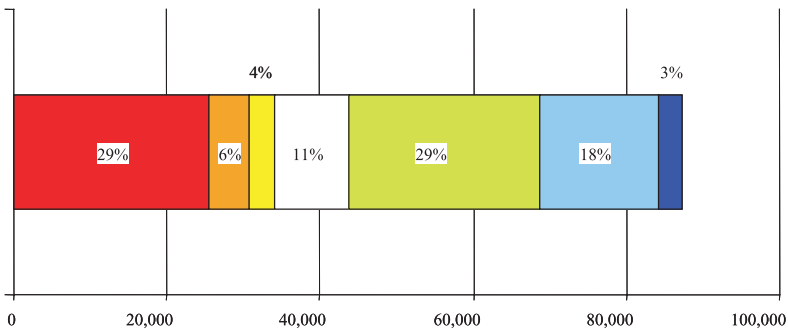
The size of the European market is estimated at around 124 billion euros (including VAT). Almost three-quarters of the market is covered by beer consumption in pubs and restaurants. In terms of volume the retail channel is however more important (off-trade market). Of total European consumption of around 392 million hectolitres, it is estimated that over 57 percent is purchased in supermarkets and other retail outlets.



With a total production volume of 392 million hectolitres, Europe is the world's most important beer producer, followed by China and the United States (around 250 and 230 million hectolitres respectively).

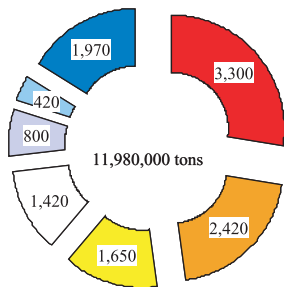
Europe is also the number one producer of malting barley, malt and hops. Around 50 percent of global hops production is of European origin. Germany is by far the most important hops producing country, followed by Poland and the Czech Republic. The United States accounts for some 29 percent of global hops production²:

hop production (mton)



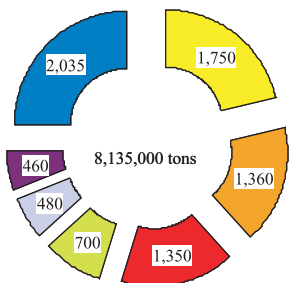
Europe also leads the world in malting barley production, with some 55 percent of the global output being produced in Europe. France, the United Kingdom and Germany are major producers of the barley malt and malt in Europe³:

malting barley (tons)



malt (tons)

- France
- United Kingdom
- Germany
- Denmark
- Czech Republic
- Sweden
- Rest of Europe
- Belgium
- Spain



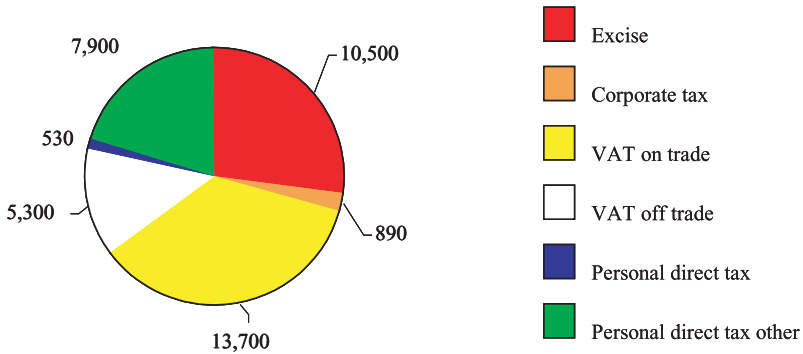
² Joh. Barth & Sohn, The Barth Report: Hops, June 2004.

³ According to statistics of Euromalt (November 2005).

3 TAX AND EXCISE REVENUES IMPORTANT TO STATE FINANCE

The financial revenues for European governments arising from the production and sale of beer are extremely substantial. Taxes paid by breweries, beer consumers and employees together total around 39 billion euros a year.

Total tax and excise revenues: 38.8 billion euros



The most important source of European government revenues is VAT. European consumers pay an average 18 percent Value Added Tax (VAT) on their beer consumption. VAT revenues are therefore estimated at 19 billion euros a year for home and hospitality sector consumption put together. Excise revenues also contribute significantly to national treasuries with around 10.5 billion euros being collected annually in excise duties.

Due to relatively high excise duties per hectolitre of beer produced, countries such as the United Kingdom, Ireland, Norway, Finland and Sweden are amongst the top ranked in Europe in terms of excise revenues.

Another source of government revenue is the personal direct taxes paid by brewery employees and those people in the supplying sectors, in retail and in the hospitality sector whose jobs can be attributed to beer. These personal direct employees' taxes total over 8.3 billion euros.

4 WORLD MARKET LEADERS, SMEs AND MICROBREWERIES

The brewing sector is one of the few in which several European-based companies are amongst the leading companies in the world. European beer brands are sold worldwide, either produced in Europe and exported, or manufactured abroad under licence or by subsidiaries of European brewing companies.

There are also many very dynamic and innovative small and medium sized companies (SMEs) and microbreweries. Germany alone has over 1,250 breweries, while in countries such as Belgium, the United Kingdom, the Czech Republic, Poland, Austria, the Netherlands, France, Lithuania and Romania the brewing sector landscape is highly diverse with 45 or more breweries per country. The number of European breweries can be estimated at more than 2,800, but this figure is constantly changing as microbreweries spring up across the European landscape. In many countries the number of breweries is growing fast; in Austria for example the figure has soared 60 breweries in 1980 to over 140 today.

In the brewing sector many companies combine traditions that are often centuries old with modern technology and innovative market approaches and consumers appreciate this combination of innovative technology and tradition. Beer brands are among the most popular brands in many European countries, with many consumers having strong loyalty towards local, regional or national brands. Employees also value the brewing sector, as one with relatively high productivity per employee and therefore good conditions in terms of wages and other labour conditions. Brewing companies are also very active in local communities, supporting many clubs and events, and on a national and global level through the sponsorship of major sports competitions and clubs. Brewers also take their social responsibility very seriously, contributing, through financing and other support, to campaigns to tackle drink driving and other forms of misuse of their products.

ANNEX I: VALIDATION OF RESULTS - METHODOLOGY & DATA USED

To present the economic impact of the brewing sector, three different effects may be distinguished:

- Direct impact.
- Indirect impact.
- Induced impact.

The **direct impact** is defined straightforwardly as jobs, value added and tax revenues generated directly by the brewing sector.

The **indirect impact** represents the impact of breweries on their suppliers. For producing 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 material such as glass and aluminium. Breweries also hire engineers, marketers, communications agencies and many more 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 results presented on the economic impact of the brewing sector derive mainly from four data sources:

- Data obtained from national associations representing the brewing sector.
- Data collected directly from breweries across Europe through a detailed questionnaire.
- Input-output tables representing national economies.
- Data available through sources such as Eurostat and other national and sectoral statistics.

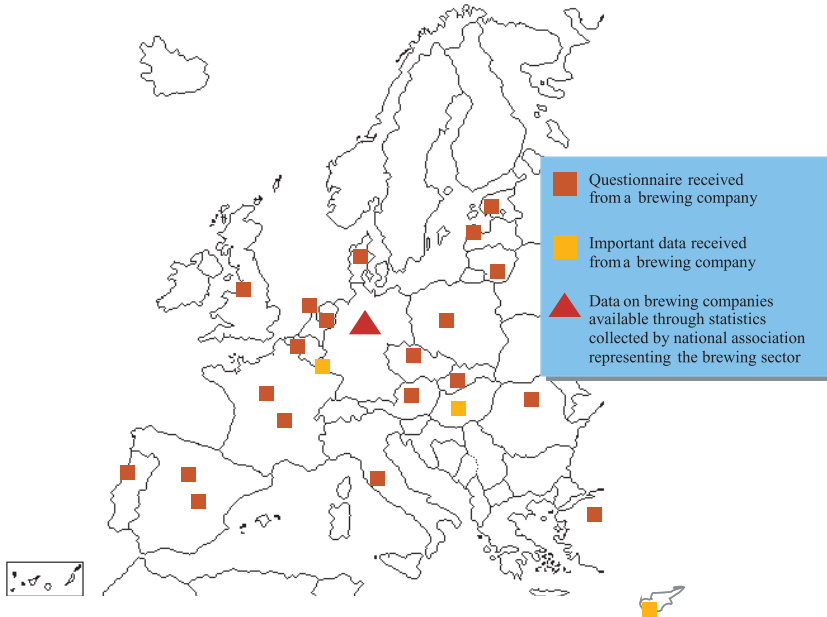
To strengthen the underlying database for this study, Ernst & Young has presented draft country reports on the economic impact of the brewing sector to all national associations representing the brewing sector. These validated reports provide necessary national checks on the European data series used.

Individual brewing companies have been another major source of valuable data. More than 20 brewing companies have completed a detailed questionnaire. Important elements of the questionnaire concerned were:

- 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.

Returned questionnaires provided good coverage of all European regions.



The final source of data concerns Eurostat statistics and other national and European data series. Eurostat statistics have provided useful data on labour costs, turnover and value added per employee and personal direct taxes paid by employees, generally covering all or most of the countries considered.

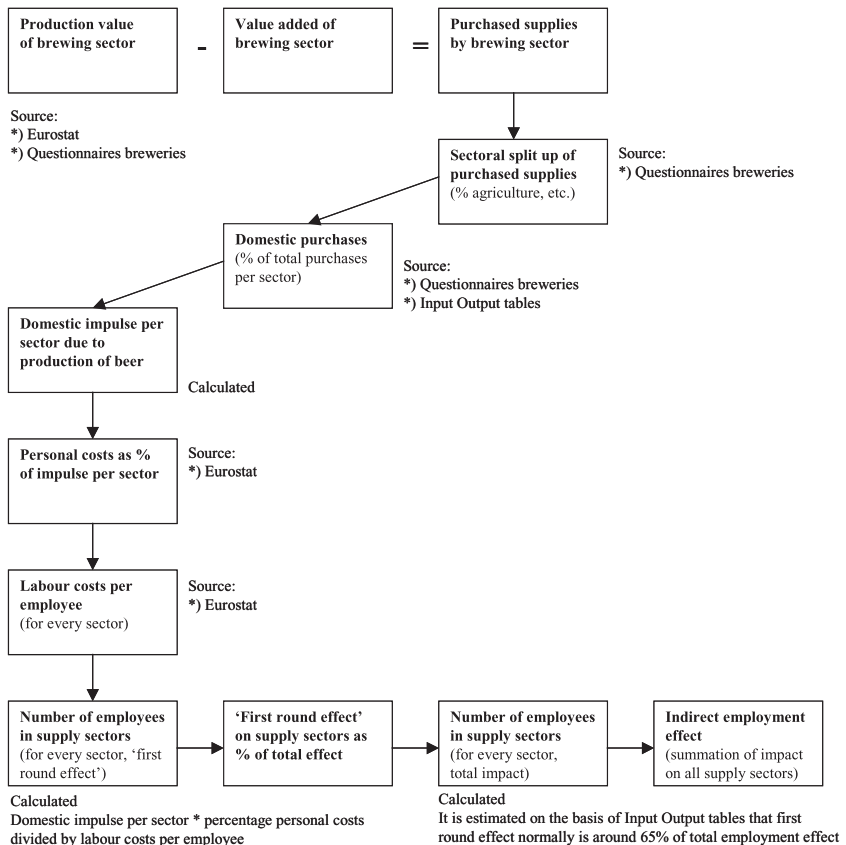
As a check on estimates made on the brewing sector's indirect impact, Ernst & Young has also used input-output tables representing the impact of the food and beverage sector on other sectors within a national economy. Input-output tables were available for 15 countries.

ANNEX II: HOW MOST IMPORTANT VARIABLES ARE ESTIMATED

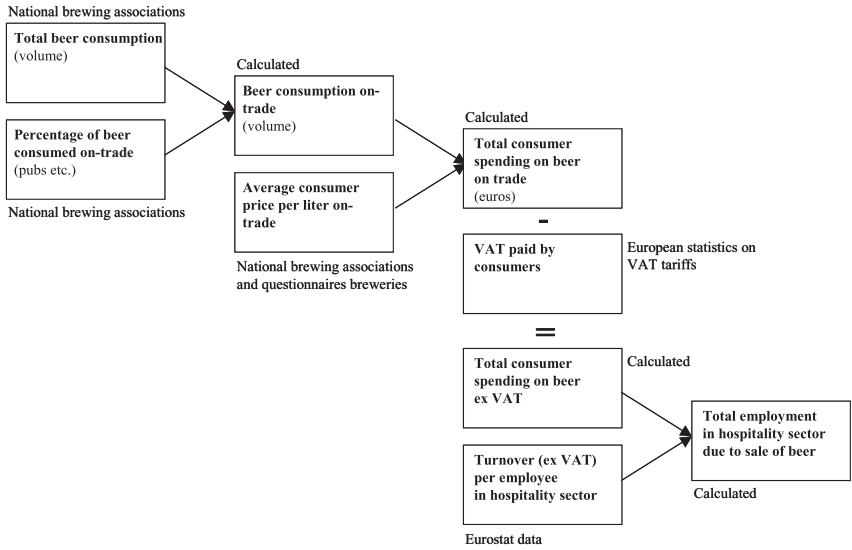
Some of the reported outcomes concerning the economic impact of the brewing sector are based on estimates by Ernst & Young. Hereafter we illustrate how these variables have been estimated, focusing on:

- Indirect employment due to the production of beer.
- Employment due to the sale of beer in the hospitality sector.
- Employment due to the sale of beer in shops, supermarkets and other retail outlets.

The indirect employment effect concerns the employment generated in supply sectors due to the production 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:



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.

ANNEX III: 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 that are located within a certain geographical area. These companies may also be involved in other activities than brewing beer, such as the production of soft drinks and bottled mineral water.
Direct employment	Employment, value added and tax revenues for governments generated directly by the brewing sector.
Europe	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom
Excise	A taxation of 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.
FTEs	Full time equivalents
Forward linkage	See induced employment
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.
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.
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