

# Economic Impact of the Turkish Brewing Sector

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Amsterdam / Istanbul, June 2011

A report commissioned by The Beer and Malt Producers' Association of Turkey and conducted by Ernst Young Kurumsal Finansman Danışmanlık A.Ş. and Regioplan Policy Research.

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# Key Messages

## Key messages of the economic impact of the Turkish brewing sector

- ▶ The Turkish brewing sector is dominated by two large companies: Anadolu Efes Biracılık ve Malt Sanayi A.Ş. (Efes) and Türk Tuborg Bira ve Malt Sanayii A.Ş. (Tuborg). Besides them, there are five smaller breweries active in the Turkish beer market.
- ▶ In 2010, total beer **production** in the Turkish brewing sector was **10,278,536 hectoliters** (hl) of beer, 0.6% more than in 2009.
- ▶ Approximately 10% of the beer that is produced yearly in Turkey is exported. The main **export** markets are Germany, Lebanon, Iraq and Azerbaijan. In 2010, **1,077,333 hl** (9% more than in 2009) of beer has been exported representing a value of €51.6 million.
- ▶ The Turkish **import** of beer is considered to be insignificant. In 2010, **13,800hl** of beer was imported representing a value of €1 million.
- ▶ In 2010, the **domestic sales** (consumption) amount to **9,215,003 million hl** of beer, which is 20,100 less than in 2009. The beer consumption per capita in Turkey is considered to be low. In 2010 it amounted to 12.4 liters per capita, while the average for EU27 countries was 75.3 liters.
- ▶ In 2010, the **total employment** effect of the brewing sector is estimated to be **53,570 jobs**, arising from the production and sale of beer. These are jobs at the breweries themselves, in the supply sectors and jobs in the on-trade and retail sectors. Compared to 2009, the number of jobs generated by the beer sector decreased by 2,100 personnel.
- ▶ The **value-added** due to beer-related activities was approximately **€763 million** in 2009 and **€818 million** in 2010; an implied increase of 7%.
- ▶ Accordingly, total **revenues for the government** of Turkey were **€1.6 billion** in 2010 and €1.3 billion in 2009. These revenues include VAT, social security contributions, excise duties and corporate taxes.
- ▶ When the revenues for the government per 1000 hl produced are compared, the revenues for the Turkish government are much higher than those of EU Member States with a comparable GDP to Turkey. In absolute figures the Turkish government's revenues are also almost the same amount as the revenues for the governments of Ireland, Finland and Sweden, which are the countries with the highest taxation on alcoholic beverages in the EU.
- ▶ Since 2002, the Turkish excise rate levied on beer has been raised eight times, and is significantly above the average excise rate levied in EU Member States. It is almost as high as the excise rate in Finland, which has the highest excise tax within EU countries.
- ▶ In Turkey, for each bottle of beer sold off-trade, 70 cents goes to the government in the form of VAT and excises, whereas for on-trade 78 cents of each Euro goes to the Turkish government. Compared to the EU Member States, these rates are relatively high.

Recent or upcoming developments that (may) impact the contribution of beer industry to the Turkish economy are:

- ▶ higher prices for agricultural inputs;
- ▶ difficulties in providing barley for beer;
- ▶ further increases in the taxation on beer;
- ▶ new legal constraints on advertisement and merchandising;
- ▶ smoking ban;
- ▶ unregistered structure in other alcoholic beverage sectors; and
- ▶ illegal wine production and sales.

# About The Study

## Purpose of the study

This study has been commissioned by the Turkish Beer and Malt Producers' Association (BMÜD) to quantify the economic impact of the brewing sector in Turkey.

## Economic impact

Three different impacts are distinguished to provide a complete picture of the economic effects of the beer sector: the direct impact, indirect impact and induced impact.

The **direct impact** is defined straightforwardly as the effect generated directly by beer-producing companies.

The **indirect impact** represents the effect of beer drinks producers on their suppliers. A diverse range of goods and services need to be purchased to be able to produce beer drinks. To mention just a selection: water, agricultural products, e.g. hops, malt and malting barley, and packaging materials such as bottles and cardboard. Beer-producing companies also hire engineers, marketers, communications agencies and many more services. This study distinguishes seven supply sectors: suppliers of raw materials; utilities (electricity, gas and water); packaging and bottling industry; transport and storage; media, marketing and communication; equipment, manufacturing and other industrial activities; and other services/activities such as business activities, community, social and personal services.

The **induced impact** is the economic contribution of firms in off-trade outlets and the on-trade sector resulting from the sale of beer. The sale of beer drinks by off-trade outlets and on-trade firms is an important source of economic benefits. The reported induced effects only concern the effects caused by sales of beer. For example effects caused by the sales of other drinks in on-trade (such as coffee, tea, juices, spirits, and wine) are not within the scope of this study and are thus not taken into account.

We measured the effects in three areas, which are mentioned and defined below:

**Employment** is the number of persons employed or the number of jobs.

**Value-added** is the amount of value that is added to a product or service by a company before the product is offered to customers. In other words, 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 labor, capital, entrepreneurship).

**Government revenues** include all amounts of money received from sources outside the government entity from taxation, fees, fines, and licenses. In the scope of this study it is in particular the income the government receives from excise duties, VAT, corporate taxes, social security contributions and income and payroll taxes.

## Data collection

Most of the reported outcomes are based on questionnaires received from the BMÜD or the two large brewing companies (i.e. Anadolu Efes Biracılık ve Malt Sanayi A.Ş. (Efes) and Türk Tuborg Bira ve Malt Sanayi A.Ş. (Tuborg)). In case data was not available, we used other existing data that have been derived from a variety of sources. The base years for the analysis are **2009** and **2010**. If data was not available for these years, data from the previous year (2008) was used. In hierarchical order of importance these sources are:

- ▶ data from the Tobacco and Alcohol Market Regulatory Authority in Turkey (TAPDK);
- ▶ data obtained from a questionnaire completed by the national association representing the beer sector (BMÜD);
- ▶ data collected directly from Efes and Tuborg through a detailed questionnaire;
- ▶ data from the Turkish Statistical Institute (Türkiye İstatistik Kurumu, TÜİK);
- ▶ data from additional (public) sources, such as the Brewers of Europe, the European Commission and Eurostat.

## Economic model

Some of the reported outcomes are estimated on the basis of a **model** constructed by Ernst & Young and Regioplan Policy Research. For this reason, these outcomes are not a direct representation and are dependent on methodological choices made by Ernst & Young and Regioplan Policy Research. These choices are elucidated in Annex III. The methodology used for estimating the economic impact is described in Annexes I to III.

## Country comparisons

In this report we make a number of comparisons between the Turkish economic impact of the brewing sector and figures of European Union Member States which we previously calculated as part of another study. We make comparisons with two different groups of countries. The first group consists of countries with a similar gross domestic product per capita in purchasing power standards (GDP PPS) as Turkey: Bulgaria, Romania, Latvia, Poland, Lithuania, and Hungary. For the second comparison group we selected the four EU Member States with the highest taxation on beer in the EU: The United Kingdom, Ireland, Sweden and Finland. Apart from these two comparison groups, we also make comparisons with the average of the EU Member States (EU27). The comparison study is based on data of 2009. Data of other countries for 2010 will be available in August 2011.

Comparisons with neighboring countries were not possible due to the lack of comparable data or the reliability of the data from countries such as Iran, Iraq, Georgia, Syria and Armenia.

For further details on the methodology and scope of this study, please refer to Annex I, II, and III.

# 1 The Turkish Beer Market

## 1.1 Highlights

Figure 1.1: Key figures for beer sector in Turkey

Key figures	2009	2010
Production <sup>1</sup>	10,219,290 hl	10,278,536 hl
Exports	988,133 hl	1,077,333 hl
Imports	3,925 hl	13,800 hl
Consumption	9,235,081 hl	9,215,003 hl
Production value	€681 million	€752 million
Consumer spending on beer	€2.3 billion	€2.7 billion
Brewing companies	7	7
Breweries	11	11

Sources: TAPDK; Questionnaires; and The Brewers of Europe Beer Statistics 2010 edition.

## 1.2 Production

The Turkish brewing sector is dominated by two large players: Anadolu Efes Biracılık ve Malt Sanayi A.Ş. (Efes) and Türk Tuborg Bira ve Malt Sanayii A.Ş. (Tuborg). These two companies operate a total of six breweries in Turkey and together their market share is 99%. Beside these breweries owned by Efes and Tuborg, there are five smaller companies active in the Turkish market, in some cases these are micro breweries.

The whole brewing sector produces 37 different brands of beer; most of them are produced by Efes and Tuborg. In 2010 the sector produced approximately 10,278,536 hectoliters (hl) of beer; this is 0.6% (59,246 hl) more than in 2009.

Besides the brewing, production and sales of beer, these brewing companies also carry out beer-related activities such as the cultivation of agricultural products needed for the production of beer, the transportation of beer, the wholesale of beer, the bottling and packaging of beer, and production and sales of malt. Some brewing firms also exploit pubs.

<sup>1</sup> Including the beer production for export purposes.



Figure 1.2: Beer producing companies in Turkey

Beer company	Number of breweries	Number of brands
Efes	5	17
Tuborg	1	8
Park Gıda	1	1
Süral Holding	1	1
Elif Turizm	1	4
Istanbul Gıda	1	3
Feza Turizm	1	3
<b>Total</b>	<b>11</b>	<b>37</b>

Sources: Questionnaires BMÜD

### 1.3 Exports and imports

#### Exports

In 2010, 1,077,333 hl of beer that was produced in Turkey, was exported. This is 9% more than the amount that was exported in 2009. The main export markets for Turkish beer are Germany, Lebanon, Iraq and Azerbaijan. In 2010 the value of the beer exported was €51.6 million. This is 16% more than the value of the beer exported in 2009.

Figure 1.3: Beer export of Turkey

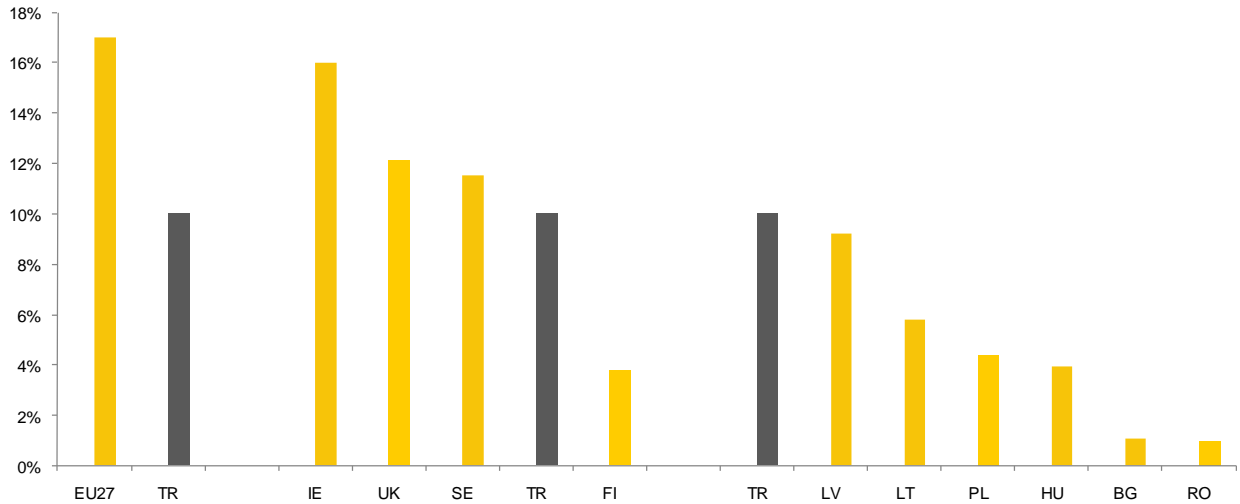
	2009	2010
Export in hl	988,133 hl	1,077,333 hl
Export in value €	€44,416,794	€51,617,521

Sources: TAPDK and the Turkish Undersecretaries of Foreign Trade

The next figure illustrates that the beer market is an open and global market. Although consumers in many countries prefer to drink beer brewed domestically and locally, European beers are appreciated worldwide. This is also the case for Turkish beer. Relatively speaking, Turkey exports more beer than Poland when the percentage of export to the total production figures of these two countries is considered. This is remarkable as Poland is an important beer producing country in Europe.

Compared to the average for the EU 27, Turkey exports less beer when the percentage of export in total production is considered. Based on the same parameters, compared to the countries with the highest excise duties levied on beer, Turkey has a similar export level with these countries, such as the United Kingdom, and Sweden. On the other hand, compared to the countries with similar gross domestic product per capita in purchasing power standards (GDP PPS), Turkey exports more beer than these countries, such as Latvia and Lithuania.

**Figure 1.4: Exports as percentage of production per country in 2009 (comparison study)**



Sources: *The Brewers of Europe Beer Statistics 2010 edition*; *Canadian Global Beer Trends (2010)*; and Eurostat

### Imports

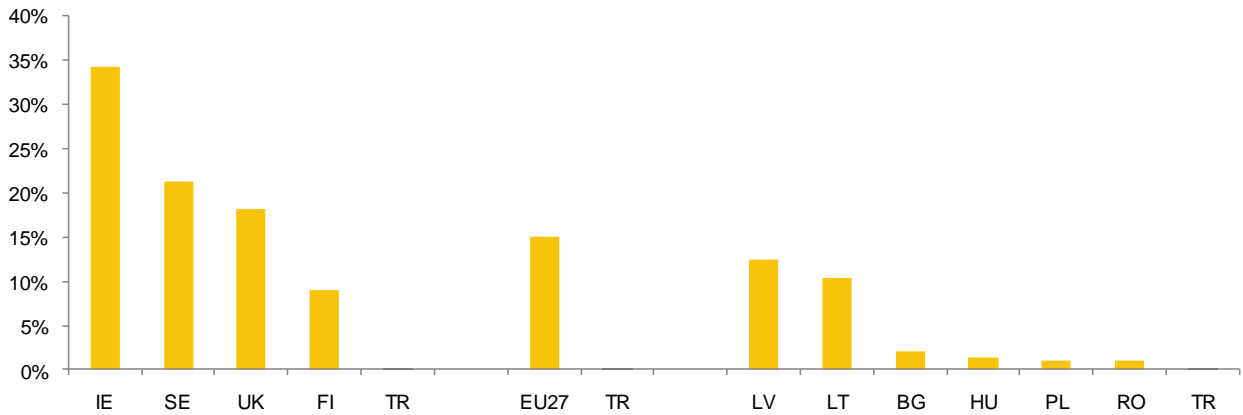
Less than 1% of the beer sold in Turkey is imported. Compared to other countries the Turkish beer import is relatively small. In 2010, approximately, 13,800 hl of beer is imported. This is 3.5 times more than the previous year. The value of the beer imported in 2010 was €1 million, which is 44% more than in 2009.

**Figure 1.5: Beer Import of Turkey**

	2009	2010
Import in hl	3,925 hl	13,800 hl
Import in value €	€704,320	€1,019,581

Source: TAPDK and the Turkish Undersecretaries of Foreign Trade

Figure 1.6: Imports as share of consumption per country in 2009



Sources: Questionnaires; *The Brewers of Europe Beer Statistics 2010 edition*; *Canadian Global Beer Trends 2010*; and Eurostat.

## 1.4 Consumption

Approximately 9.2 million hectoliters of beer have been consumed in Turkey in 2010. Compared to 2009, the consumption of beer has decreased by c. 20,100 hl, a decrease of 0.22%.

Compared to all of the EU Member States, the beer consumption per capita in Turkey is very low. In 2009 it amounted to 12.7 liters per capita while it was 75.3 liters for average EU 27. Besides, the total pure alcohol consumption<sup>2</sup> in Turkey is, compared to other countries, also low, 1.1 liter per person.

<sup>2</sup> The total pure alcohol consumption consists of pure alcohol consumption from all kinds of alcoholic drinks, such as beer, spirits and wine.

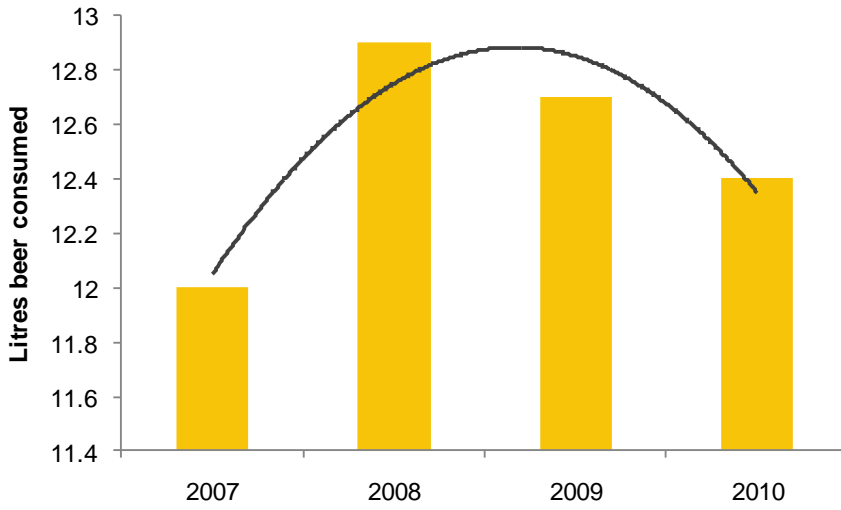
Figure 1.7: Beer consumption per capita in 2009 in liters

Country	Final product beer per person consumed	Pure alcohol beer consumption
Czech republic	159.3	7.6
Germany	109.6	5.4
Austria	106.2	5.1
Finland	87.7	4.1
Ireland	91.0	5.0
Poland	85.0	4.3
Lithuania	83.4	3.7
Belgium	81.0	4.4
Romania	81.0	3.8
United Kingdom	75.8	3.5
<b>Average EU 27</b>	<b>75.3</b>	<b>3.5</b>
Bulgaria	67.0	3.8
Hungary	65.0	3.3
Latvia	62.9	2.9
Norway	55.0	2.6
Sweden	52.3	2.6
<b>Turkey</b>	<b>12.7</b>	<b>0.7</b>
Lebanon	5.0	0.2
Syria	4.5	0.2

Sources: *The Brewers of Europe Beer Statistics 2010 edition*; *The IWSR Yearbook 2009*; *Lebanon Food and Drink Report 2010*; and *Sales Volume Euromonitor 2010*

If we look at the development of the per capita beer consumption in Turkey over the last four years (2007-2010), it turns out that the consumption level falls back to the level of 2007.

Figure 1.8: Beer consumption per capita in Turkey per year



Sources: Questionnaires BMÜD

Figure 1.9: Beer consumption per capita in Turkey per year

Turkey	2007	2008	2009	2010
Beer consumption per capita/l	12.0	12.9	12.7	12.4

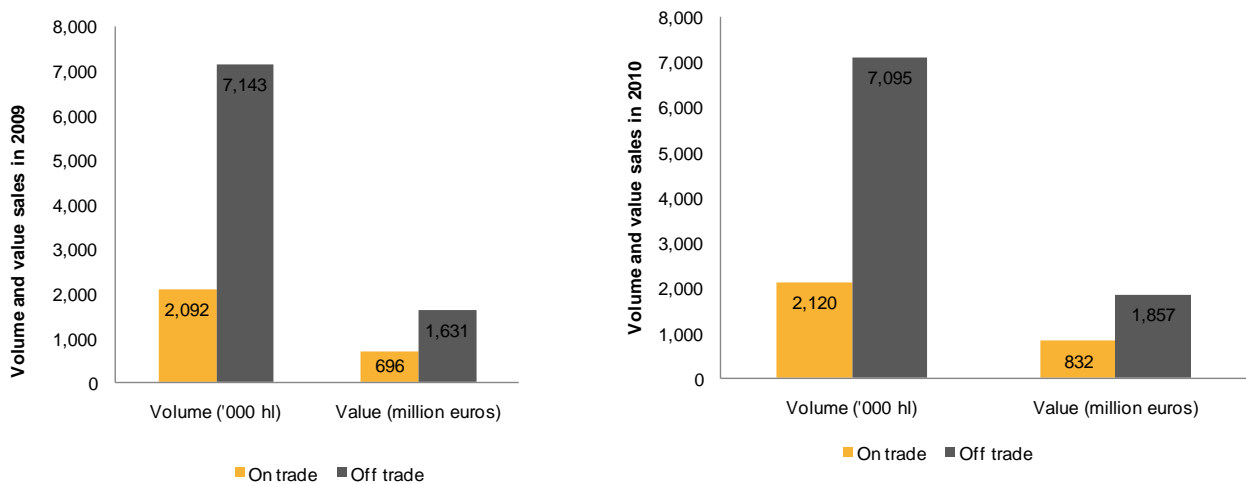
Sources: Questionnaires BMÜD

Some plausible explanations for the beer consumption decrease are considered to be the tax burden, decreasing popularity of beer, changing alcohol consumption patterns in Turkey, economic crisis and alcohol acceptance, and the limited opportunities for promotion and advertising of beer in Turkey.

## 1.5 Distribution channels

Of all the beer consumed in Turkey, about 77% is purchased in supermarkets and other retail outlets, referred to as the off-trade channel. The remaining 23% is purchased in the on-trade sector (bars, restaurants, etc.).

Figure 1.10: Volume and value beer sales



Source: Calculations by Ernst & Young and Regioplan

Focusing on the off-trade channel, the brewing companies are experiencing an increase in sales volume and value in supermarkets. This could be explained by the overall decrease in the number of (smaller) grocery stores and increase in supermarkets, in general, in Turkey.

## 1.6 Profitability

In 2009, the Brewers of Europe presented an analysis in relation to the costs of producing beer. One of their findings is that beer is the most expensive alcoholic drink to produce. In their comparable cost analysis they have taken into account the spending on raw materials and supplies, labor costs and distribution costs.

The cost of producing one liter of spirits in terms of finished product was 3.5 times higher in 2007 than the costs of producing one liter of wine or beer. However, when converted to pure alcohol, wine is the cheapest form of alcohol to produce (€17.90), similar to spirits (€18.60), and 2.5 times less the cost of producing one liter of pure alcohol in beer which is €45.20.

Adding excise taxes, beer is still the most expensive form of alcohol to produce and deliver to the consumer. The average retail price including taxes of one liter of alcohol in beer is €84 compared to €77 for wine and €65 for spirits.

Another main conclusion is that, compared to the other types of alcoholic beverages, beer achieves the smallest net margin per liter of finished product. Only due to the high volumes sold, beer adds up to a large total margin.

The picture of profitability of the brewing sector is overall one for the European brewing sector. There are no data available to point out what is the profitability of the Turkish brewing sector as a whole. Collecting new data on this point was out of the scope of this study.

## 2 Government Revenues

### 2.1 Highlights

Figure 2.1: Government revenues from beer

Government revenues	(mIn €) 2009	(mIn €) 2010
Excises	555	824
VAT – Hospitality sector	106	127
VAT – Retail sector	249	283
Social contributions	277	261
Corporate taxes	40	40
Other taxes	40	50
<b>Total</b>	<b>1,267</b>	<b>1,585</b>

Source: Questionnaires

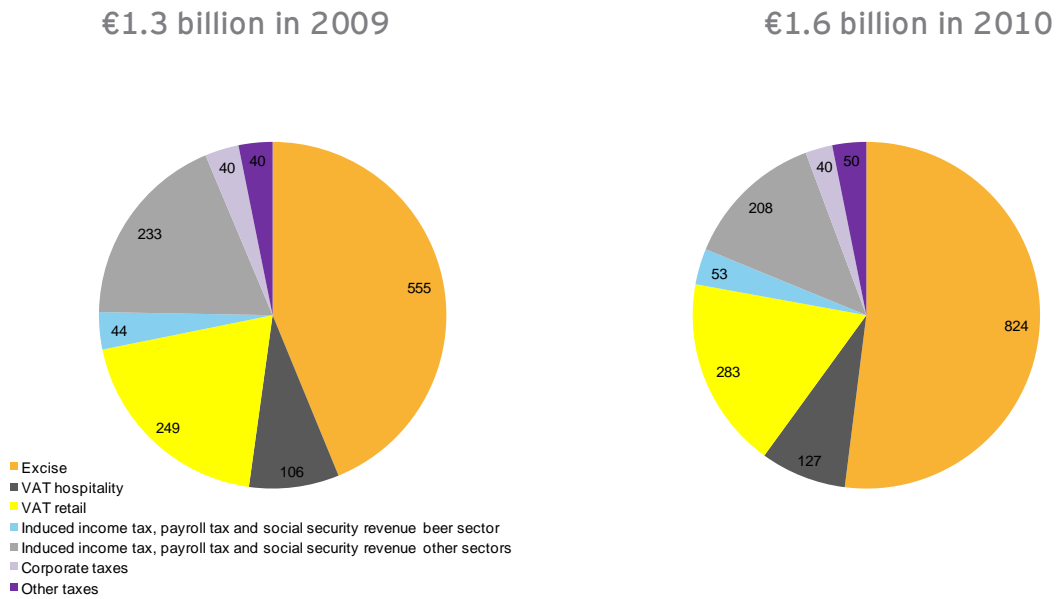
### 2.2 Government revenues

The Turkish government benefits substantially from the production and sale of beer by receiving revenues from excise duties levied on beer (ÖTV), VAT (18%), 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' (supply sectors, on-trade channels and retail sectors). Besides the aforementioned taxes, the Turkish government also benefits from other taxes, such as corporate taxes, property taxes (for example taxes on real estate), environmental taxes, announcement and advertising tax, Stamp Tax, TAPDK Product Monitoring Amount, TAPDK Sales Service Amount, fuel tax, packaging taxes, and vehicle excise duty.

Since 2002, the excises levied on beer have been raised eight times. The last increase of the excise rate dates from 28 October 2010 (an increase by 25.7%, see section 2.3 for more details). In addition to that the rates of other taxes, such as property taxes (for example taxes on real estate), some environmental taxes, announcement and advertising tax, Stamp Tax, TAPDK Product Monitoring Amount, TAPDK Sales Service Amount, packaging tax and the fuel tax have also been increased in the last years.

For the purpose of this study we have calculated the 2009 and 2010 revenues for the Turkish government arising from the beer trade. In 2010, these tax revenues amounted to €1.6 billion. The revenues from the taxes that have been taken into account were 25% higher than the estimates for 2009. It is important to note that these calculations are based on the answers received through questionnaires performed.

Figure 2.2: Government tax revenues from beer industry

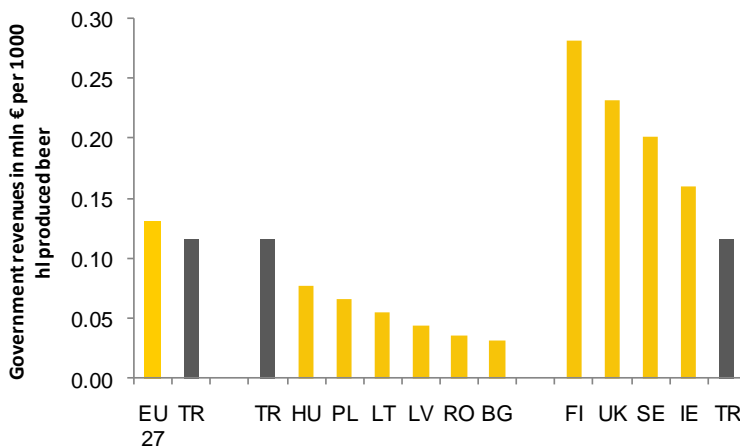


Source: Calculations by Ernst & Young and Regioplan

Furthermore, a comparison of the revenues for the government arising from beer activities was conducted on country basis. In order to make a sound comparison, we have compared the countries based on their revenues per 1000 hectoliters of beer produced. For Turkey, the revenues on corporate taxes are excluded since this information is not available for the EU Member States. Accordingly, in the country comparisons (figure 2.3) only the government revenues on excises, VAT, income taxes and social security revenues have been taken into account.

For every 1000 hl beer produced in Turkey, the Turkish government has received €0.12 million. This is almost the same as the average for EU27 and more than the countries with similar GDP per capita in PPS as Turkey. In absolute figures, Turkey receives almost an equivalent amount of revenues from beer as Ireland, Finland and Sweden, which are the countries known for their high taxation on alcoholic beverages.

Figure 2.3: Government revenues per 1000 hl beer produced in 2009 (in Euros)

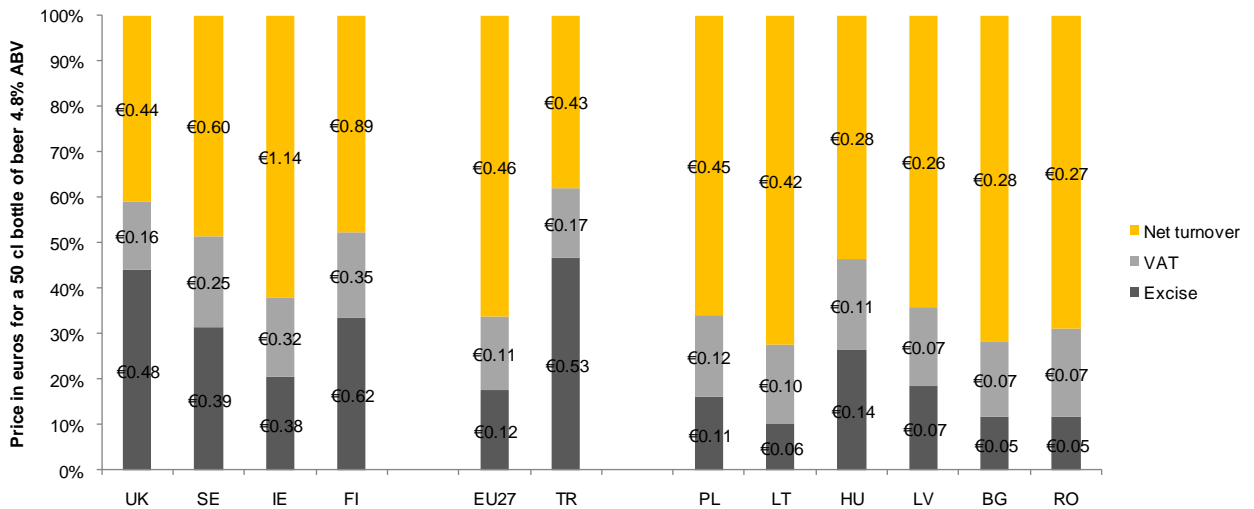


Source: The Brewers of Europe Beer Statistics 2010 edition, and The Contribution made by Beer to the European Economy 2009



Of the four taxes mentioned before, only VAT and excise taxes are levied directly on the consumption of beer. Therefore, in order to capture the effect of these direct taxes, we have performed two other comparison analyses on country basis, including the government revenues on VAT and excises. Based on our calculations in Turkey, for each bottle of beer sold off-trade, 70 cents go to the government in the form of VAT and excises. This ratio for Turkey is comparable to the United Kingdom and Finland, the countries which has the highest tax level within the EU Member States.

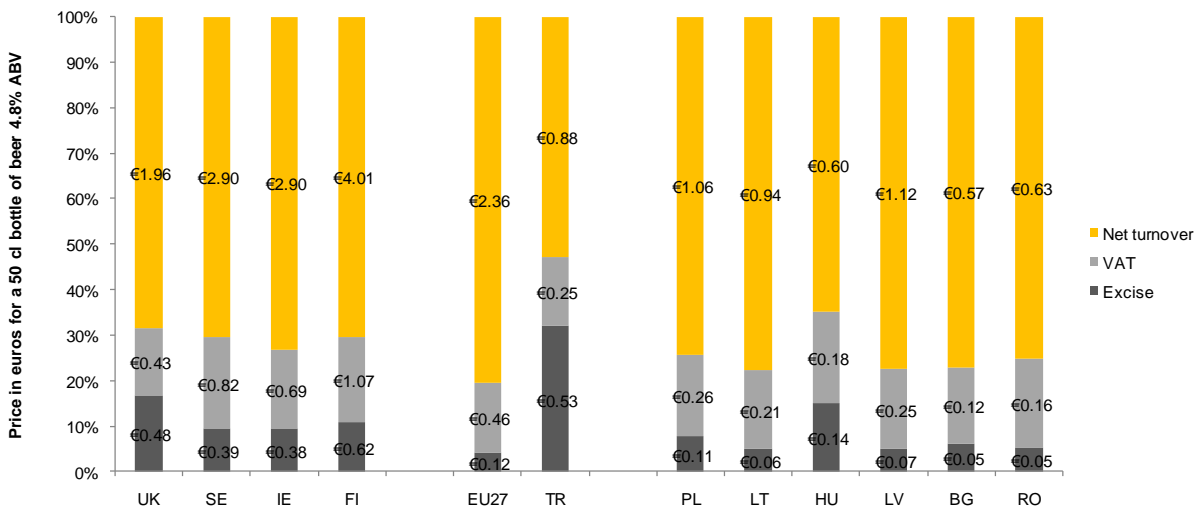
Figure 2.4: VAT and excise revenues per 50 cl beer 4.8% ABV in the off-trade channel



Source: Calculations by Ernst & Young, The Netherlands and The Contribution made by Beer to the European Economy 2009

If the same calculation is performed for the on-trade channel, it turns out that for each bottle of beer sold on trade Turkey, 78 cents go to the government in the form of VAT and excises. In EU Member States with a similar GDP PPS 17 to 37 cents go to the government, whereas the EU average is 58 cents.

Figure 2.5: VAT and excise revenues per 50 cl beer 4.8% ABV in the on-trade channel

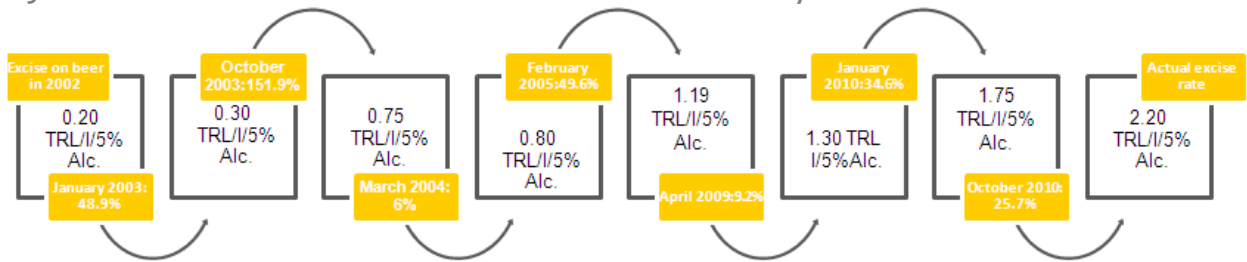


Source: Calculations by Ernst & Young, The Netherlands

### 2.3 Excises on alcohol beverages

As mentioned in the previous sections, the excise rate levied on beer has been raised eight times since 2002. The figure below shows the exact timing and amount of the increases in TRL currency.

Figure 2.6: Beer excise increases since 2002 in Turkey



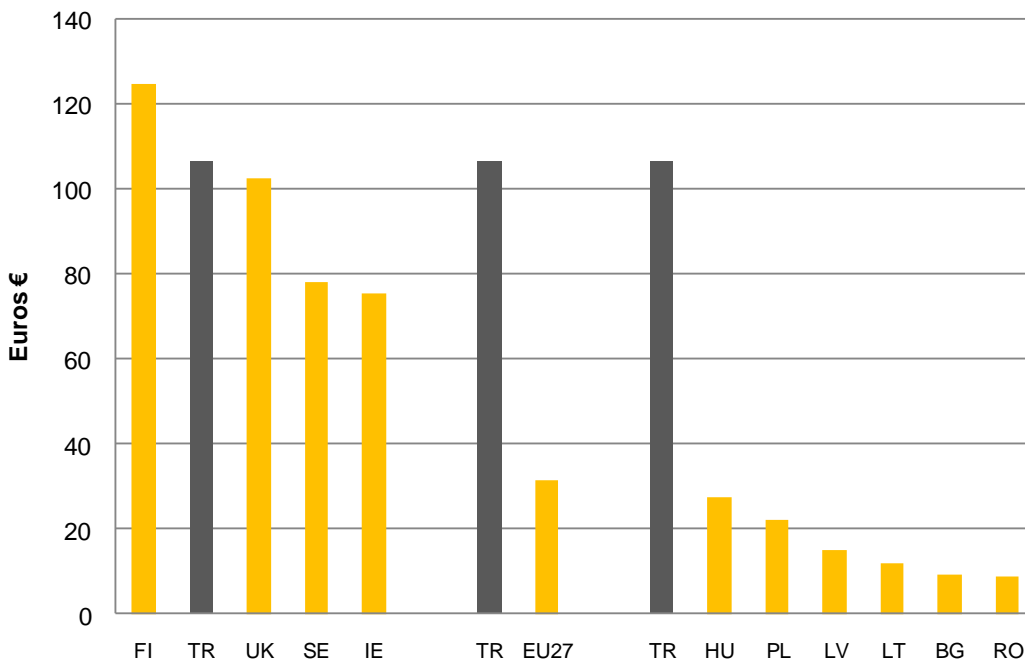
Source: BMÜD

#### Comparison with EU Member States

When the current excise duty on beer is compared with excise duties in other countries, it turns out that the Turkish excise rate is one of the highest among all of the comparison countries, not only in comparison to EU Member States with a comparable GDP PPS per capita, but also compared to the countries with the highest excise rates in the EU, with the exception of Finland (which has a higher rate).

In Turkey, the excise tax imposed on beer is seven times higher than the average excise duties in countries with similar GDP PPS per capita as Turkey and three times higher than the average of the European Union Member States. It is also high compared to the Scandinavian EU member states, except for Finland where excise duties for 2011 are higher than in Turkey.

Figure 2.7: Excise duties on beer in 2011 (€/hl) 12°Plato or 4.8% Abv



Source: The Brewers of Europe Excise Duty Rates for beer 2011

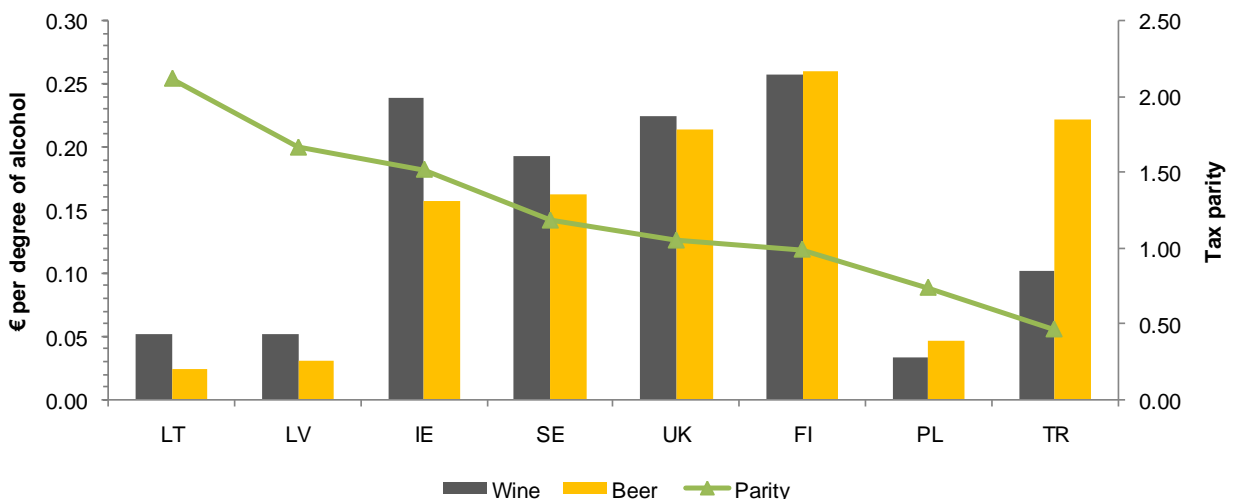
### Comparisons with wine

In many European countries no or only few excise duties are levied on wine. This applies to Austria, Bulgaria, Czech Republic, Hungary, Italy, Malta, Romania, Slovenia, Slovakia and Spain. For the countries that levy excises on wine, the excise duty on wine is the highest in Finland, Ireland, United Kingdom, Sweden and Turkey.

In order to determine whether beer and wine are taxed similar in Turkey and in the comparison countries, we calculated for each country the wine/beer tax parity. If the tax burden is exactly the same for wine and beer, the wine/beer tax parity is calculated to be 1. For countries that do not levy excises on wine, this parity is zero.

For Turkey we calculated a wine/beer parity of 0.46, which implies that tax burden on beer is higher than that on wine. In the other countries with comparative GDP PPS per capita as Turkey, the tax burden on wine is relatively higher than that on beer (the tax parity is higher than 0.46). In the comparison countries with high taxation on alcoholic beverages, the wine/beer parity is around 1. This means that the tax burden on beer and wine is comparable in these countries.

Figure 2.8: Tax parity wine/beer <sup>3</sup>



Source: calculations by Ernst & Young and Regioplan

### Comparisons with spirits

For spirits, the countries with the highest excises are Sweden, Finland, Ireland, Turkey and United Kingdom. It is also remarkable that Turkey has high excise duties for their alcoholic beverages compared with neighboring countries.

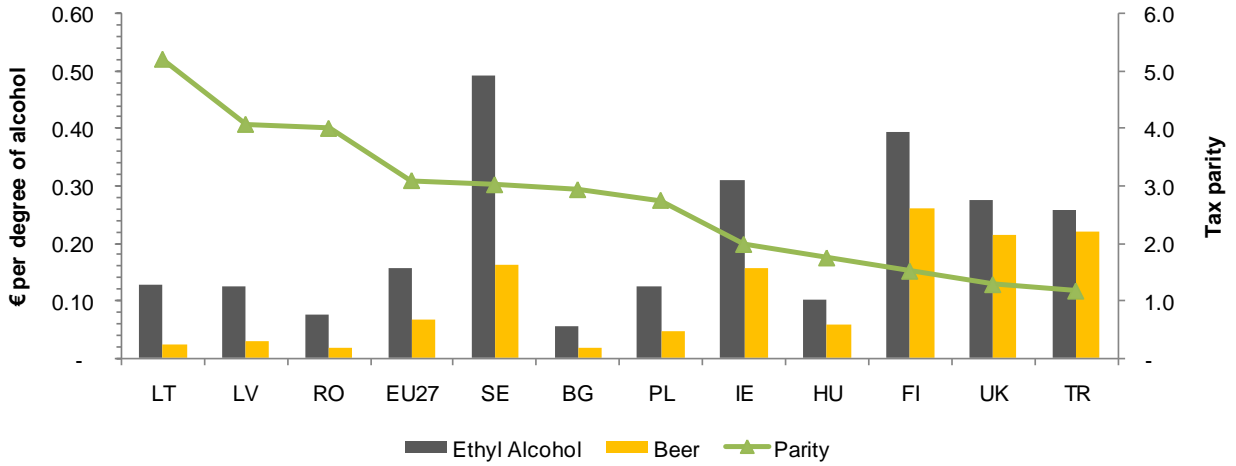
For spirits we have also calculated a tax parity to determine whether beer and spirits are taxed similar in Turkey and in the comparison countries. If the tax burden is exactly the same for spirits and beer, the spirits/beer tax parity is calculated to be 1.

The spirits/beer tax parity is 1.17 in Turkey. This means that beer is taxed almost equivalent as spirits in Turkey. In other words there are few or no distinctions made between the taxation on beer and spirits despite the alcohol content in final products.

In all of the comparison countries the spirits/beer tax parity is (much) higher than in Turkey, which means that in these countries the tax burden on spirits is relatively (much) higher than on beer when the excises are compared on the basis of liters of pure alcohol. On average, the spirits/beer tax parity for the EU is 2.94.

<sup>3</sup> In figure 2.8 the average of EU27 is missing. Most European countries does not levy excises on wine. Besides the wine excises for some countries is not available.

Figure 2.9: Tax parity spirits/beer in 2010



Sources: *The Brewers of Europe, European Commission, and calculations by Ernst & Young and Regioplan*

**Final remarks**

Compared to wine, the excise rate levied on beer in Turkey is relatively high based on the excise rate in euro per liter of pure alcohol. On the other hand, the excise rate levied on spirits in Turkey is comparable to the excise tax on beer. Compared to the comparison countries, beer in Turkey is taxed more heavily than wine. When we look at the taxation for beer and spirits, the taxation in Turkey differs from countries with a similar GDP as Turkey. The beer taxation in Turkey is almost equivalent as the taxation on spirits, while in the other countries spirits are taxed more heavily than beer. In its taxation of beer and spirits Turkey is more comparable with countries known by their high alcohol taxation, such as Finland and the United Kingdom.

Having said that, in most of the EU Member States taxes on spirits are usually higher than taxes on beer. However, in accordance with the related EC Council Directive, the minimum excise duty level of spirits, based on alcohol content, is more than 2.9 times of beer, whereas, this ratio is currently much lower in Turkey, which in turn, acts as discriminatory against beer products when compared with EU member states.

## 3 Value-added

### 3.1 Highlights

Figure 3.1: Value-added generated by sector due to beer sales

Value added	(mIn €) 2009	(mIn €) 2010
Beer sector	336	371
Supply sectors	146	165
On-trade channel	178	180
Off-trade channel	103	102
<b>Total</b>	<b>763</b>	<b>818</b>

Source: Calculations by Ernst & Young and Regioplan

### 3.2 Value-added by sector

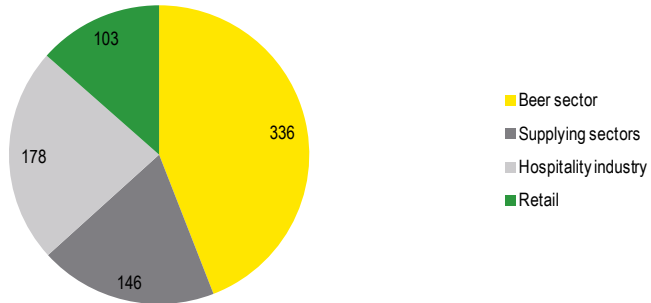
Another contribution of the beer industry is the value-added it generates, and the value-added generated by the supply, the retail and the on-trade sectors. Value-added can be defined as the difference between the production value and the value of purchased inputs (goods and services). In economic terminology value-added is also defined as the reward for all production factors (mainly labor, capital, entrepreneurship). For the governments in Europe the value-added is important because they levy a tax on it, namely VAT.

In the year 2010, the employees in the beer sector and beer-related activities together (supply sectors, on-trade and retail sectors), generated €818 million of value-added. Of this value-added €371 million was generated in the beer sector, €165 million in the supply sectors, €180 million in the on-trade sector and €102 million in the retail sector. Compared to 2009, the overall value-added achieved in 2010 due to the production and sales of beer increased by 7%.

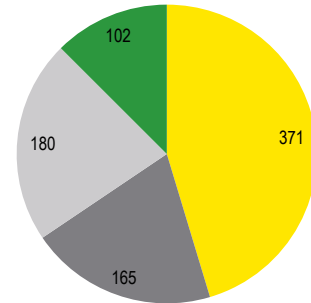
The brewing sector's share in overall value-added arising from the production and sale of beer is 45%, which is much higher than the brewing sector's share in total employment arising from beer (4.5%). A significant explanation for this is the higher productivity of employees in the brewing sector in comparison with the productivity of employees in other sectors. In the figures below the value-added arising from beer-related activities in Turkey is presented.

Figure 3.2: Value added by beer sector

€763 million in 2009



€818 million in 2010



Source: Calculations by Ernst & Young and Regioplan

# 4 Employment

## 4.1 Highlights

Figure 4.1: Number of persons employed due to beer production and sales

Jobs <sup>4</sup>	2009	2010
Direct employment at brewing companies	2,300	2,400
Employment due to beer in the supply sector	13,580	13,570
Employment due to beer in the on-trade sector	30,000	28,500
Employment due to beer in retail sector	9,800	9,100
<b>Total employment due to beer</b>	<b>55,680</b>	<b>53,570</b>

Source: Calculations by Ernst & Young and Regioplan

## 4.2 Total employment due to beer

Total employment related to the production and sale of beer in 2010 is approximately 53,570 in Turkey. This is 3.8% less than in 2009. This employment consists of 2,400 jobs in the beer sector (2.4% more than in 2009); 13,570 jobs in the supply sectors (0.6% less than the previous year); 28,500 jobs in the on-trade sector (4.8% less than in 2009) and 9,100 jobs in the retail sector (6.7% less than in 2009). In the figures below, the employment arising from beer-related activities is presented per sector.

Figure 4.2: Total employment due to beer



Source: Calculations by Ernst & Young and Regioplan

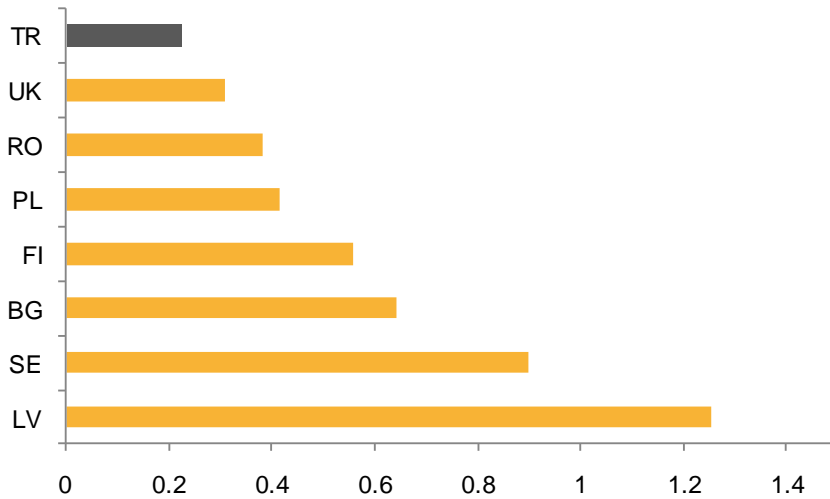
<sup>4</sup> Presented figures are round numbers

### 4.3 Direct employment

Compared to 2009, the number of jobs at brewing companies has increased from 2,300 in 2009 to 2,400 in 2010. Looking at the comparison countries, the number of persons directly employed by breweries is the lowest in Latvia (1,700 jobs), and the highest in the United Kingdom (13,900).

If the direct jobs created for every 1000 hectoliters produced are considered, the Turkish breweries create 0.25 jobs per 1000 hl. This figure is very low compared to Latvia where the breweries create 1.25 jobs per 1000 hl. However, this also means that the productivity in Turkey is much higher than in Latvia. In Finland and Bulgaria, breweries employ about the same amount of personnel as in Turkey. However, they create more direct jobs per 1000 hl of beer. In Finland breweries generate 0.55 jobs per 1000 hl and in Bulgaria 0.64 jobs per 1000 hl.

Figure 4.3: Direct jobs per 1000 hl produced by country in 2009



Source: *The Brewers of Europe Beer Statistics 2010 edition* and *The Contribution made by Beer to the European Economy 2009*



#### 4.4 Indirect employment

Figure 4.3: Indirect jobs in Turkey by year

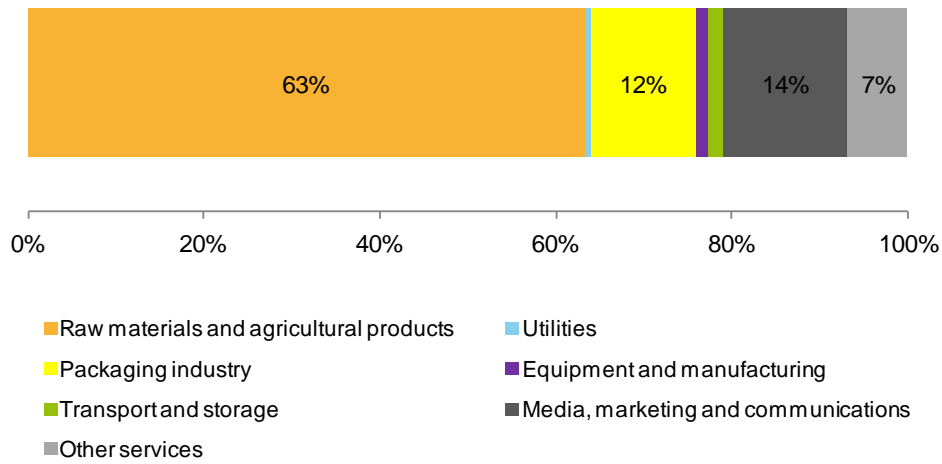
<b>Jobs<sup>5</sup></b>	<b>2009</b>	<b>2010</b>
Agricultural products	8,600	8,200
Utilities	80	70
Packaging and bottling industry	1,600	1,600
Equipment, manufacturing, and other industrial activities	200	200
Transport and storage	300	300
Media, marketing, and communications	1,900	2,200
Other services	900	1,000
<b>Total employment due to beer</b>	<b>13,580</b>	<b>13,570</b>

Source: Calculations by Ernst & Young and Regioplan

The brewing sector also generates considerable indirect employment in the economy. The production and sale of beer by breweries is only possible since various sectors provide the necessary goods and services, ranging from malting barley to energy and transportation capacity, and a variety of industrial products and services. The indirect effect is 13,570 jobs in the supply sectors in 2010 (0.6% less than in 2009). Relatively speaking, most additional jobs are generated in the agricultural sector and in the media, marketing and communications sectors. The indirect employment in 2010 was 8,200 jobs in the agricultural sector (5.5% less compared to 2009), 2,200 jobs in the media, marketing and communications (15% more compared to 2009), 1,600 jobs in the packaging and bottling industry (same with 2009), 1000 jobs in services (11% more), 300 jobs in transport and storage (same with 2009), 200 jobs in equipment and manufacturing (3.4% more), and 70 jobs in the utilities sector (13% less than in 2009). See annex VIII for further details concerning the indirect employment generated in the supply sector due to the purchases of the breweries.

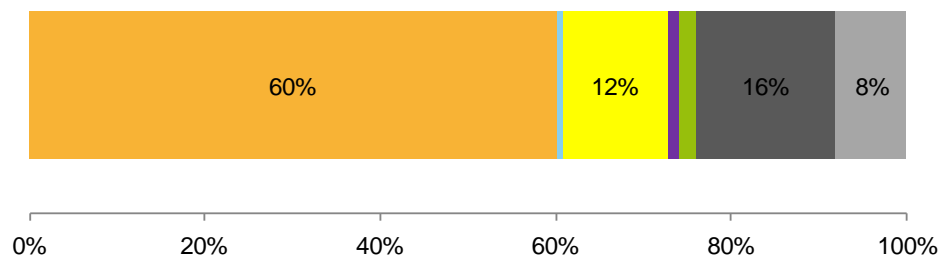
<sup>5</sup> Presented figures are round numbers

Figure 4.4: Indirect employment in 2009 in Turkey



Source: Calculations by Ernst & Young and Regioplan

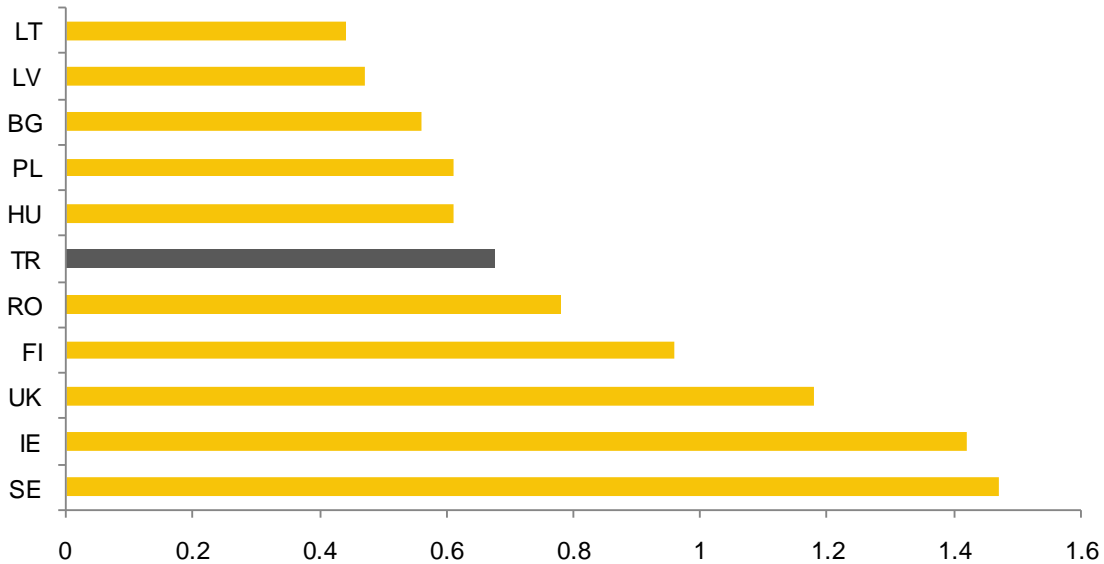
Figure 4.5: Indirect employment in 2010 in Turkey



Source: Calculations by Ernst & Young and Regioplan

Compared to the comparison countries, Turkey is an average country with regard to creating indirect jobs arising from beer-related activities. In Turkey, the production of 1000 hl of beer leads to nearly one indirect job, compared to 1.5 jobs in Sweden.

Figure 4.6: Indirect jobs per 1000 hl beer produced in 2009 by country



Sources: *The Brewers of Europe Beer Statistics 2010 edition* and *The Contribution made by Beer to the European Economy 2009*

#### 4.5 Induced employment

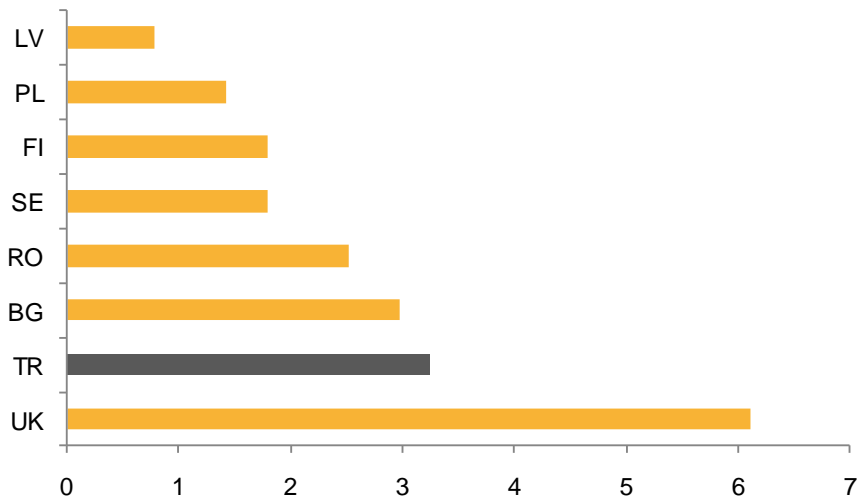
In addition to the direct and indirect impact of the brewing sector on employment, the number of jobs generated by beer sales in the on-trade and retail sectors even has a larger effect.

##### On-trade sector

In 2010, around 28,500 of the total number of jobs in the on-trade sector can be attributed to the sales of beer. The other jobs in the on-trade sector can be attributed to the sale of other products such as food, wine, spirits, coffee, and tea. In 2009, around 30,000 jobs could be attributed to the sales of beer and accordingly, the employment effect of beer in the on-trade sector decreased by 4.8%. This is due to the decreased beer consumption.

In the UK, every 1000 hl of beer that is sold on-trade leads to 6 jobs generated in the on-trade sector compared with 3 jobs in Turkey. Among the comparison countries, the lowest number of jobs in the on-trade sector is generated in Latvia. In this country, the turnover per employee is relatively high because of the high alcohol prices. See figure 4.7.

Figure 4.7: Jobs in on-trade sector per 1000 hl beer sold in 2009 by country

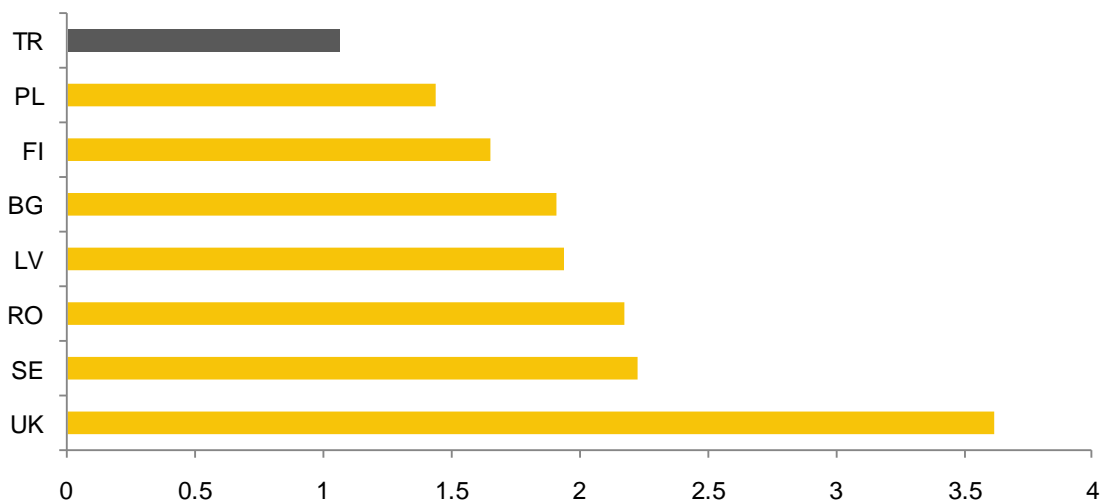


Sources: *The Brewers of Europe Beer Statistics 2010 edition* and *The Contribution made by Beer to the European Economy 2009*

### Retail sector

In 2010, in the Turkish retail sector almost 9,100 jobs can be attributed entirely to the sales of beer, which is a decrease of 6.7% compared to 2009, when 9,800 jobs could be attributed to the sales of beer. Every 1000 liters of beer sold leads to one job in the Turkish retail sector. This figure is low compared with other countries. In the United Kingdom 3.5 jobs result from every 1000 liters that are sold.

Figure 4.8: Jobs in retail per 1000 hl beer sold in 2009 by country



Sources: *The Brewers of Europe Beer Statistics 2010 edition* and *The Contribution made by Beer to the European Economy 2009*

Nevertheless, the absolute amount of employment created in the retail sector arising from beer sales is rather high in Turkey. Turkey stands at the fourth position, following large beer producing countries such as Poland, Germany and the United Kingdom in the top ten.

**Figure 4.9: Number of persons employed in the retail due to beer sales in 2009 by country**

Country	Employment in the retail sector due to beer sales
Poland	23,900
Germany	17,300
United Kingdom	12,900
Turkey	9,800
Romania	8,100
Spain	5,700
Italy	5,300
France	5,200

Sources: *The Brewers of Europe Beer Statistics 2010 edition* and *The Contribution made by Beer to the European Economy 2009*

## 5 Purchases Made By Breweries

### 5.1 Highlights

<b>Highlights of purchases made by breweries in Turkey</b>	
▶	In 2010, Turkish brewing companies spent €381 million on goods and services to be able to produce and sell their beer. In 2009, the value of their purchases was approximately € 345 million.
▶	Most of the expenses are made on agricultural products, media, marketing and communication, packaging and bottling.
▶	The majority of the purchases made by Turkish breweries are made in their own country.

Figure 5.1: Purchases made by breweries by sector (million Euros)

	(mln €) 2009	(mln €) 2010
Agricultural products	70	72
Utilities	21	20
Packaging and bottling industry	102	109
Equipment and manufacturing	18	20
Transport and storage	12	13
Media, marketing and communications	91	112
Other services	30	35
<b>Total</b>	<b>344</b>	<b>381</b>

Source: Calculations by Ernst & Young and Regioplan

## 5.2 Purchase of goods and services

In 2010, the Turkish brewing companies spent a total amount of €381 million on goods and services to be able to produce and sell their beer in and outside Turkey. In 2009, they spent €344 million on goods and services. Circa 93% of the purchases made by the brewing companies are spent inside Turkey, resulting in a significant stimulus for the Turkish economy (€324 million in 2009 and €353 million in 2010). The impact of this is rather substantial. See Annex VIII for more details about the economic impact on suppliers due to beer.

Figure 5.2: Impact on suppliers in 2009

Sectors	Total amount of purchases (mIn €) 2009	Stimulus for Turkey	
		% spent in	(mIn €) 2009
Agriculture	70	88	61
Utilities	21	100	21
Packaging and bottling industry	102	96	98
Equipment and manufacturing	18	55	10
Transport and storage	12	100	12
Media, marketing and communication	91	100	92
Other services	30	100	30
<b>Total</b>	<b>344</b>	<b>-</b>	<b>324</b>

Source: Calculations by Ernst & Young and Regioplan

Figure 5.3: Impact on suppliers in 2010

Sectors	Total amount of purchases (mIn €) 2010	Stimulus for Turkey	
		% spent in	(mIn €) 2010
Agriculture	72	81	58
Utilities	20	100	20
Packaging and bottling industry	109	96	104
Equipment and manufacturing	20	55	11
Transport and storage	13	100	13
Media, marketing and communication	112	100	112
Other services	35	100	35
<b>Total</b>	<b>381</b>	<b>-</b>	<b>353</b>

Source: Calculations by Ernst & Young and Regioplan

### 5.3 Impact on the agricultural sector

In value, the purchasing of raw materials and agricultural ingredients represents 19% of overall expenditure made by the Turkish beer producers. We estimate that in 2010, the value of the agricultural expenditures amount to €72 million, of which €58 million is spent in Turkey.

The use of agricultural products is high because beer is a natural drink, made from a (malted) cereal source (mostly barley), hops, yeast and water. Of all agricultural inputs, malting barley is the most important ingredient of beer. More than 70% of the barley intended for industrial use, is used by the beer sector.

Despite the fact that Turkey is one of the major barley producing countries in the world, there are some difficulties for Turkish farmers in providing the barley for beer. The Turkish beer sector is in need of importing high-quality barley, approximately 100.000 tons at a yearly basis.

Figure 5.4: Impact on the agricultural sector in Turkey in 2010

Agricultural product	Volume used by beer sector	Total production in Turkey
Barley	158,500 tons	6.5 million tons
Malt	112,000 tons	Unknown
Hops	600 tons	Unknown
Sugar and syrup	22,300 tons	2.1 million tons
Yeast	95 tons	212 million tons
Rice	20,000 tons	447,500 tons
Other	400 tons	Unknown
Water	34,494,400 hl	Unknown

Sources: Questionnaires; Summary of agricultural statistics, 2000-2009, TurkStat; and Euromalt



## 6 Developments

During 2008-2010 some developments have taken place in relation to the Turkish beer market that have negatively influenced the contribution of beer to the national economy in that period, and may also inhibit this contribution in the years ahead.

Based on our literature study and the answers of BMÜD, Efes and Tuborg to our questionnaires, it is possible to distinguish the most important developments for the Turkish brewing sector.

### 6.1 Autonomous developments

#### Economic developments

- ▶ The effects of the worldwide economic slowdown to the Turkish economy were not as severe as the effects it had on the EU countries. In 2009, real GDP has decreased by 4.7%, however, a strong recovery took place in 2010 and the announced real GDP growth is 8.9% in 2010.

#### Decreased production of hops

- ▶ In addition, in 2009 and 2010 the European brewing sector has been confronted with higher prices for its agricultural ingredients for beer. This was caused by the worldwide decreased production of hops due to disappointing harvests in Europe in the year(s) before, which led to a very tight world market for hops.

#### Import of barley

- ▶ The brewery sector is generally facing the problem of the quality of barley. The Turkish beer sector needs to import high-quality barley despite the fact that Turkey is one of the major barley producing areas in the world.

#### Changing consumer drinks preferences

- ▶ Consumer preferences are changing. Alcohol consumers increased the variety of alcoholic drinks they consume. Consumers tend to try different alternatives or mix drinks. There is an increasing trend towards vodka mixed with different drinks such as energy drinks and fruit juices. In Turkey the consumption of whiskey also increased in the last years. It is the fastest growing category in the alcoholic beverages industry. The main reason for this is the improvement of the whiskey distribution network within Turkey.
- ▶ In Turkey, the number of alcoholic beverage consumers in the total population decreased from 44% in 2008 to 39% in 2010.

#### Illicit wine production

- ▶ Despite the fact that the Turkish government has taken measures to eliminate illegal wine production, this is still a problem. Due to the implementation of Stamp Tax and the measures taken by the industry there has been some improvement in combating in illicit wine production. It is estimated that 20% of the wine production goes unrecorded annually, and that this production is not subject to proper invoicing and monitoring. There are now wine brands that are sold for less than €3, while the legal minimum price of a bottle of wine is €3.

## 6.2 Developments initiated by the government

### Increasing excise rate on beer

- ▶ In Turkey the excise rate on beer has been increased eight times in the last eight years. Most of the times the increase rates are higher than the inflation rates. In the last two years, the excise rate on beer has been increased three times. At the end of 2010, the excise rate on beer was almost 85% higher than in the beginning of 2009. The most recent excise tax increases made Turkey one of the highest excise taxed countries with regard to beer in the continent of Europe.
- ▶ In several occasions in the last years, the rate of increase of the excise tax on beer was higher than the increase for the other alcoholic beverages in Turkey. For example, in April 2009, there was only an increase in the excise rate on beer (+9%) and not for other alcoholic beverages. In December 2009, the excise on beer was raised by 35%, whereas, the excise on spirits increased by only 10%.

### Illegal sales prevention

- ▶ In order to prevent illegal sales, the Tobacco and Alcohol Regulatory Board (TAPDK) established a monitoring system which is also mentioned on their website. They have published a list of licensed retailer outlets for wholesalers and producers online. Inspections concerning banderol applications for all types of alcoholic beverages have become more frequent in order to prevent illegal trade (Code application is performed for beer). Illegal sales are, for example, sales by retailers who sell alcoholic beverages without a license.

### Limitation on the open drink sales by the local administrations

- ▶ The legal requirements to obtain operation licenses for on-trade and off-trade points have been made more stringent. Turkish legislation makes no distinction between operating licenses for trade points that sell products or drinks with low alcohol content and trade points that sell products or drinks with high alcohol content. License fees have also been increased by 10% between 2008 and 2010. In major city centers, the license fee for wholesalers is now €818 (1.630TL).

### Standing regulations in 2009 and 2010

- ▶ In Turkey advertisements for alcoholic drinks in cinemas or in movies are only allowed for films that are categorized by the Ministry of Tourism. Another constraint is that advertisements which are connecting food products and common values with alcoholic beverages are banned.
- ▶ Promotion of the use and sale of alcoholic drinks has been strictly forbidden since a long time on cable television and radio broadcasts. Advertising in print, in other kinds of media, on billboards and outdoor activities are subject to strict rules and regulations.
- ▶ In July 2009, a smoking ban was implemented for pubs, beer houses and restaurants. Only time can tell what the effects of this ban will mean for the beer sector. In some European countries, the turnover in the hospitality sector decreased due to decreasing visitors' numbers. In other countries, the turnover increased.
- ▶ In 2009 and 2010, new legal constraints have been introduced on the advertisement and merchandising of alcohol drinks. For example, in 2009, new restrictions have been added to Alcoholic Drinks Advertising Law. Advertising of alcoholic drinks in newspapers and magazines that target young audiences are now forbidden.

### Introducing new regulations

On 7 January 2011 a new set of regulations have been published and issued by the Tobacco and Alcohol Market Regulatory Authority (TAPDK). These new regulations affect the principles and procedures concerning the sale and display of alcoholic beverages in Turkey, and will create a much stricter market organization regarding alcoholic beverages. The main components of these new regulations are mentioned below.

- ▶ Alcoholic beverages may no longer be sold at student residences, sports clubs, all types of educational institutions, coffeehouses, coffee shops, pastry shops, and bezique and bridge halls. At the shops and restaurants of gas stations, alcoholic beverages containing more than 5% alcohol in volume may not be sold.
- ▶ In the off-trade sector retail shops, alcoholic beverages may only be sold in one defined area in a sales outlet and also advertising is not allowed outside of this particular area. It is anticipated that especially grocers having to operate in small shops will experience difficulties in selling alcoholic beverages. For larger supermarkets it is easier to comply with this new restriction, since for them it is easier distancing alcoholic beverages from other products than in small shops. Also sufficient advertisement and promotion related to alcoholic beverages is more difficult in smaller shops.
- ▶ Alcohol consumption cannot be a part of special events so the promotion and advertisement of alcohol drinks cannot be emphasized in social activities such as Valentine's Day, New Years Eve etc.
- ▶ Cover pages of newspapers and magazines cannot be used for advertising of alcohol beverages.

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## Annex I: Methodology and Scope

This study focuses on the economic impact of the brewing sector in Turkey. Although the brewing sector is international in scope and many brewing companies are organizations operating as multinationals, the analyses were carried out at country level. In this manner, the impact on the individual national economy could be measured.

The base years for the analysis are **2009** and **2010**. If data was not available for this year, data for 2008 was used.

Some of the reported outcomes are estimated on the basis of a **model** constructed by Ernst & Young and Regioplan Policy Research. For this reason these outcomes are not a direct representation and are dependent on decisions made by Ernst & Young and Regioplan Policy Research. 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, water and many types of packaging materials such as glass and aluminum. Breweries also hire engineers, marketers, communications agencies and many more services. In this study, seven supply sectors are distinguished: agriculture (raw materials); utilities; packaging and bottling industry; transport and storage; media, marketing and communication; equipment, manufacturing and other industrial activities; and other services.

The sale of beer by retail outlets and hospitality 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 labeled in this study as the brewing sector's **induced impact**.

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

Figure 6: Dimensions for measuring the economic impact

	<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 supply sectors resulting from the production and sale of beer	Total number of jobs in the hospitality and 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 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 retail sector resulting from the sale of beer and corporate and other taxes.

## Annex II: Data Sources

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

- ▶ data from the tobacco and alcohol market regulatory authority in Turkey (TAPDK);
- ▶ data obtained from a questionnaire completed by the national association representing the beer sector (BMÜD);
- ▶ data collected directly from individual beer drinks producers in Turkey through a detailed questionnaire;
- ▶ data from the Turkish Statistical Institute (Türkiye İstatistik Kurumu, TÜİK);
- ▶ data from additional (public) sources, such as the Brewers of Europe, the European Commission, and Eurostat.

### **The Tobacco and alcohol market regulatory authority**

TAPDK provided key figures concerning production, export and import data from beer in Turkey.

For more details please consult <[www.tapdk.gov.tr/alkol/istatistik/alkollu\\_icki\\_piyasa\\_arz\\_2010.htm](http://www.tapdk.gov.tr/alkol/istatistik/alkollu_icki_piyasa_arz_2010.htm)> and <[http://www.tapdk.gov.tr/alkol/istatistik/alkollu\\_icki\\_piyasa\\_arz\\_2009.htm](http://www.tapdk.gov.tr/alkol/istatistik/alkollu_icki_piyasa_arz_2009.htm)>.

### **The Beer and Malt Producers' Association of Turkey (BMÜD)**

The **national brewing association BMÜD** has been a major source of valuable data and information. The elements of the questionnaire were some key figures of the beer sector, the consumer prices in the on-trade and off-trade sectors, distribution margins of production sold on-trade and off-trade, the most important developments and threats in the beer sector, and the alcohol and excise policy, in Turkey.

### **Two beer producers in Turkey**

The largest beer producers in Turkey, Efes and Tuborg, completed the detailed questionnaire. The elements of this questionnaire were some key figures of the company, the activities of the company, their expenditures, and purchased goods.

### **Turkish Statistical Institute**

Whereas specific data on the brewing sector was collected through questionnaires completed by national brewing association and beer producers, more general economic data was obtained from the Turkish Statistical Institute. They have provided us with data since 2007 such as statistical and economic indicators including turnovers and numbers of persons employed by sector in Turkey, and agricultural statistics.

### **The Brewers of Europe**

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

### **The European Commission**

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

### **Eurostat**

Eurostat statistics provide useful data on labor costs, turnover and value-added per employee generally covering most of the countries of the comparison study. For the comparison study some data were used from *The contribution made by beer to the European Union Economy*. (Please consult for more details <[http://www.brewersofeurope.org/docs/flipping\\_books/ey\\_2011/index.htm#16/](http://www.brewersofeurope.org/docs/flipping_books/ey_2011/index.htm#16/)>).

# Annex III: Variables and Estimates

The presented results are reliable as the calculations are based on primary data from the largest beer producers in Turkey and statistics of Turkey. 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 and Regioplan Policy Research. We illustrate here how these variables have been estimated, focusing on:

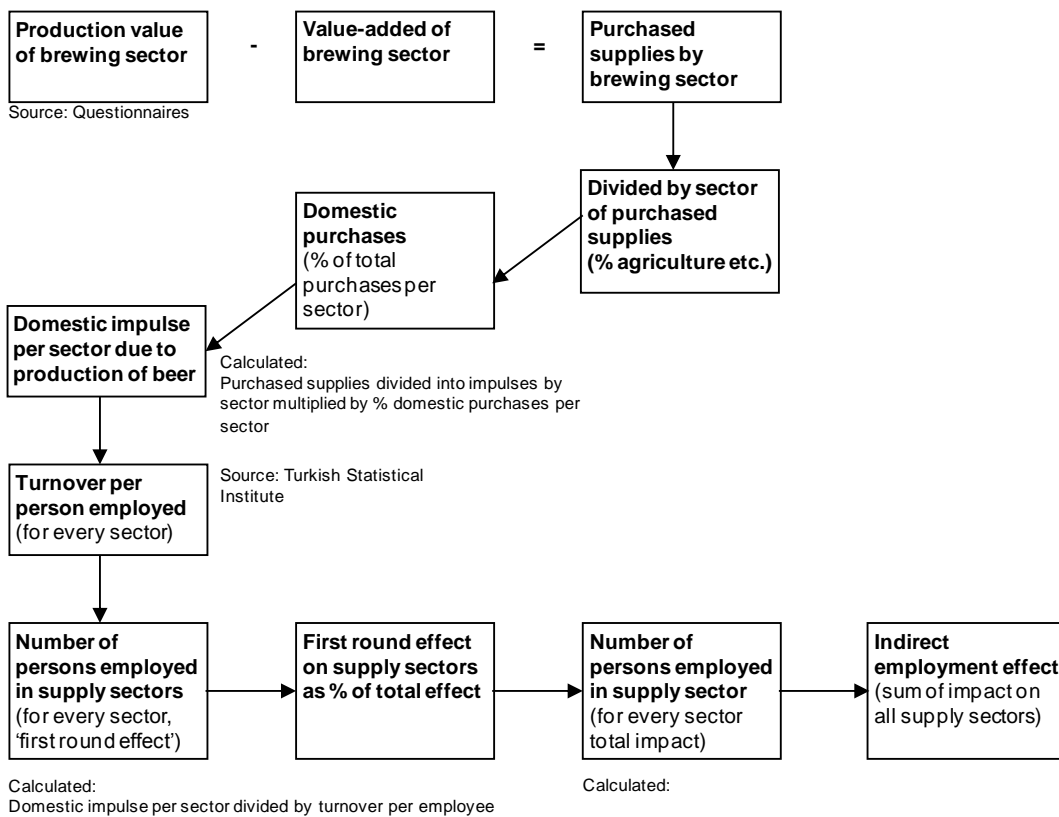
- ▶ employment effects;
- ▶ value-added due to the production and sale of beer;
- ▶ government revenues due to the production and sale of beer.

## Employment effects

The **direct employment** effect signifies the number of people employed in the brewing sector. The data on direct employment was obtained from the questionnaire for the beer producers.

The **indirect employment** effect concerns the employment generated in the 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.

Figure 7: Model for measuring employment effect



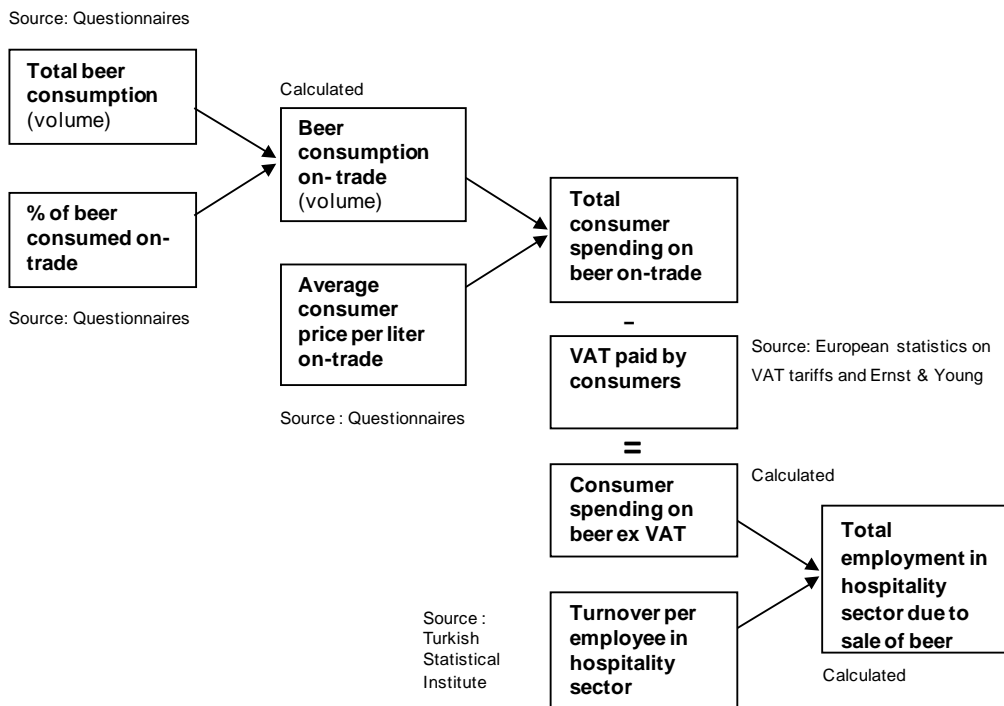
Data on turnover and value-added per employee per sector was obtained from The Turkish Statistical Institute. For sector data NACE-codes (2002 rev.1.1, classification of economic activities by the European Union or equivalents by the Turkish Statistical Institute ) have been used: agriculture (code A agriculture, forestry and fishing); packaging industry and equipment (D manufacturing); utilities (E electricity, gas, and water supply);



wholesale and retail<sup>6</sup> (G wholesale and retail trade; repair of motor vehicles and motorcycles); hospitality (H Hotels and restaurants); transport (I Transport storage, and communication); and other services (O other community, social and personal services activities, K real estate, 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:

**Figure 8: Model for measuring induced employment**



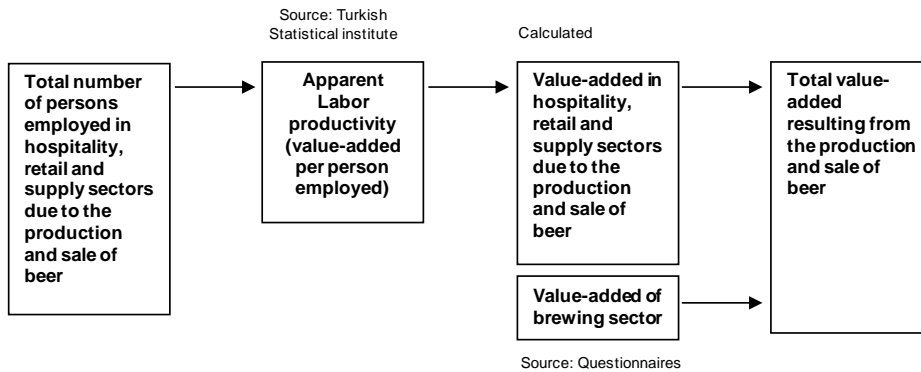
Depicted is the way the employment impact on the hospitality sector is estimated. Estimates for retail are made in a similar way. The turnover in the hospitality and retail sector is corrected for the increased beer price in both sectors instead of the general inflation rate for index. This is due to the fact that increase of the real price of beer is much higher than the average inflation rate.

#### 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 The Turkish Statistical Institute. 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 labor productivity (gross value-added per person employed) in the sector.

<sup>6</sup> The percentage of value-added 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 value-added per employee in wholesale and retail.

Figure 9: Model for measuring value-added



### Government revenues due to the production and sale of beer

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

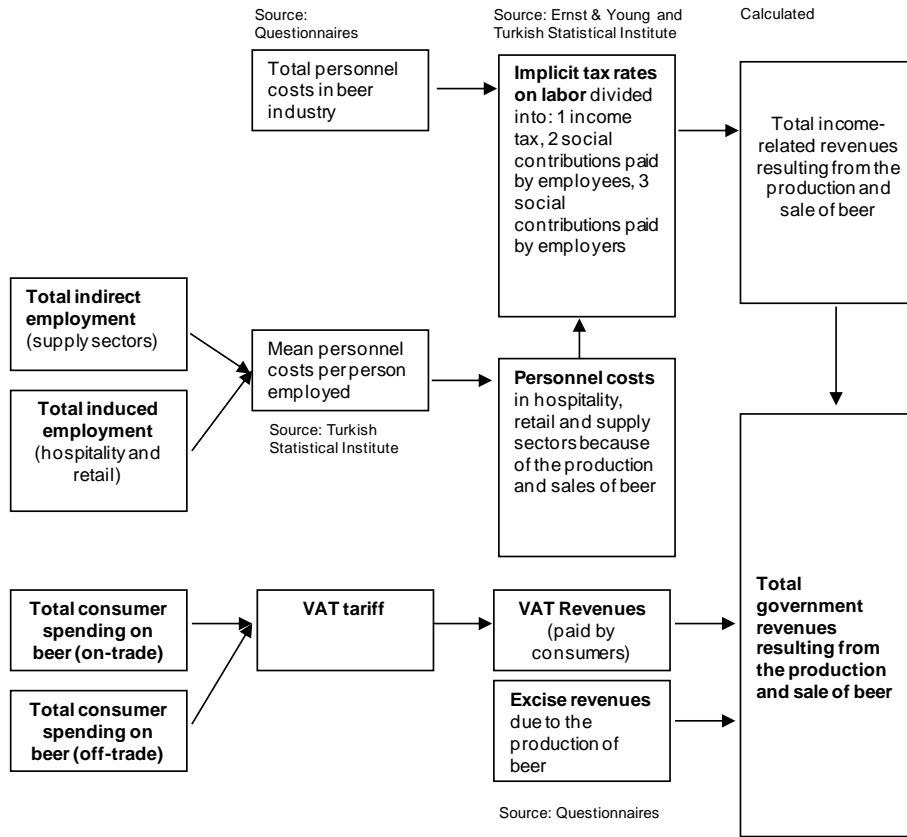
- ▶ excise revenues;
- ▶ VAT revenues;
- ▶ income-related revenues;
- ▶ corporate taxes;
- ▶ other taxes.

Data on **excise revenues** is obtained from the questionnaires, the European Commission, and 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) with the applicable VAT rate 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 from Eurostat and the Turkish Statistical Institute. Personnel costs in supply sectors, hospitality and retail were calculated by multiplying indirect and induced employment by the mean personnel costs per person employed.

Implicit tax rates on labor were obtained from statistics from the European Commission and the Turkish Statistical Institute. 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.

Figure 10: Model for measuring government revenues



## Annex IV: Exchange Rates

Since most data sources used for the study apply to the years 2009 and 2010, the mean exchange rates of these two years have been used for the majority of data calculations.

Figure 11: Exchange rates used in the report

Currency	2007	2008	2009	2010	2011
TRL/EUR	1.7865	1.9064	2.1631	1.9947	2.2152
USD/EUR	1.3705	1.4708	1.3948	1.3257	1.3898

Source: The European Central Bank, <http://www.ecb.int/stats/exchange/eurofxref/html/index.en.html>

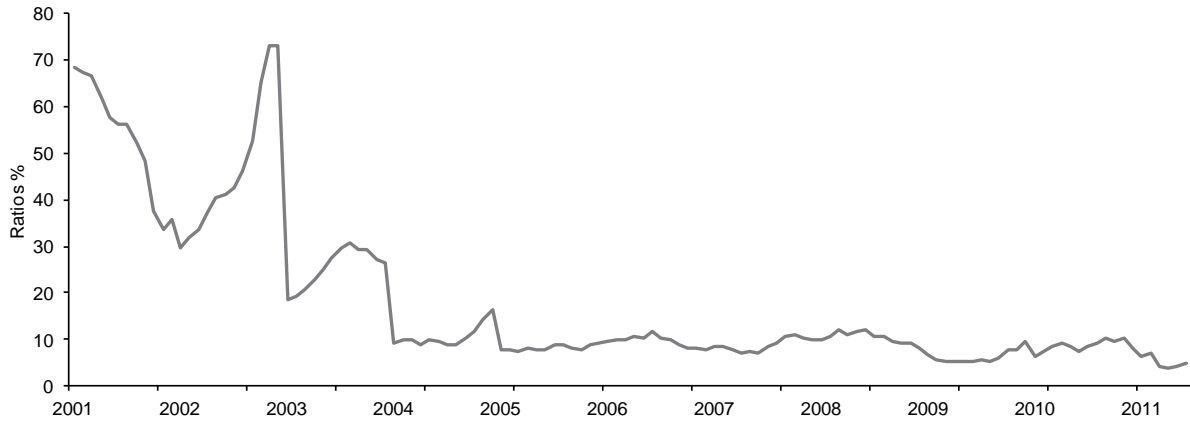
# Annex V: Inflation Rates

The turnovers by sector and value-added per employee by sector were not available for the years 2009 and 2010. The last data available was from 2007 or 2008. We used this data and indexed it with the inflation rates in Turkey. Indexing is the value adjustment to general price developments and/or inflation.

Figure 12: Inflation rates used in the report

	2008	2009	2010
Inflation rate	10.10	6.50	6.40

Source: Central Bank of Republic of Turkey



## Annex VI: Glossary

Alcohol by volume	Indication of alcoholic strength expressed as percentage included in a beverage.
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 or an establishment for the manufacture of beer.
Brewing company	A company which produces and/or sells beer.
Corporate tax companies.	<p>Corporate tax or company tax is the tax imposed on the income or capital of companies.</p> <p>For tax purposes, in Turkey companies are grouped as limited liability companies (corporations and limited companies) and personal companies (limited and ordinary partnerships). Corporate tax applies to limited liability companies. State economic enterprises and business entities owned by societies, foundations and local authorities are also subject to corporate tax. Whether a company is subject to full or limited tax liability depends on its status of residence. A company, whose statutory domicile or place of management are established in Turkey (resident company), will have full tax liability; in this case, worldwide income is taxable. If a non-resident company conducts business through a branch or a joint venture, it will have limited tax liability; i.e. fully subject to corporate tax on profits earned in Turkey on an annual basis. If there is no presence in Turkey, withholding tax will generally be charged on income earned; for example, for services provided in Turkey. However, if there is an avoidance of double taxation treaty, reduced rates of withholding tax may apply.</p> <p>The basic corporate income tax rate levied on business profits was 30% in Turkey. The 2011 tax rate applicable to corporations in Turkey is now 20%.</p>
CPI	Current inflation Turkey (CPI Turkey) – the inflation is based upon the Turkish consumer price index. The index is a measure of the average price which consumers spend on a market-based "basket" of goods and services. Inflation based upon the consumer price index (CPI) is the main inflation indicator in most countries.
Direct impact	Employment, value-added and tax revenues for governments generated directly by the brewing sector.
Environmental tax	Municipalities in Turkey are authorized to collect an environmental tax as a contribution towards the financing of certain services such as garbage collection. For the households, this tax is levied according to the water consumption of the household which is multiplied by a fixed amount that varies according to the location of the house. For the offices, this tax is levied in scheduled fixed amounts that are adjusted according to the location of the office. This tax is paid through the water bill of the property by the person who lives in or occupies the house or office in question.

EU 27	Average for the 27 European Union Member States or the 27 countries 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	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.
First round employment	The amount of jobs that are directly generated in supply sectors by purchases of the brewing sector. The employment that is generated by purchases of these supply sectors is not included.
Forward linkage	See induced employment
FTEs	Full time equivalents
GDP	Gross domestic product
GDP PPS	Gross domestic product in purchasing power standards
Government revenues	Amount of money received by the government from outside the government entity. In this study these revenues include corporate tax, excise revenues on beer, VAT on beer sold in the hospitality and retail sector and all labor-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.
Hectoliter (hl)	A metric unit of volume or capacity. One hectoliter equals 100 liters.
Implicit tax rate on labor	Ratio of taxes and social security contributions on employed labor 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 labor 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 supply sectors in terms of employment or value-added. For example: farmers selling hops or barley or the manufacturing industry producing bottles, cans, and 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.
Inflation rate	When we talk about the rate of inflation in Turkey, this refers to the rate of inflation based on the consumer price index (CPI). The Turkish CPI shows the change in prices of a standard package of goods and services which Turkish households purchase for consumption. In order to measure inflation, an assessment is made of how much the CPI has risen in percentage terms over a given period compared to the CPI in a preceding period. If prices have fallen this is called deflation or negative inflation.

Imports	The annual volume of beer bought and brought in from foreign countries.
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 et cetera.
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 from labor generated by beer production and sales are included in the figures.
Personnel cost	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).
Plato degree	A unit measuring sugar content of beer. For tax purposes it is assumed that one °P is equivalent to 0.4% alcohol. Plato degree expresses the weight of any substance in solution as a percentage of the weight of that solution, based upon sucrose dissolved in pure water. A density that measures one °P means that 1% of the weight of the measured liquid is dissolved sugar.
Production value	The amount actually produced by the company, 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 capitalized 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 accounting period for resale or consumption in the production process, excluding capital goods. It refers to externally-bought products and services.
Social security social Contributions (SSC)	Financial contributions paid by employees and their employers giving access to the security system and entitlement to certain benefits in situations of unemployment, sickness, disability or old age.
Stamp Tax	Stamp duty applies to a wide range of documents, including contracts, agreements, notes payable, capital contributions, letters of credits, letters of guarantee, financial statements and payrolls. Stamp duty is levied as a percentage of the value of the document at rates ranging from 0.165% to 0.825%. Stamp Tax is payable by the parties who sign a document. Each and every signed copy of the agreement is separately subject to Stamp Tax.



TAPDK	Turkish Regulatory Committee for Tobacco, Tobacco products and Alcoholic Beverages Market.
Tax parity	Ratio between excises levied on beer and other alcoholic drinks such as spirits and wine (per liter of pure alcohol). Equality of prices of goods. The tendency to tax some drinks more than others.
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 labor, capital, entrepreneurship).
VAT	A value added tax (VAT) is a form of consumption tax. From the perspective of the buyer, it is a tax on the purchase price. From that of the seller, it is a tax only on the "value added" to a product, material or service. The VAT is Katma Deger Vergisi (KDV) in Turkish and the rates vary between 1% and 18% but it's generally applied as 18%.

# Annex VII: Country Abbreviations

Figure 13: List of countries and abbreviations used in this report

Abbreviation	Country name
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
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
TR	Turkey
UK	United Kingdom
EU27	European Union

## Annex VIII: Impact on Suppliers

Figure 14: Impact on suppliers in 2009<sup>7</sup>

Sectors	Total	Stimulus for Turkey		Turnover per <sup>8</sup> employee	Number of employees
	(mIn €)	% spent in Turkey	(mIn €)	(in €)	
Agriculture	70	88	61	10,900	5,600
Utilities	21	100	21	406,000	50
Packaging and bottling industry	102	96	98	91,600	1,000
Equipment and manufacturing	18	55	10	91,600	100
Transport and storage	12	100	12	72,900	200
Media, marketing and communication	91	100	91	72,900	1,300
Other services	30	100	30	49,700	600
Total	345	-	323	-	8,850
First-round impact as % of total impact					65
Total indirect effect of brewing sector					13,580

Figure 15: Impact on suppliers in 2010<sup>9</sup>

Sectors	Total	Stimulus for Turkey		Turnover per <sup>10</sup> employee	Number of employees
	(mIn €)	% spent in Turkey	(mIn €) 2010	(in €)	
Agriculture	72	81	58	10,900	5,300
Utilities	20	100	20	432,400	50
Packaging and bottling industry	109	96	104	97,600	1,100
Equipment and manufacturing	20	55	11	97,600	100
Transport and storage	13	100	13	77,700	200
Media, marketing and communication	112	100	112	77,700	1,400
Other services	35	100	35	53,000	700
Total	381	-	353	-	8,850
First-round impact as % of total impact					65
Total indirect effect of brewing sector					13,570

<sup>7</sup> Presented figures are round numbers

<sup>8</sup> The original data concerning turnover are from 2008. These data were indexed for 2009 and 2010. See annex V. Source: Turkish Statistical Institute

<sup>9</sup> Presented figures are round numbers

<sup>10</sup> The original data are from 2008. These data were indexed for 2009 and 2010. See annex V.

## Annex IX: Contact Information

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### The Beer and Malt Producers' Association of Turkey

The Beer and Malt Producers' Association is founded in 2003. The association has 26 members and his main activity is to defend their interests. The purpose of the association is to deal with the problems of the members which perform the beer and malt production or marketing and to develop some suggestions of solutions for these problems , to defend the rights and benefits of the members at the sector basis , to make contribution to the establishment of the competitive environment which will ensure the developments of the sector , to inform the consumers , to observe the international developments and to convey the new information concerning the sector to its members and to perform the duties which are directed at the development of quality.

Meanwhile, the Association is an active member of the European Brewers Confederation (The Brewers of Europe) which is headquartered in Brussels. It is participates in the General Board and Secretary General meetings of this Federation. For more information: [www.biramalt.com](http://www.biramalt.com).

For more information about this study, please contact us.

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