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The economic and ecological footprint of the spirits sector in the EU, the UK, Norway and Switzerland

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Executive Summary

This study is designed to quantify the economic and ecological footprint of the European spirits sector (EU27 + UK + Norway + Switzerland = *EU+*) for the pre-COVID year 2019. The effects of the production and consumption of spirits must not be underestimated as they provide employment and value added in, e. g., distilleries and also have an impact on upstream (e. g. agriculture) and downstream industries (e. g. the catering sector). The aim of the study at hand is to estimate the effects of the spirits sector on employment, gross value added (GVA) and fiscal effects in every EU+ country by means of a multiregional input-output model. In addition, it also investigates spirits-related tourism effects and the ecological footprint of the sector. We find the following effects:

- European spirits producers' turnover in 2019 is estimated to about 26.5 billion Euros. At the same time, spirits worth 23.2 billion Euros have been sold in the EU+ (or 44.4 billion Euros including taxes). Hence, the EU+ is a net exporter of spirits beverages.
- The production and consumption of spirits in the EU+ were responsible for almost 60 billion Euros in GVA in 2019. This was about 0.4 % of the total GVA in the EU+ and would be more than twice the overall gross value added of Latvia.
- All in all, spirits support 1.2 million jobs in the EU+ which is about 0.5 % of the overall EU+ employment and almost approaches the size of the entire work force of Lithuania.
- The largest economic effects (in terms of both employment and GVA) came not from spirits production but from consumption, especially from the catering (on-premise) sector.
- Governments collected spirits-related taxes and duties of about 46.8 billion Euros which is more than a quarter of the annual EU budget. Roughly half of it came from income, profit and other taxes on general economic activity along the value-added chains. The other half came directly from VAT and excise duty imposed on spirits beverages sold in the EU+.
- The emission of about 20 million tonnes of CO_2 equivalents are related to spirits production and consumption in the EU+; this is about 0.6 % of what the EU+ emits in total and would be slightly less than the overall CO_2 eq. emissions of Lithuania. A land area more than twice the size of Luxembourg is used for agricultural production related to spirits.

It has already become obvious that COVID-19 has had a massive impact on the numbers presented in this study for the pre-COVID year 2019. The quantitative impact of the pandemic on the economic footprint of spirits will be investigated in a follow-up study.

1 Introduction

Spirits producers and exporters can be found in every country in the European Union (EU). The European Commission (EC) speaks of 44 regulated categories of spirit drinks and about 240 geographical indications. The EC further assumes that the sector attributes 12 billion Euros in exports and 22.4 billion Euros in excise duties and value added tax (VAT); about one million jobs is said to be connected directly to the spirits sector.[1] A study by Ernst & Young (2010) estimated that spirits provide for about 935,000 jobs in Europe and generate an annual gross value added of 28 billion Euros.

Hence, the economic impact of the production and consumption of spirits is considerable and distributed across all of Europe. Not only do they provide employment and value added in, e. g., distilleries, they also have an impact on up- and downstream industries. In contrast to other industries, spirits production is characterised by rather local supply chains. The aim of the study at hand is to estimate the direct, indirect and induced effects of the spirits sector on employment, gross value added and fiscal effects in every member state of the EU as well as the United Kingdom, Norway and Switzerland (in the following "EU+") by means of a multiregional input-output model. In addition, it also investigates spirits-related tourism effects and the ecological footprint of the sector.

The study is structured as follows: Section 2 will provide the descriptive basis for the rest of the study. It will provide the legal and statistical definitions of spirits and thereby frame what this study is about. It will also show comprehensive statistics concerning spirits production and consumption as well as data on tourism and environmental issues. Section 3 will then describe our methodological approach which will be a multiregional input-output model based on the OECD Inter-Country Input-Output (ICIO) tables[2] for 65 countries including the EU+ and all other relevant spirits markets; the model will be enhanced by an ecological component in order to compute the environmental effects of the spirits sector. Section 4 will present and explain the quantitative results; individual factsheets for the 30 countries under observation and for a selection of spirits categories and geographical indications will be shown in the Appendix. The final section 5 will wrap up the study.

The relevant year for the following analyses is 2019. The study will be accompanied by an update concerning the effects triggered by COVID-19. This update will be conducted in 2021 and contain 2020 data.

[1] https://ec.europa.eu/info/food-farming-fisheries/plants-and-plant-products/plant-products/spirits_en

[2] https://www.oecd.org/sti/ind/inter-country-input-output-tables.htm

2 The European spirits sector

The following section will define the subject of this study and therefore provide both legal as well as statistical definitions in subsection 2.1. The subsequent chapters will show descriptive data concerning spirits production (subsection 2.2), consumption (subsection 2.3), spirits-related tourism (subsection 2.4) and environmental data (subsection 2.5). Hence, this section shall not only serve as a motivation for the study but also shows all the relevant data and their respective sources and thereby prepares the methodological implementation.

2.1 What is a spirit?

Even though the term *spirit* incorporates a wide range of products of different flavours, colours and local or traditional peculiarities, the basic production principles of fermentation and distillation are common to all spirits and have hardly changed over the centuries. The renowned dictionary Britannica[3] defines distilled spirits as *"[…] all alcoholic beverages in which the concentration of ethyl alcohol has been increased above that of the original fermented mixture by a method called distillation."* The discovery of distillation as a means to separate the inflammable alcoholic component from beverages such as wine or beer were eponymous for terms like *firewater, brandy* or the German term *Weinbrand*.

The European Union deals with spirits in EU regulation 2019/787 which came into force in May 2021. According to Annex I, a spirit drink must comply with six requirements (in the following partly simplified and in our own words):

- **(a)** It is intended for human consumption.
- **(b)** It possesses particular organoleptic qualities.
- **(c)** It has a minimum alcoholic strength by volume of 15 % (except for certain egg liqueurs that may contain slightly less alcohol).
- **(d)** It has been produced either:
    - **(i)** directly by using, individually or in combination, any of the following methods:
        - distillation, with or without added flavourings or flavouring foodstuffs, of fermented products,
        - the maceration or similar processing of plant materials in ethyl alcohol of agricultural origin, distillates of agricultural origin or spirit drinks or a combination thereof,

[3] https://www.britannica.com/topic/distilled-spirit

        - the addition, individually or in combination, to ethyl alcohol of agricultural origin, distillates of agricultural origin or spirit drinks of any of the following:
            - certain flavourings,
            - certain colours,
            - certain other authorised ingredients,
            - sweetening products,
            - other agricultural products,
            - foodstuffs, or
    - **(ii)** by adding, individually or in combination, to it any of the following:
        - other spirit drinks,
        - ethyl alcohol of agricultural origin,
        - distillates of agricultural origin,
        - other foodstuffs;
- **(e)** It does not fall within CN codes 2203, 2204, 2205, 2206 and 2207 (i. e., it is not beer, wine, mead etc.).
- **(f)** If water, which may be distilled, demineralised, permuted or softened, has been added in its production:
    - **(i)** the quality of that water complies with Council Directive 98/83/EC (15) and Directive 2009/54/EC of the European Parliament and of the Council (16); and
    - **(ii)** the alcoholic strength of the spirit drink, after the addition of the water, still complies with the minimum alcoholic strength by volume provided for in point (c) of this Article or under the relevant category of spirit drinks as set out in Annex I.

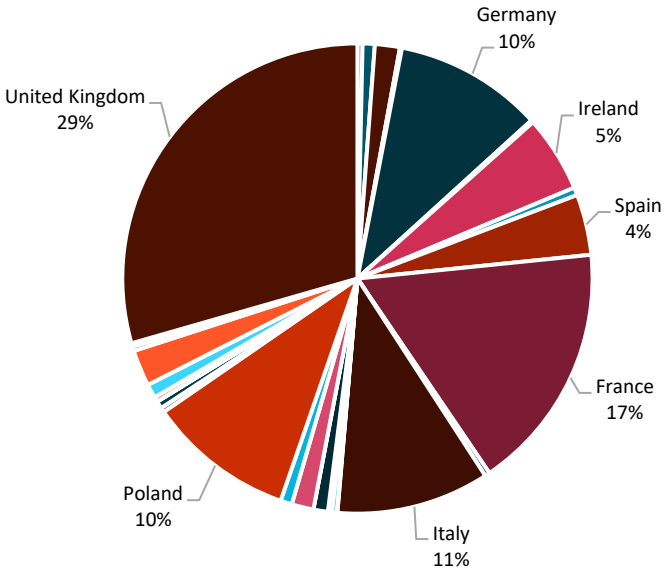
Hence, any drink that complies with these six requirements can be considered a spirit. It (a) is produced for human consumption, (b) has organoleptic properties, (c) has a minimum alcoholic strength of 15 %, (d) is produced from distillation, fermentation or similar techniques, (e) must not otherwise qualify as beer, wine, mead etc. and (f) can contain water with certain properties.

While the legal definition of spirits is important, e. g. for regulatory purposes, the way these products are captured in official statistics can differ severely. It is also important to distinguish between statistics on *products* and *producers*:

The most important classification for *producers* is NACE (Nomenclature statistique des activités économiques dans la Communauté Européenne = Statistical classification of economic activities in the European Community). Businesses classify themselves according to their main economic activity. Hence, spirits producers will be captured under code 11.01 (“Distilling, rectifying and blending of spirits”). Figure 1 shows basic

turnover[4] numbers for spirits producers in Europe[5] in 2018. The United Kingdom turns out to be by far the largest producer. More than three quarters of the entire European spirits production is concentrated in the United Kingdom, France, Germany, Italy and Poland.

Figure 1: Distribution of spirits turnovers across Europe in 2018



Source: Eurostat (2021a) - Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) [sbs_na_ind_r2].

Unfortunately, a couple of countries are missing in Eurostat as data at this level of detail can easily be unavailable, unreliable or even confidential. In order to, nonetheless, include those countries into our analysis, we conduct estimations based on available employment figures (for Croatia, Latvia and the Netherlands), on available physical production figures (e. g. in hectolitres; for Czechia and Switzerland)), or on available turnover figures from the past (for Ireland and Sweden). We estimate European spirits producers' overall turnovers in 2018 to reach almost 25.5 billion Euros. This is well in the range of what Eurostat reports.

Yet another warning about the interpretation of Figure 1 is in order: It covers all companies whose *main economic activity* is the production (i. e. distilling, rectifying and blending) of spirits. However, such companies might also produce and sell by-products that are not spirits; in theory, this share could be as high as 49 % for them to be still classified as spirits producers. Hence, not their entire turnover should automatically be attributed to spirits production. On the other hand, famous distillers who produce very

[4] We consider only turnovers from own production activities and therefore subtract turnovers with goods for resale.

[5] We will use the term "European" as a catch-all term for the EU plus UK, Norway and Switzerland; i. e. EU+.

limited amounts but attract tourists and sell merchandise products should actually be classified as tourism companies and not show up in the spirits production statistic at all. To avoid those kinds of problems, it would make sense to look at *products* classifications like CPA (Classification of Products by Activity) that capture goods and services, regardless of what NACE code their producers belong to. The relevant CPA code in our case (similar to NACE) would be 11.01 ("Distilled alcoholic beverages").

There are many more classifications, e. g. the HS (Harmonized System) or the CN (Combined Nomenclature) that was designed for European trade control and that EU regulation 2019/787 refers to. The CN classification contains spirits under code 2208 ("Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 % vol; spirits, liqueurs and other spirituous beverages"). Trade flows can also be classified according to the United Nations' SITC (Standard International Trade Classification) which would capture spirits under heading 112.4 and under the description as CN. The United Nations maintain another classification that captures consumption goods, called COICOP (Classification of Individual Consumption according to Purpose). Here, spirits can be found under 02.1.1.0 ("Spirits and liquors").

Hence, the actual matter of this study will depend crucially on the definition of spirits beverages. Comparability issues will necessarily occur if data sources must be used that look at the issue from different angles. For example, NACE production data cannot be combined with CN or SITC trade flows and COICOP consumption data.

In order to be fully consistent in terms of data and "what spirits are" throughout this study, we have decided to focus on Eurostat and enrich the official data with information by the IWSR as one of the most accomplished data sources when it comes to the alcoholic beverage market.[6] IWSR reports detailed global sales data for most countries of the world and a wide range of products. It also keeps track of taxes, on- and off-premise consumption and of volumes. The data set is appealing as it solves a number of issues that the official Eurostat statistic comes with:

- IWSR covers all countries relevant for our analysis. This is important as large spirits producers are missing in official statistics (as mentioned above). IWSR information has proven helpful to estimate reasonable turnover figures for the missing countries.
- The sales data in IWSR can be focused exclusively on spirits. Any products that spirits producers (according to NACE) might fabricate along the way do not pollute the data.

[6] The IWSR – Drinks market analysis (https://www.theiwsr.com/, IWSR = International Wines and Spirits Record)

- IWSR provides data by category – like for example whisky,[7] vodka, rum etc. – and even allows analyses of geographical indications (for example Scotch whisky or Cognac). Data of such detail is generally unavailable in official statistics. Hence, IWSR can be used to break down Eurostat data to individual categories.
- Official data always has time lags. The most current figure on spirits production in Eurostat at the time this study is conducted is from 2018. The economic and ecological footprint that this study tries to generate of the spirits sector would be three years old. Any COVID-19 impact analysis based on official data would be possible in 2022 at the earliest. IWSR data contains data almost in real time and even publishes forecasts. We will use it to extrapolate 2019 data from Eurostat 2018 turnover data.
- Production and consumption data are seldom based on the same statistical concept when using official statistics (production is often based on NACE or CPA, consumption on COICOP, trade on CN and so on). IWSR data allows a more consistent view on the matter.

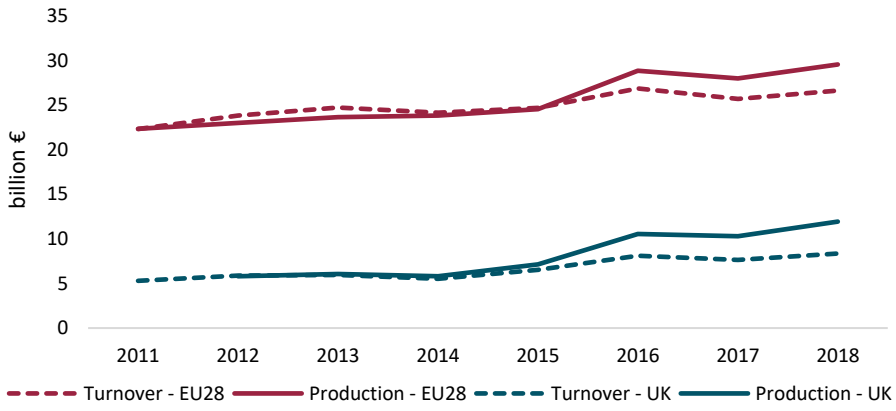
Clearly, the use of IWSR data also comes with some caveats. Especially, when it – being *sales* data in nature – is to be transformed into or combined with *production* figures:

- One of the major issues is that beverages being sold in a given year have not necessarily been produced in the country of origin in that very year. They might have in many cases, but the fact that many spirits beverages undergo maturation processes of several years (or even decades) might impose a problem: Maturation is a regular production process; hence, a beverage cannot show up in turnover or sales data while maturation is still ongoing. However, many production steps have already been applied and labour, energy, raw materials and so on have been deployed. Hence, the barrels already contain "production value" that is recorded in official production statistics but not yet in turnover or sales statistics. If a company produces roughly the same amounts over a longer period of time, this issue will be smoothed away: A part of last year's production value will be this year's turnover and so on. However, production and turnover will fall apart as soon as a company decides to massively increase its production. Production values will then exceed turnovers as considerable parts of it can not yet be sold. Figure 2 shows that production values did exceed turnovers, e. g., in the United Kingdom. This phenomenon can be observed since 2014 and has even translated into EU28 figures.

[7] As Scotch whisky clearly dominates European whisky production, we write "whisky" instead of the Irish "whiskey" throughout the report.

We solve this issue by using Eurostat's *turnover* data instead of *production values*. We subtract turnovers with goods for resale and yield a measure of sold own production. This variable should be most compatible with IWSR sales. We will in the following refer to it as *production (or producers') turnovers*.

Figure 2: Production value and turnover



Source: Eurostat (2021a) - Annual detailed enterprise statistics for industry (NACERev.2, B-E) [sbs_na_ind_r2].

- When a beverage is sold, its price includes not only production costs but also sales and transport margins as well as taxes. IWSR provides sales figures excluding taxes but the margins still remain. This is challenging when production figures are to be estimated in section 2.2. In turn, the fact that IWSR figures contain margins is not a problem but even favourable for the analysis of spirits consumption in section 2.3, as sales margins are – by definition – the sellers' production value.
- IWSR will not consider a product to be, e. g., *Austrian* if a brand is produced in many countries, i. e. is an *international* brand. This can be the case when companies produce spirits without particular geographical characteristics and distribute production over several production sites. If we would only consider *Austrian* brands, we would underestimate the actual production in the country. However, IWSR allows to distinguish between *local* and *imported* production so that the amount of spirits produced locally (i. e., by a domestic brand or by an international brand producing in the country) can be determined. Also, we will allign the data to Eurostat figures (see section 2.2), so that no production will get lost in the data.

The individual sections on spirits production and consumption will go into more detail about how the IWSR data is used and how we adjust it to Eurostat data in order to make up for the issues mentioned above. Both official statistics as well as business news and data will be used to provide the descriptive background and for plausibility checks.

2.2 Spirits production in Europe

Distilleries and other spirits production units are scattered all across Europe. For the year 2018, Eurostat (2021a) reports 7,411 enterprises in the EU that are classified under NACE Code 11.01 ("Distilling, rectifying and blending of spirits"). For the most part, the number of production units follows population figures; hence, large countries like France, Germany or the United Kingdom are home to several hundred spirits producers while Lithuania, Cyprus or Luxembourg have only a few. However, the size structure of enterprises differs a lot. Hungary, for example, has a rather high number (562) of small enterprises with only three employees on average, while Lithuania has only three major producers with an average of more than 200 employees.

Table 1: Employees and enterprises distilling, rectifying and blending spirits (2018)

Country	Enterprises	Employees
European Union 28 – Total	7,411	62,134
Czechia	-	-
Ireland	-	-
Malta	-	-
Switzerland	-	-
France	753	8,513
Germany	671	5,560
United Kingdom	577	14,347
Hungary	562	2,057
Italy	543	5,220
Portugal	399	807
Bulgaria	384	2,497
Greece	329	974
Spain	305	3,434
Austria	163	984
Poland	129	4,870
Slovakia	119	880
Netherlands	111	681
Belgium	110	340
Slovenia	95	104
Romania	91	1,643
Croatia	66	755
Sweden	57	-
Denmark	37	167
Latvia	24	751
Norway	24	202
Finland	22	686
Estonia	17	348
Luxembourg	15	14
Cyprus	12	63
Lithuania	3	636

Source: Eurostat (2021a) - Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) [sbs_na_ind_r2].

The size structure – and what is actually called a spirits enterprise – depends crucially on national regulations. Obviously, countries with a history of production monopolies tend to have a larger market concentration then countries that traditionally impose low burdens concerning spirits production. Also, spirits production can be more of a private vocation than an actual economic activity: In Austria, for example, no less than 62,499 distilling pots are registered; 435 companies are officially permitted to produce and sell spirits.[8] But only 163 of them seem to actually see spirits production as their main economic activity, according to Table 1.

It can be argued that size structure matters. As larger enterprises are usually more likely to export and to purchase production inputs from abroad, the domestic economic effects of spirits production might not be linear in the number of employees. Countries with small producers might experience higher domestic effects as those producers purchase locally, while those with few but large producers might have smaller domestic effects as they are more international.

While those numbers and analyses shed some light on where spirits production is taking place in Europe, they are less helpful in determining actual production figures (for the reasons outline above in section 2.2): They do not report data for some of the major producers (including Ireland), the latest data point is from 2018, and they do not provide information on individual spirits categories.

Therefore, we will at this point bring the already introduced IWSR data into play. We take the reported sales volumes by country in 2018 and estimate production volumes as *local* consumption in country A (*place of origin* = *place of sales* = *country A*) plus the global total of *imported* consumption with *place of origin* = *country A*. In order to turn production *volumes* into *production turnovers*, we need to take prices into account. The correct price for this purpose would include production costs (raw materials, energy, labour etc.) and the producers' profit margin but exclude transport and sales margins as well as taxes. This particular price, however, is unknown and can hardly be derived from official statistics. In the following, we will think of it as the hypothetical factor that is needed in order to align national *volume* information from IWSR and the country-by-country *turnover* information from Eurostat as shown in Figure 1. Hence, we keep each country's production structure (in terms of categories) constant and adjust it in such a way that the resulting production turnovers match the available Eurostat numbers. In doing so, we yield the prices endogenously and by that automatically take care of the fact that different categories have different production costs (e. g., Cognac is much more expensive to produce than, e. g., vodka). The implicit prices per litre can then be cross-checked using Eurostat (2021b) export data as they – unlike production data – are provided at a more detailed goods classification and allow to distinguish broad spirits

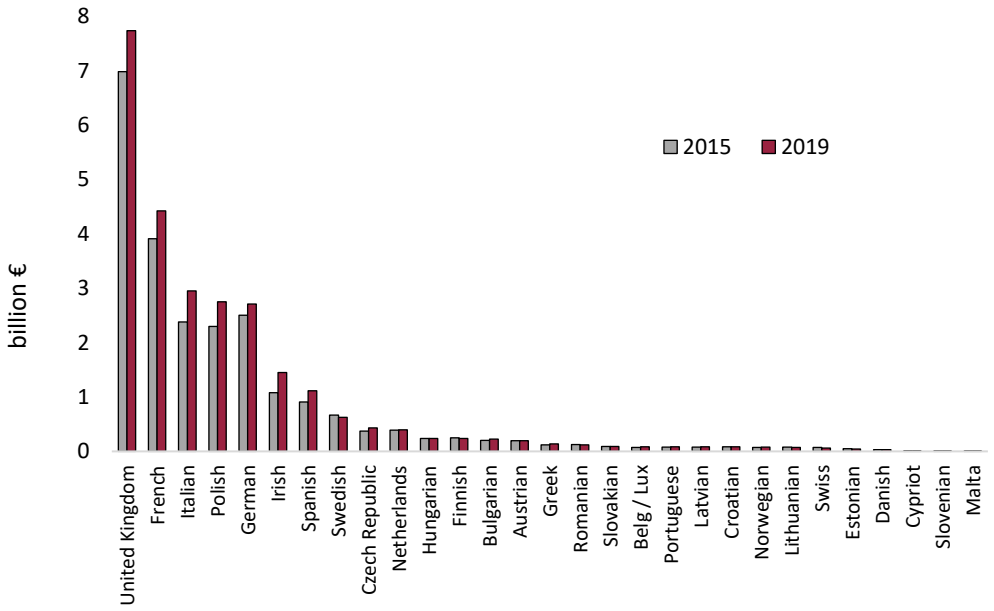
[8] This figure was reported to us by the Austrian Federal Ministry of Finance.

categories. They also include both values and volumes which allows a rough production price estimation. According to this export data, e. g., Cognac exported to partners outside the EU28 is two to three times more costly per unit than Scotch whisky; European vodka, on the other hand, is among the more inexpensive categories. As this price ranking reflects well what we find in our modelling exercise, we are confident that the reconfiguration of IWSR sales data into Eurostat turnover data yields meaningful results.

We use the resulting 2018 price structure (as this is the most current year available in Eurostat (2021a)), apply it to 2018 IWSR volumes and adjust the results in such a way that the Eurostat turnovers are achieved. The same math is then applied to 2019 IWSR volumes in order to extrapolate 2019 turnovers.

The estimated production turnovers for 2019 are presented by country in Figure 3. It turns out that our figures resemble the initial Eurostat values in Figure 1 quite well both in terms of overall turnover and also in terms of ranking. The estimated overall 2019 European spirits production turnover amounts to 26.5 billion Euros and has increased considerably since 2015 (by about 13 %). The United Kingdom still accounts for the lion's share; France, Italy, Germany, Poland and Spain report considerable amounts as well. We also show the countries that were missing in Eurostat (2021a): Ireland now takes the sixth rank; also Sweden, the Czech Republic, the Netherlands and some countries with smaller production numbers have been added to the figure according to the rationales outlined above.

Figure 3: Spirits production turnovers (in 2019)



Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a); excluding taxes.

The modelling approach in this section has accomplished three major goals: (1) We have now estimated production turnovers for 2019 (rather than for 2018). (2) We were able to close data gaps for important countries. And (3) by combining IWSR and Eurostat, we can now further disentangle the overall production turnover of 26.5 billion Euros into individual categories.

Table 2 shows the estimated production turnovers by category and – for the sake of completeness – the respective volumes. The latter depict how many litres of spirits originating from one of the EU+ countries have been sold both domestically and worldwide. Note, that those figures can only under critical assumptions (no stock changes, no re-exports etc.) be roughly interpreted as production volumes, but it is still *sales* data in nature. Volumes will not enter our input-output analysis (only monetary values will).

Table 2: Absolute volumes and production turnovers

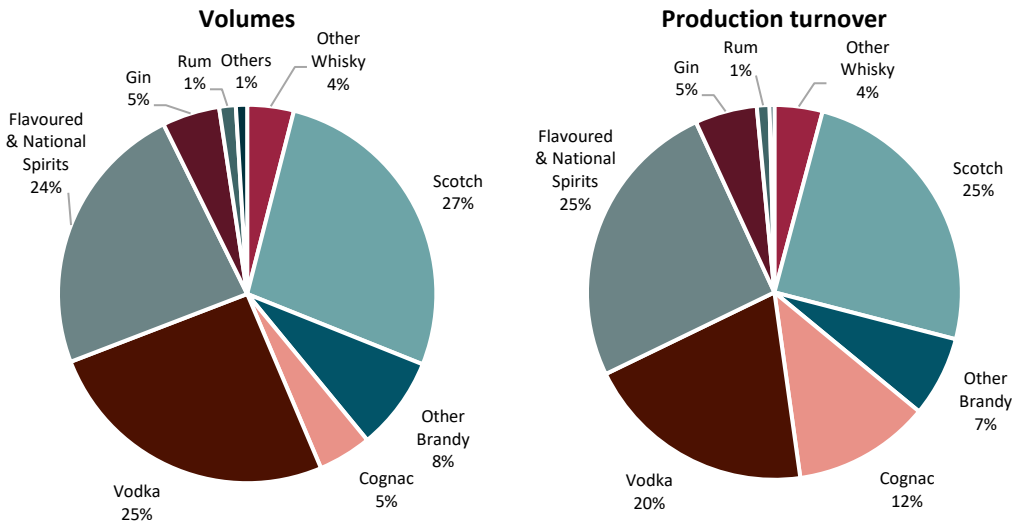
Category	Volumes (in million hectolitres)	Production turnovers (in billion Euros)
Flavoured & National Spirits	7.61	6.70
Scotch Whisky	8.75	6.58
Vodka	8.25	5.30
Cognac	1.48	3.13
Other Brandy	2.58	1.84
Gin	1.59	1.42
Other Whisky	1.29	1.10
Rum	0.46	0.29
Others	0.31	0.11
TOTAL	**32.31**	**26.46**

Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a).

Figure 4 displays how production turnovers and volumes are composed by categories. The two pie charts show that there are notable price differences between categories: The left panel shows the composition in terms of volumes; Cognac, e. g., is produced in rather small quantities (5 %). In terms of production turnover, however (right panel), it accounts for no less than 12 %. The situation for vodka is the opposite; it is produced in large volumes but is of lower value reflecting the simpler production process. The largest category in both value and volume is whisky. Almost a third of European spirits production turnover is made with whisky. Most of it is Scotch whisky, about 12 % of it is Irish whiskey; all other countries in Europe produce only marginal amounts. Brandy delivers considerable contributions to overall production turnovers but is produced only in a handful of countries and on small scales. Vodka and the wide range of products covered under “Flavoured & National Spirits” that include all kinds of liqueurs and local specialties like, e. g. Korn or Aquavit, are produced large-scale in many countries and make up for half the production volume but are sold at lower prices and therefore have

a smaller share in turnovers. Gin and rum account for small shares in both respects. Gin, however, is the fastest growing category; production turnovers have grown by more than 90 % between 2015 and 2019; most of it is produced in the United Kingdom. Rum has become more popular for consumers in recent years (see section 2.3) but is mostly produced abroad; usually where sugar cane can be cultivated.

Figure 4: Spirits production by categories (in 2019)



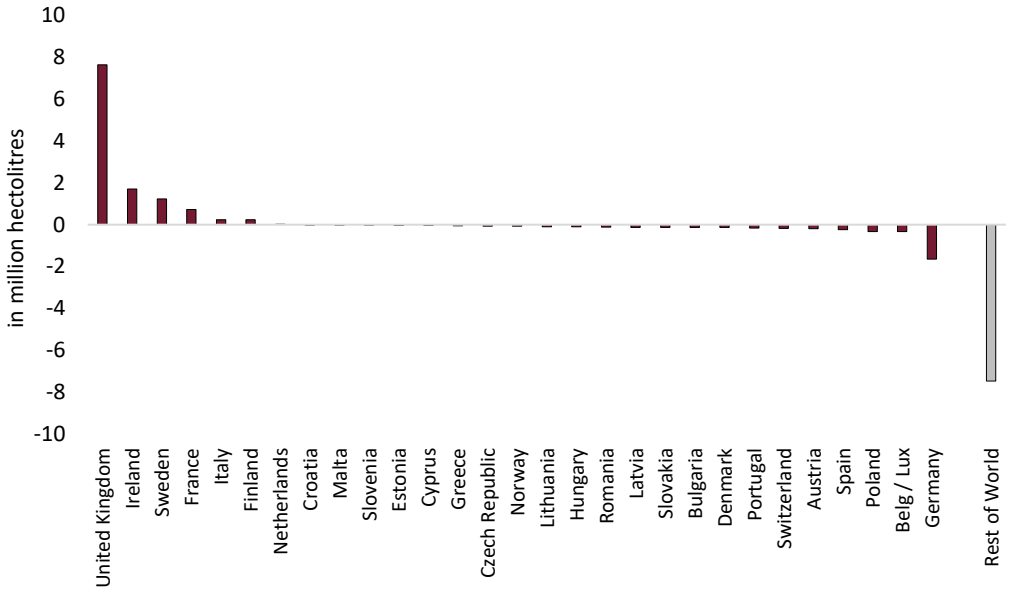
Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a).

Spirits are heavily traded among countries. Due to individual tastes and preferences, a country can be a large exporter of a particular category but at the same time import large quantities of another. We can observe this phenomenon using IWSR consumption data and compare the amounts sold *in* a country to the ones that come *from* that particular country and are sold all over the world. If the former is larger than the latter, the country will be a net importer; if domestic consumption in a country is smaller than worldwide consumption of products from that country, it will be a net exporter.

All in all, only six countries in the EU+ can be considered net exporters of spirits; see Figure 5.[9]

[9] Note that the figure only shows differences between production and consumption. The figure does not report actual trade flows. If a country produces category A but its population prefers category B, it could be a large exporter and a large importer at the same time.

Figure 5: Quantity of sold spirits <u>from country …</u> minus quantity <u>sold in country …</u>



Source: Own calculations on the basis of IWSR (2021).

The United Kingdom and Ireland produce mainly whisk(e)y and gin but also considerable amounts of vodka and flavoured & national spirits. France and Italy are strong in brandy production; Finland and Sweden are mainly invested in vodka production. All other countries consume more at home than what is sold in own products all over the world. Especially Germany, having a large population but no iconic spirits product of its own, imports large quantities. The balance of the rest of the world with the EU+ is negative as well; meaning that the EU+ produces more than it consumes (hence, is a net exporter to the rest of the world) and could hypothetically satisfy domestic demand if there were no preferences for American whisky, Caribbean rum, Russian vodka etc.

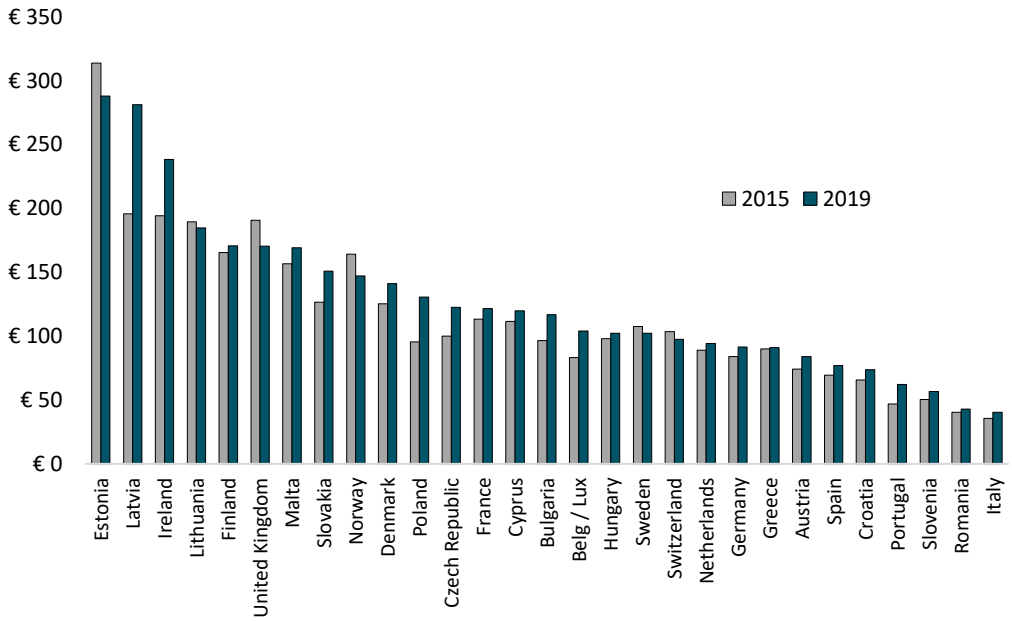
The six broad categories (whisky, brandy, vodka, flavoured & national spirits, gin and rum) as well as the two geographical indications (Scotch whisky and Cognac) that are of particular interest of this study will be analysed in more detail in the respective subchapters in Appendix A. For the purpose of the main study, however, it is sufficient to state that spirits worth 26.5 billion Euros have been produced in the countries under observation in 2019. Also, the composition by country will be needed in order to find who benefits the most from spirits production. The methodology chapter in section 3 will outline how this information is used to compute the economic and ecological effects of spirits production.

2.3 Spirits *consumption* in Europe

While spirits *production* turnovers had to be constructed under certain assumptions in the last section, data on the *consumption* of spirits are much easier to come by as they are readily available in the IWSR database.[10] The overall sales value in the EU+ amounted to 44.4 billion Euros (including taxes). As taxes do play a crucial role in the spirits sector, it might be more interesting to look at sales values *excluding* tax: They add up to about 23.2 billion Euros. This number can roughly be compared to the production turnovers of about 26.5 billion Euros from section 2.2. Hence, EU+ countries indeed produce more than they consume; both in terms of values and volumes as we have already shown at the end of the last section.

As more spirits products will be sold in larger countries, it makes sense to look at consumption in per-capita terms (only adults are considered)[11] rather than in absolute numbers. Figure 6 shows this information by EU+ country. We find that spirits sales vary significantly across countries. While adults in Estonia and Latvia spend close to 300 Euros per year on spirits beverages (which buys them about 13-14 litres of spirits per year), they spend less than 50 Euros per year in Italy (2.5 litres) or Romania (6.2 litres).

Figure 6: Per-capita consumption (= sales) of spirits beverages (in 2019)



Source: IWSR (2021); including taxes.

[10] "Consumption" refers here to sales but not to the actual physical consumption of spirits beverages.

[11] IWSR reports consumption per adult according to the respective legal drinking age in a country. This is to make sure that comparisons between countries are valid.

While those figures certainly reflect differences in consumer behaviour, they cannot be interpreted without further information about prices, tax rates, volumes, on-/off-premise shares and nationally preferred spirits categories. Countries should generally report higher per-capita consumption values that (1) have a taste for more expensive categories and/or (2) impose higher tax rates, (3) consume more spirits than other countries and (4) consume more on-premise as this should come with higher prices. The effects 1-4 will be analysed in the following for the countries under observation (even though the effects might overlap one another).

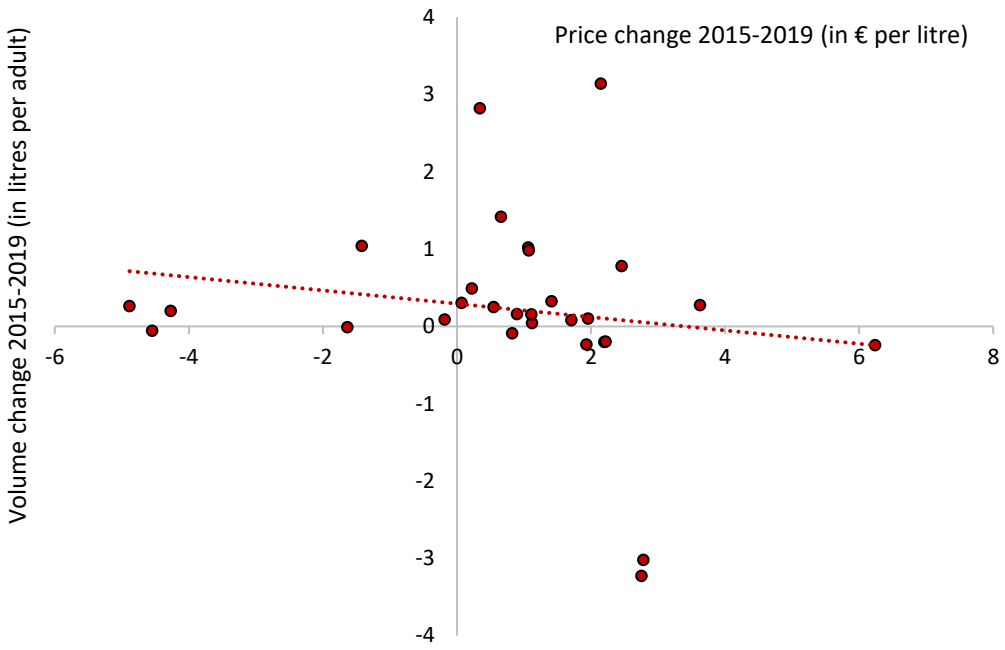
2.3.1 Prices

Countries vary in terms of per-capita consumption as consumers tend to prefer different categories that – in turn – differ in prices. In 2019, an average litre of Cognac in the EU+, for example, cost about 47 Euros according to IWSR data; one litre of vodka was only 14 Euros (both including taxes). The same category, however, might also be offered at different prices according to a country's individual income level or due to logistics and taxes. Staying with the Cognac example: One litre was only 35 Euros in France as its only country of origin, but went up to 75 Euros in Finland or Estonia.

Prices, in turn, will determine consumption. This nexus is presented in Figure 7. Generally speaking, price increases over the period between 2015 and 2019 went hand in hand with reduced spending on spirits. An increase in price of 1 Euro per litre can be associated with an average decrease of about 9 centilitres per capita in annual sales. Prices increased in most European countries (often due to increases in excise duties alone). The highest price upswing took place in Belgium/Luxembourg where a litre of spirits in 2019 cost an extra 6.24 Euros (+33 %) compared to 2015. Only a few countries exhibited decreasing prices (e. g. the United Kingdom, Sweden and Norway).[12] It is important to note, however, that such developments are more likely to result from changes in preferences than from products getting actually cheaper. Consumers in the three countries mentioned have reduced their average per-capita expenses for rather pricey categories like whisky and brandy and now – following the general trend in Europe – consume more gin which is slightly cheaper per unit and which – curiously – has indeed become less expensive in those countries in recent years.

[12] Nonetheless, Norway easily stays the most expensive country in the EU+: An average litre of spirits cost 48 Euros in 2019 (including taxes); the average in the EU+ was only about 18 Euros.

Figure 7: Price and volume changes (2015-2019 in %)

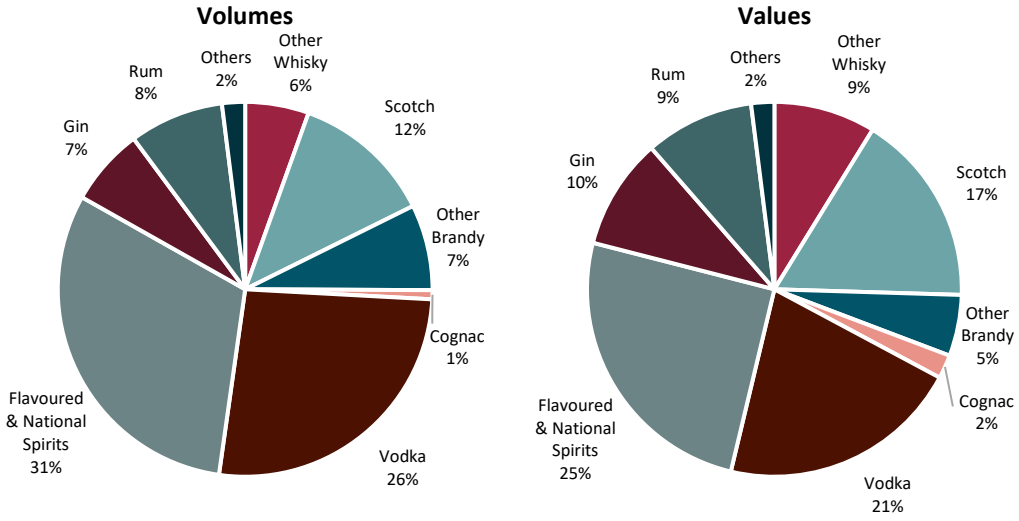


Source: IWSR (2021).

2.3.2 Categories

The overall consumption pattern in the EU+ is shown in Figure 8. We find that whisky and brandy – two of the largest categories in Europe in terms of production figures (see Figure 4) – are much smaller in terms of consumption. Especially Scotch whisky and Cognac are produced mostly for extra-EU exports. On the other hand, we now see rum contributing a considerable share to European sales; almost all of it is imported. About every second spirits drink sold in the EU+ is vodka or some flavoured/national spirit.

Figure 8: Spirits consumption by categories (in 2019)

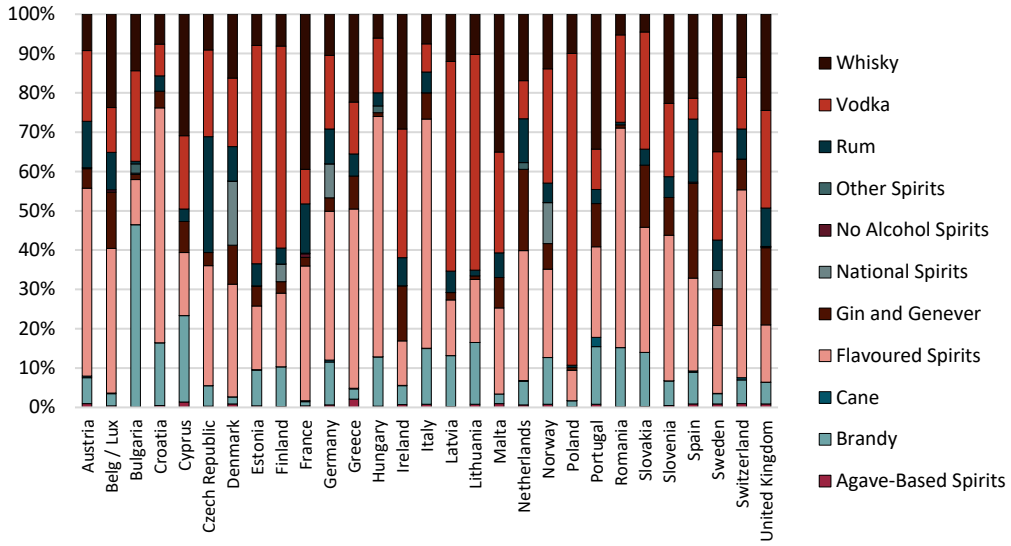


Source: Own calculations on the basis of IWSR (2021).

National consumer preferences are often a result of local customs, traditions as well as climate and soil conditions. While, for example, brandy can only be produced in warm and sunny regions, vodka is much less demanding as it can be produced from corn or potatoes whose production is possible even in northern Europe. Hence, it seems straigthforward and is perfectly in line with economic expectations that spirits production in Scandinavia is very much focused on vodka and liquors based on rather undemanding crops, while countries in southern Europe make use of their comparative advantages and produce spirits based on grapes or anise.

It is not surprising that consumption volumes mirror local production opportunities. This is what is shown in Figure 9: While only one out of five bottles of spirits sold in Poland does not contain vodka, only very little vodka is sold in Italy, Spain or Croatia where consumers prefer brandies or flavoured spirits, like Grappa. Some countries are very much focused on their respective local specialties (e. g., vodka in Poland or Rakia in Bulgaria); others prefer imported categories (e. g., the French are by far the largest whisky consumers in the EU+; whisky accounts for 40 % of spirits consumption in France and is imported almost entirely).

Figure 9: Consumption mix by country (volumes, 2019)



Source: IWSR (2021).

2.3.3 Taxes

Spirits prices in most countries have the highest tax content among all alcoholic beverages. While we had to deduct taxes in section 2.2 in order to yield production turnovers, we now want them included when considering consumption figures as costumers will have to pay them. As tax rates differ severely across countries, they do have a considerable impact on prices and, in turn, on per-capita consumption values. Therefore, we have to identify the shares that go to tax authorities and those that account for production costs, sales and transport margins and so on.

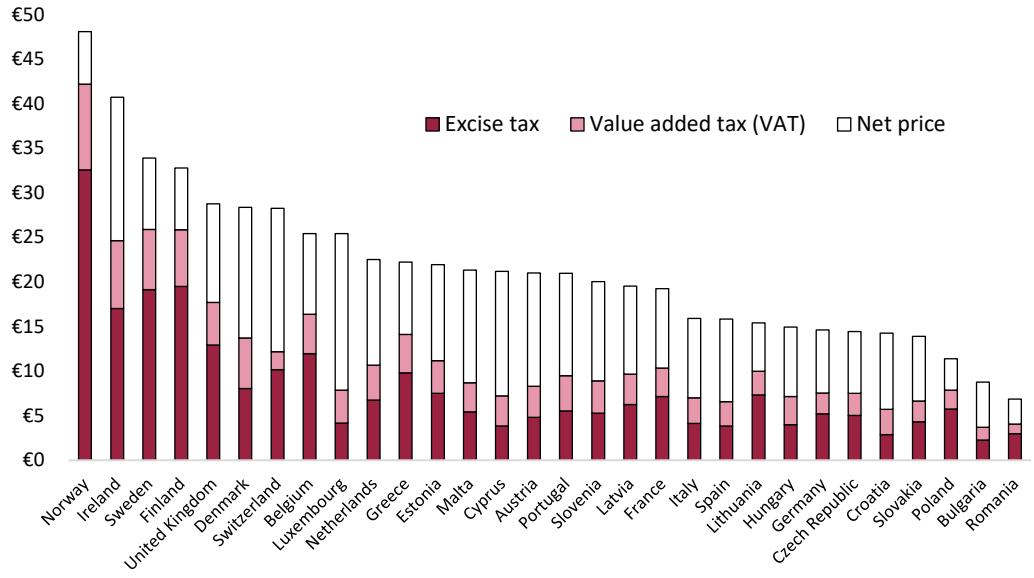
Basically, spirits are subject to two kinds of taxation instruments: First, countries impose excise taxes per hectolitre of pure alcohol (HLPA) that vary in Europe between less than 800 Euros (in Croatia or Romania) and more than 8,000 Euros in Norway. Hence, excise tax is a considerable if not the largest component of spirits prices in many countries.[13] After excise tax has been added, the products are subject to the second taxation instrument which is the ordinary value-added tax (VAT) that applies to most products. Hence, excise taxes increase the VAT base.

If we take gross prices per litre as published by IWSR and decompose them roughly into VAT, excise tax and net price, we would yield something like Figure 10 or Figure 11. Obviously, taxes are by far the largest spirits price component in many countries. In 14

[13] Excise revenues are published by European Commission, DG Taxation and Customs Union (2020a): https://ec.europa.eu/taxation_customs/business/excise-duties-alcohol-tobacco-energy/excise-duties-alcohol_en.

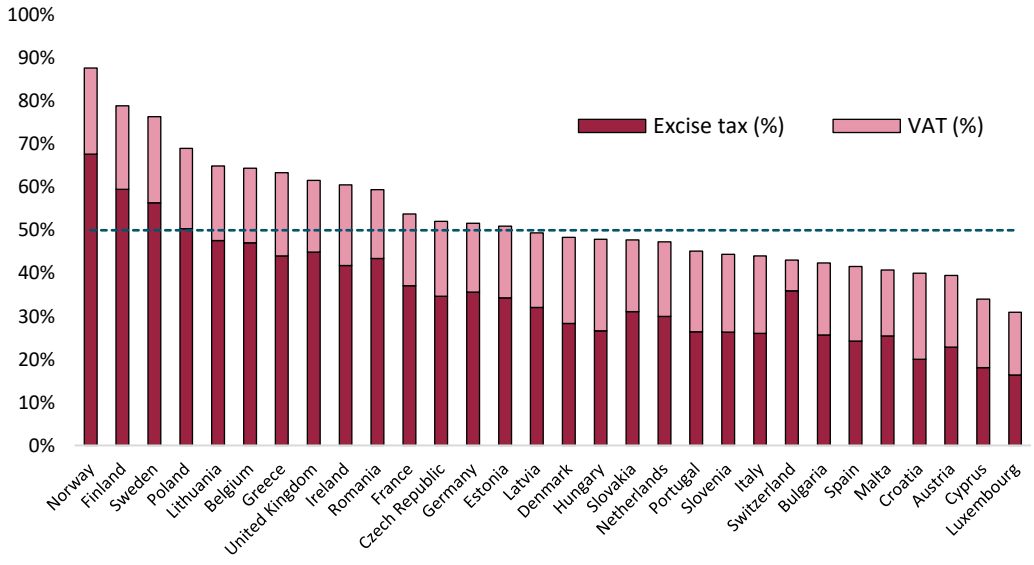
EU+ countries, the share of excise tax and VAT in off-premise gross prices for one litre of spirits is more than 50 %.

Figure 10: Price decomposition (for 1 litre of spirits (off-premise), 40% vol.)



Source: Own calculations on the basis of IWSR (2021), EUROPEAN COMMISSION, DG Taxation and Customs Union (2020a) and Spirits Europe. Exceptions might apply in some countries. Identical gross prices assumed for Belgium and Luxembourg.

Figure 11: Shares of VAT and excise tax (for 1 litre of spirits (off-premise), 40% vol.)

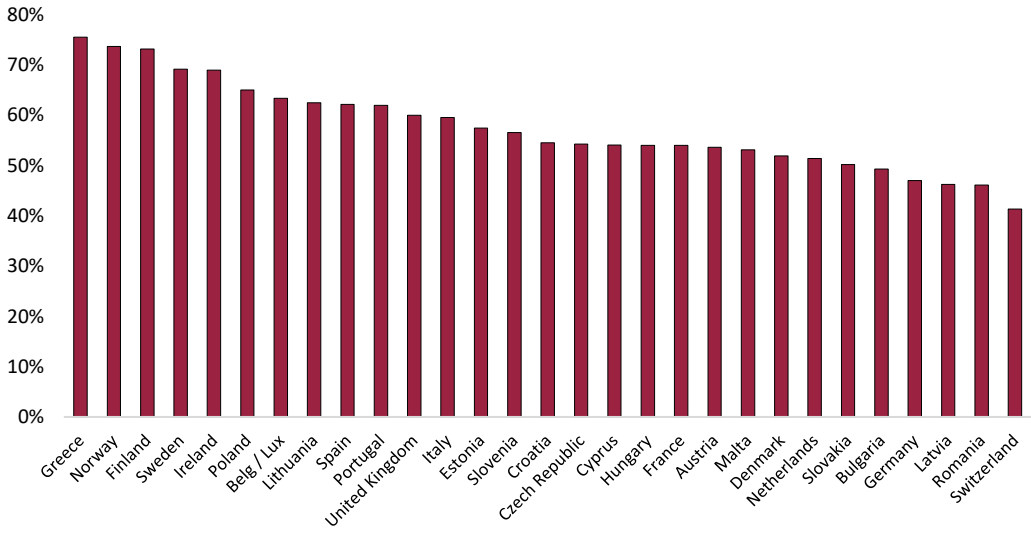


Source: Own calculations on the basis of IWSR (2021), EUROPEAN COMMISSION, DG Taxation and Customs Union (2020a) and Spirits Europe. Exceptions might apply in some countries. Identical gross prices assumed for Belgium and Luxembourg.

An exercise like this, however, would have to consider that on-premise prices are higher than off-premise prices. Hence, the actually realized average gross prices per litre would

be higher, especially in those countries in which on-premise consumption is popular (see next subsection). As a consequence, the VAT share would rise and the excise share would fall, as the latter is a fixed amount per unit of pure alcohol that does not change regardless whether a drink is consumed in a bar or at home. If we build on IWSR net prices,[14] and then take into account that on-premise consumption increases prices and VAT (but not excise), we estimate the combined amount of VAT and excise duty revenue in 2019 to about 25.4 billion Euros. Figure 12 shows again how much of spirits prices would be VAT and excise duty. The numbers vary from below 50 % (as in Switzerland or Germany) and reach up to over 70 % (as in Finland, Greece and Norway). These differences are mostly driven by differences in excise duties per HLPA; the VAT rates do not differ that much.

Figure 12: Proportions of spirits prices that are VAT and excise duties



Source: Own calculations on the basis of IWSR (2021).

2.3.4 On-premise vs. off-premise consumption

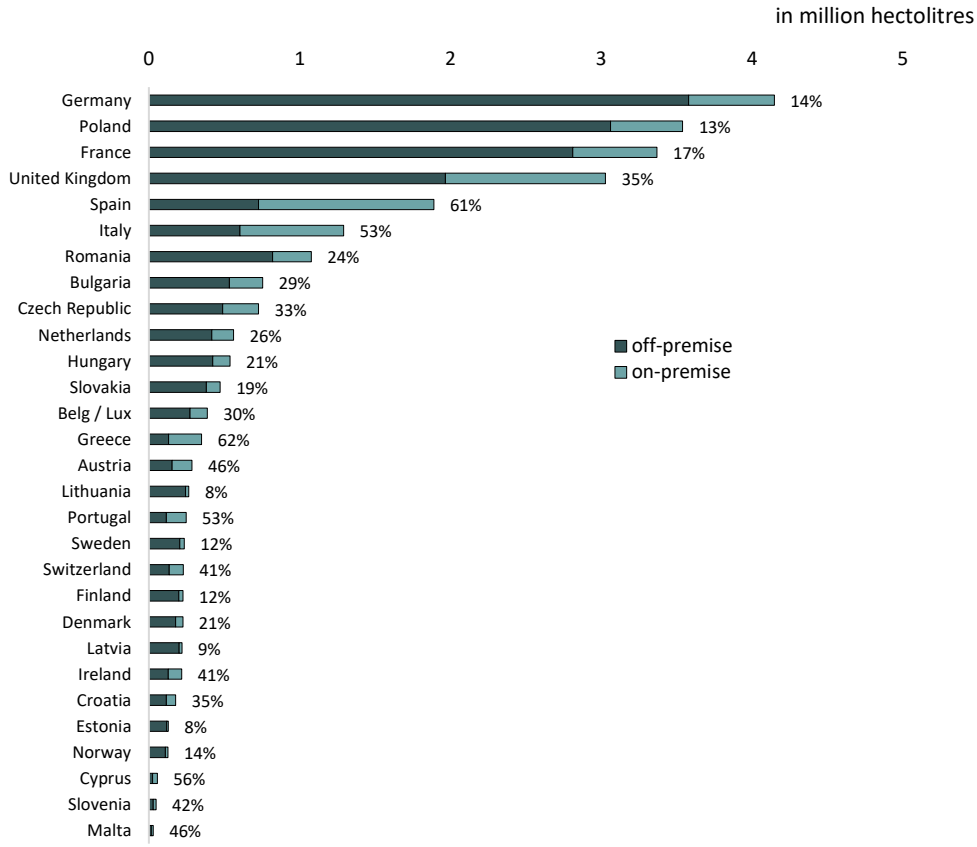
The distribution of on-/off-premise sales is shown in Figure 13.[15] To some extent, it mirrors national habits (or at least clichés about national habits). On-premise consumption (e. g. in bars, clubs, restaurants etc.) is very common and accounts for more than half of overall consumption in southern countries, such as in Spain, Italy, Greece, Portugal or Cyprus. Towards the north of Europe, however, off-premise

[14] We follow IWSR net prices and do not apply our own decomposition here. We only make a small change to the Norway figures. In order to yield consistent estimates, we assume tax rates to be constant there since 2017 (which they almost were).

[15] Figure 13 is sorted by consumption volumes; Figure 14 sorts EU+ countries by their on-premise shares.

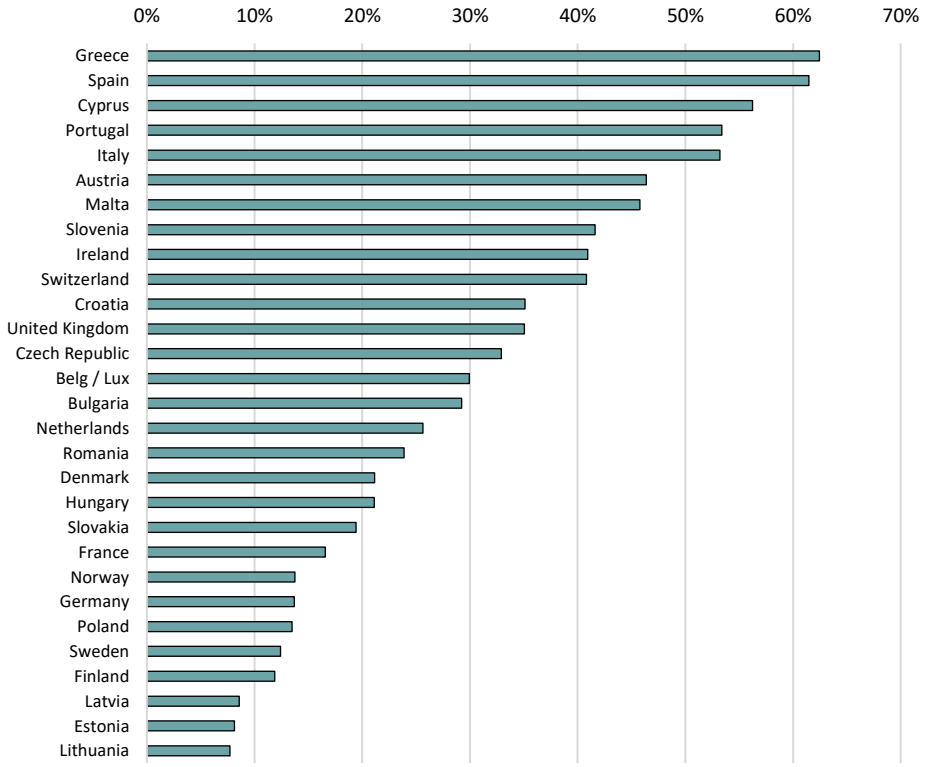
consumption becomes the preferred setting. Sweden and Finland report on-premise shares of only 12 %; the Baltics even report single-digits.

Figure 13: On- vs. off-premise sales (in 2019)



Source: IWSR (2021).

Figure 14: On-premise shares



Source: IWSR (2021).

IWSR reports on- and off-premise shares only on the basis of volumes rather than on values as data about on- and off-premise values are not available due to missing price information. We have applied the respective shares to the reported values in order to construct Figure 13. This, however, will necessarily underestimate the true sales values as spirits consumed on-premise are sold at much higher prices per centilitre covering service and catering margins. We will, therefore, account for a 300 % catering mark-up before the data enters our input-output analysis. This leads to reasonable prices: For example, if a bottle of medium-priced whisky costs 20 Euros (70 cl, without tax) in wholesale, the off-premise price would be 29 cents per centilitre. Our adjustment would now lead to an on-premise price of 4.57 Euros for a standard drink of 4 cl. If national taxes are added,[16] this will yield a realistic price in a bar or restaurant. Would we not make this adjustment, we would underestimate spirits consumption effects, especially in those countries with high on-premise shares. We would then implicitly support the assumption that the catering sector would not produce any value added (which is a common mistake in input-output analyses).

[16] Note that the excise tax does not change here as the quantities do not change, but the amount of VAT paid will get higher as the on-premise mark-up increases its base.

2.3.5 The “grey market”

It can be argued that the spirits sector has historically been subject to all kinds of illegal moonlighting and contraband activities in order to circumvent or simply offend national regulations. From an economic point of view, such activities – even if conducted in the dark and without documentation – nonetheless provide value added. At the end of the day, raw materials and labour have been transformed into some kind of spirit. It is getting distributed, sold, consumed and thereby pushes a bottle of legally produced beverage out of the market. Such activities are not only financially harmful for companies and for governments’ tax revenues but can also entail serious health issues. The WHO (2018) reports that about 25 % of global alcohol consumption might be unrecorded.

As grey market activities are necessarily hidden and do not show up in official statistics, it is hard to include them in studies like this. Nonetheless, they are part of our analyses as far as national statistics authorities have made estimations about illegal production and reported them to Eurostat. Also, IWSR is trying to cover contraband or related activities by visiting and interviewing all relevant players in each country and comparing their observations to official numbers. Hence, it has to be kept in mind that some part of the economic results we are about to show stem from unofficial spirits production and consumption. Making this part more explicit would be desirable but is impossible due to the discreet nature of the grey market.

2.4 Spirits tourism

The production and distribution of well-known spirits that are specific to an area also draw in tourists. During the last few years, interest in spirits-related travel has risen measurably in some regions. Therefore, we now look at tourism triggered by the spirits sector.

Tourism is one of the world's most prosperous economic sectors. *"It is a key part of a growing services economy, generating income and foreign exchange, creating jobs, stimulating regional development, and supporting local communities."* (OECD 2020: 15). The spreading of these benefits beyond traditional destinations with high visitor numbers (often combined with pressure on infrastructure, the environment, local communities etc.) can tackle both overcrowding in popular existing destinations and encourage tourism development in (rural) regions and thus stimulate regional economies (OECD 2020: 113-116). Approaches employed to attract tourists and achieve a more geographically diverse tourism sector include:

- Thematic tourism, which can be used to promote local gastronomy, beverages and produce, or leverage natural, cultural and industrial heritage.
- Community-based and indigenous tourism, which can play an important role in promoting and maintaining traditional arts, handicrafts, and culture.
- Regional festivals and events, often with close links to the host destination (e. g. culinary, literary).
- Tourist routes (road, bicycle, walking etc.) to influence destination development through a more efficient use of existing infrastructure.

Spirits tourism – tourism related to the production and degustation of particular spirits – utilises such approaches and strengthens the local and regional economy. As for any other tourists, spirits tourists do not only spend money on just spirits-related activities (e. g. visits of distilleries and cellars) but also on accommodation, food, transport, cultural activities, gifts etc. (ACEVIN 2020a).

According to Laboissiere (2020) the 25 main countries in the world offering spirits tourism recorded 21.5 million visitors per year.[17] The ten leading countries (regarding visitors) are: the United States (8 million), Scotland (2 million), France (1.8 million), Mexico (1.5 million), Japan (1.3 million), Taiwan (1.2 million), Ireland (1 million), Spain (0.6 million), Puerto Rico (0.5 million) and Cuba (0.4 million). In the following, we take a closer look at tourism related to specific spirits in four of the leading countries in Europe

[17] Data from 2018 or 2019. Sources: Web pages of companies and organisations, touristic and non-professional pages and blogs, business and specialised press as well as estimates.

(i. e. Scotland (UK), France, Ireland and Spain) producing spirits with "geographical indications" (GI).[18]

The four regions described below – all of them possess a relatively well-developed spirits tourism infrastructure – were selected in accordance with the client. It should be noted that the number of visitors included in the calculations for France and Spain differ from those stated by Laboissiere, as we focus on specific regions known for particular spirits instead of the country as a whole. Both Cognac in France and Brandy de Jerez in Spain are only produced in clearly defined parts of the respective country, while Scotch whisky may originate from all of Scotland and Irish whiskey from every distillery on the island of Ireland, including Northern Ireland.

Furthermore, we base our calculations on the number of visits to distilleries, Cognac houses or Spanish "bodegas". However, most visitors have several motives for choosing a destination. On their trip to Scotland, tourists may combine an evening of whisky tasting with several days of sightseeing or hiking. Visitors of the "Marco de Jerez" route, to give another example, may also visit Sevilla or spend some days at nearby beaches. Visiting a distillery or cellar is often just one of the reasons for visiting, albeit an important one. Therefore, it would not be adequate to attribute an entire trip of up to almost eight days (average length of stay of oversea tourists in Scotland) to spirits tourism. With this in mind, we assume that only days spent with spirits-related activities are directly related to spirits tourism. Every visit to, for instance, a visitor centre of a distillery, Cognac house or "bodega" is counted as a whole day of touristic spending, including expenses for accommodation, meals, transport, shopping, other cultural activities and so on. On top of the usual daily touristic expenses, we add an additional expenditure item for spirits-related expenses. As a result, some visitors may be counted twice or more often, if they visit more than one visitor centre during their trip. We thus ensure a careful selection of those days spent with spirits-related activities.

Moreover, we distinguish between domestic and inbound (international) visitors, as their average expense structures differ. These differences are recorded in the respective national Tourism Satellite Accounts (TSA), which are used as a base for the distribution

[18] According to the World Intellectual Property Organization (2021) a geographical indication (GI) is "*a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin. In order to function as a GI, a sign must identify a product as originating in a given place. In addition, the qualities, characteristics or reputation of the product should be essentially due to the place of origin. Since the qualities depend on the geographical place of production, there is a clear link between the product and its original place of production". (*https://www.wipo.int/geo_indications/en/)

of expenses in every selected country. In section 4.2, the economic effects of both domestic and inbound visitors will be shown in total.[19]

2.4.1 United Kingdom (Scotland): Region "Scotch whisky"

Scotland is home to over 130 distilleries, making it the densest concentration of whisky production in the world.[20] The geographical indication "Scotch whisky" (since 1989[21]) is limited to whisky produced in Scotland.[22] Scotland can be divided into five distinct Scotch whisky regions (VisitScotland 2018: 2):

- Highland (the largest area of the five regions, covering most of the Scottish mainland north of Edinburgh and Glasgow and including most of Scotland's islands)
- Speyside (located along the River Spey to the east of Inverness; the biggest region in terms of production, home to half of Scotland's distilleries)
- Lowland (only a handful of distilleries are still operating)
- Islay (the southernmost island of the Inner Hebrides of Scotland and the greatest of the whisky-producing islands) and
- Campbeltown (the small coastal town at the tip of the Kintyre peninsula with three working distilleries).

The whisky industry is the UK's largest single food and drink sector, which accounts for 25 % of the UK's food and drink exports, and 80 % of Scottish food and drink exports. France and the United States are the main importers (both in volume and value) of Scotch whisky (Visit Scotland 2018: 1).

Scotch whisky plays an important role in communities across Scotland and is often aligned with tourism activities, e. g. many distilleries are open to the public (4-consulting 2011: 14; 6), there is the "Malt Whisky Trail" in Speyside, a Whisky Museum in Dufftown, and there are several whisky shops[23] and Whisky-themed events.[24] Throughout Scotland, a total of 68 visitor centres welcome visitors from all over the world.[25]

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[19] We would like to thank the following organisations for kindly providing further information for this study: The Scotch Whisky Association, VisitScotland, Drinks Ireland/The Irish Whiskey Association, Charentes Tourisme, Destination Cognac and the Delegación de Turismo Jerez.

[20] The Scotch Whisky Association (2021a): https://www.scotch-whisky.org.uk/

[21] Distilling has a very long tradition in Scotland: The earliest documented record of distilling is from 1494 (The Scotch Whisky Association 2020: 33).

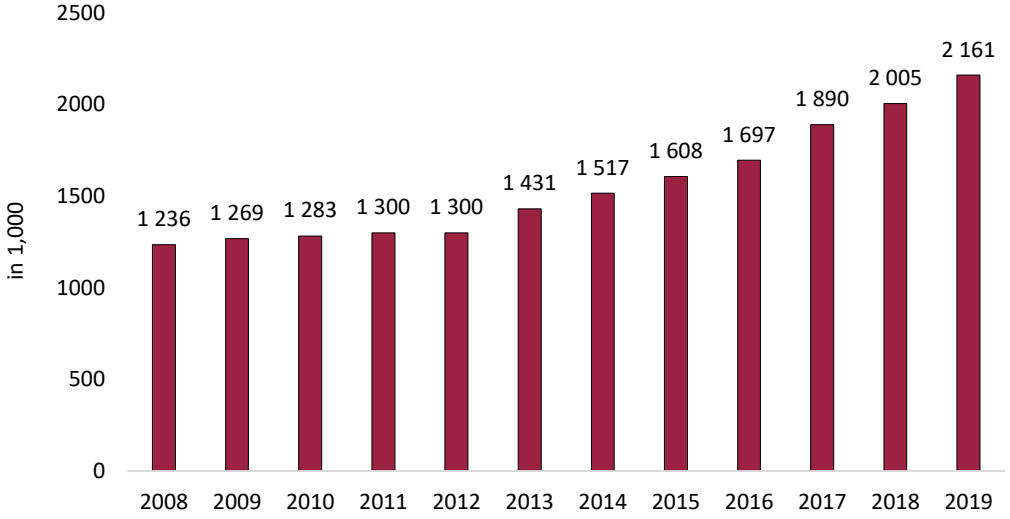
[22] spiritsEUROPE (2021): https://spirits.eu/geographical-indications and https://spirits.eu/spirits-tourism/

[23] Dufftown 2000 Ltd. (2021): http://www.whisky.dufftown.co.uk/whisky_trail.php

[24] VisitScotland (2021): https://www.visitscotland.com/blog/whisky/whisky-festivals/

Visits to distilleries have increased by two thirds since 2010.[25] An annual survey by the Scotch Whisky Association[25] found that a record number of 2.16 million visits to distilleries took place in 2019.

Figure 15: Visits to whisky distilleries in Scotland



Source: The Scotch Whisky Association (2021).[26]

According to the Scotland Visitor Survey of 2015 and 2016 (Jump Research 2017: 43), 20 % of the research participants visited a whisky distillery on their holiday; European visitors (38 %) were most likely to visit a distillery, closely followed by long-haul visitors (35 %). In 2019, all Scotch whisky visitor centres combined made up the third most visited attraction in Scotland after the National Museum of Scotland and Edinburgh Castle.[25, 27]

"ScotlandWhisky", the national whisky tourism initiative, operates the "Scotch whisky embassy network" with 90 hotels, golf courses, bars and restaurants (4-consulting 2011: 11). In order to gain recognition as an embassy, the organisations need to meet specific quality criteria (e. g. staff has to be trained in Scotch whisky appreciation). This network shows how Scotch whisky embassies and distilleries can form complementary tourism offers.

In 2019, 2.16 million visits have been paid to Scotch whisky visitor centres. The Scotch Whisky Association[25] reported 34 % domestic (from the United Kingdom) and 66 % international visitors, who on average spent 39.2 pounds (44.7 Euros; average exchange

[25] The Scotch Whisky Association (2021b): https://www.scotch-whisky.org.uk/newsroom/support-local-call-as-record-for-2019-scotch-whisky-tourism-revealed/

[26] Data submitted by e-mail.

[27] ALVA visitor attraction survey (2019): https://www.alva.org.uk/details.cfm?p=423

rate of 2019) in these visitor centres. Within the category of international visitors, the top countries of origin were the United States (19 %), Germany (14.6 %) and France (9.5 %). Additionally, domestic visitors on average spent 70 pounds (79.8 Euros) and international visitors 93 pounds (106.1 Euros) on a regular day (VisitScotland 2020: 6). In total, domestic visitors spent 109.2 pounds (124.5 Euros) and international visitors 132.2 pounds (150.8 Euros) on a single "whisky-day". The overall touristic expenses are then divided between the different economic sectors of the NACE classification system according to the national Tourism Satellite Accounts (TSA).

2.4.2 Ireland: Region "Irish whiskey"

Distilling in Ireland probably began in the 6th century, when monks brought the technique with them (Food Industry Development Division 2014: 13). In the 19th century, Ireland was the global centre of whiskey[28] production. In the 20th century, Irish whiskey experienced a serious downturn with only two working distilleries left by 1980**.** The 21st century has been called "the decade of the Irish Whiskey Renaissance", as global sales more than doubled between 2010 and 2020.[29] According to a report by Drinks Ireland/The Irish Whiskey Association (2020: 24), Irish whiskey achieved the fastest growth in global sales of all spirits categories worldwide during the last decade.

The geographical indication "Irish Whiskey / Uisce Beatha Eireannach / Irish Whisky" (since 1989) can only be legally produced and matured on the island of Ireland.[22] Hence, Northern Irish distilleries, such as the Old Bushmills, are included as well.

Whiskey tourism makes an important contribution to the Irish tourism sector. At the end of 2020 there were 38 operational Irish whiskey distilleries (Drinks Ireland/The Irish Whiskey Association (2020): 7), 18 with visitor experience and two further non-distillery brand homes (20 visitor attractions in total).[30]

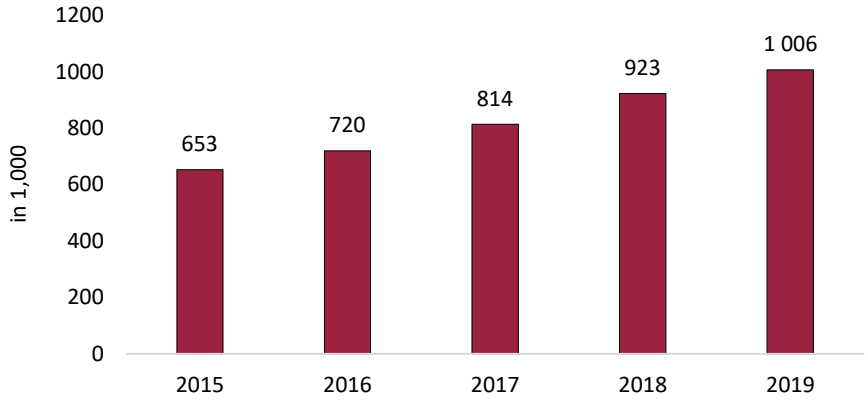
In 2015, Irish whiskey visitor centres attracted around 650,000 tourists; in 2017 around 810,000 visitors were counted and in 2019 just over 1 million (Drinks Ireland/The Irish Whiskey Association 2020: 36, Alcohol Beverage Federation of Ireland 2018: 3).

[28] Whenever **Irish** whiskey is meant explicitly in this report, the Irish spelling "whisk**e**y" is used.

[29] Irish Whiskey 360° (2021): https://irishwhiskey360.com/

[30] Drinks Ireland/The Irish Whiskey Association. Data submitted by e-mail.

Figure 16: Visits to whiskey distilleries in Ireland



Sources: Drinks Ireland/The Irish Whiskey Association (2020) / Alcohol Beverage Federation of Ireland (2018).

Examples for Ireland's whiskey tourism offering are the Jameson Distillery Midleton (experience tour and whiskey tasting), the Kilbeggan Distillery (guided tour of the historic distillery) and the Tullamore Dew Visitor Centre.[31] These visitor attractions are supplemented by the Dublin Whiskey Museum. Whiskey trails[32] are attracting tourists to specific regions or are encouraging tourists to spend more time in distillery towns (e. g. "Whiskey Trail Galway")[33] and help to create tourism clusters around each distillery.

In 2019, there were 1.02 million visits to Irish whiskey distilleries. 13 % of all visitors originated from Ireland (domestic visitors). The main home countries of international visitors were the United States and Canada (34 %), Great Britain (12 %), Germany (10 %) and France (7 %)[34] (Drinks Ireland/The Irish Whiskey Association 2020). On average, Irish overnight tourists, including Northern Irish visitors, spent 74 Euros and international tourists 96 Euros per day in 2019 (Fáilte Ireland 2021: 3-4). In order to calculate the effects of whiskey tourism on the island of Ireland and in accordance with the extra "spirit expense" in Scotland, we add 44.7 Euros per visit to Irish whiskey distillery to account for spirits-related activities. In this case, we used the reported average expenses at Scottish distilleries in Euros (see chapter 2.4.1) to account for the spirits-related

[31] Drinks Ireland (2021): https://www.drinksireland.ie/Sectors/DI/DI.nsf/vPagesDI/Industry_in_Ireland~tourism!OpenDocument

[32] Tourism Ireland (2021): https://www.ireland.com/en-us/articles/tripideas/whiskey-trail/

[33] The Whiskey Trail (2021): https://www.thewhiskeytrail.ie/

[34] Drinks Industry Ireland (2020): https://www.drinksindustryireland.ie/irish-whiskey-distillery-visits-break-million-mark/#:~:text=10.5%25%20in%202019.-,Over%20one%20million%20people%20visited%20Ireland's%2017%20Irish%20whiskey%20distilleries,the%20Irish%20whiskey%20industry%20contributed

expenses per tourist. In total, we estimate 118.7 Euros a day per domestic tourist and 140.7 Euros a day per international tourist.

2.4.3 France: Region "Cognac"

There are around 250 distilleries in France (120 are open for visitors), 17 museums, six "routes des spiritueux" and 1.8 million visitors a year ([22], [35], Laboissiere 2020).

Cognac is – aside from rum, calvados, armagnac, liqueurs, eaux-de-vie de fruit and whisky one of France's main spirits products (Laboissiere 2020). Yet, little of it is consumed at home: 98 % is exported – the United States are the largest market in volume and China the largest in value ([36], Song et al. 2018). Nowadays, 80 % of Cognac is produced by four companies: Hennessy, Martell, Rémy Martin und Courvoisier.[37]

The corresponding geographical indication "Eaux-de-vie de Cognac / Eaux-de-vie des Charentes / Cognac" (since 1989)[22] can only be produced in a specific region that stretches from the town of Cognac itself inland across the Charente region and over to the Atlantic coast (north of Bordeaux).[38] More precisely, the "Destination Cognac" refers to the area between the cities Angoulême and Saintes, or in other words, roughly the geographic zones Grande Champagne, Petite Champagne, Borderies and Fins Bois. The broader Cognac vineyard area also encompasses the regions Bons Bois and Bois Ordinaires. The wine-growing districts encompass in total around 79,000 hectares (second largest vineyard in France after the "region Bordeaux"). Cognac is made from Ugni Blanc grapes (a few other white varieties are also used), double distilled in copper pot stills and matured for several years.[39] Once bottled, a Cognac, unlike wine, doesn't evolve anymore. Six regions ("Crus") produce different Cognacs: Grande Champagne, Petite Champagne, Borderies, Fins Bois, Bons Bois and Bois Ordinaires.

The incoming tour operators of the tourist office offer a year-round range of events and theme days in the Cognac area: distiller, cognac merchant or heritage visits, cognac tasting tours, visits of museums (e. g. "Le musée des arts du Cognac") and of shops selling local products.[40] There are also multimedia tours of the likes of Hennessy, Martell or Rémy Martin, all established since the 1700s. In addition, several events take place in Cognac, e. g. the "Fête du Cognac"and the "Cognac Blues Passion".

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[35] Fédération Française des Spiritueux (2021): https://www.spiritourisme.com/le_spiritourisme-2.html

[36] The Guardian (2019): https://www.theguardian.com/travel/2019/jan/31/10-best-cognac-distillers-tours-tastings-france-brandy-charente

[37] IntoTheMinds (2021): https://www.intotheminds.com/blog/en/market-research-france-cognac-exports/

[38] Cognac Expert (2021): https://de.cognac-expert.com/wein-anbau-region-cognac and https://blog.cognac-expert.com/six-zones-cognac-crus-champagne-bois-borderies-fine/#Six_regions_six_unique_products

[39] Spirits of France (2021): https://spiritsoffrance.com.au/education/#1486009534505-5f810812-2ba5

[40] Cognac Tourisme (2021): https://www.tourism-cognac.com/uk

Since the year 2000, the organisation "Les Étapes du Cognac" arranges different thematic routes (Fédération Française des Spiritueux 2019: 194). These routes are accessible throughout the whole year with car, motorbike, bike, caravan and autobus.

According to information provided by the tourist office of Cognac there are around 350,000 visitors to the "Destination Cognac" per year. The big Cognac houses are all located within the narrower "Destination Cognac" region close to the city Cognac and can be safely expected to draw in the vast majority of spirits tourists in the region. The region, however, does not only attract tourists who are mainly motivated by spirits tourism offers. Cognac and wine tourists in particular cannot be clearly distinguished. We estimate that roughly 175,000 and therefore half of the visitors in the region fall under the category of spirits tourism.

A survey by the tourism association of Nouvelle-Aquitaine and several local tourism offices conducted in 2019 concerning the "Vignobles de Charentes" found that approximately 656,000 visitors paid around 1.3 million visits to the vineyards of Charentes (Région Nouvelle-Aquitaine Comité Régional de Tourisme 2019). It can be deduced that on average, spirits tourists in the region, too, spend two days (two visits) on spirits-related activities. We estimate that the 175,000 visitors of the "Destination Cognac" account for 350,000 visits. Based on the aforementioned survey, 66 % of the visitors are French (domestic) and 34 % of international origin. They spend approximately 75 Euros on spirits-related activities and purchases. On average, they spend 60 Euros (domestics) or 87 Euros (international) on a regular day,[41] resulting in a total daily expenditure of 135 Euros for domestic and 162 Euros for international visitors.[42]

2.4.4 Spain: Region "Brandy de Jerez"

With 19 geographical indications for spirits across the country, Spain is an important player in the European spirits tourism market.[22] There are plenty of distilleries, several museums and "spirits routes" and around 0.6 million visitors a year throughout Spain.

Sherry[43] / brandy is – aside from whisky, gin, anis and liqueurs – one of Spain's main spirits products (Laboissiere 2020). "Brandy de Jerez" is produced from distilled spirits and wine in the province of Cádiz. The geographical indication "Brandy de Jerez" (since 1989)[22] is located at the very tip of the Iberian peninsula, wedged between the Atlantic Ocean and the Guadalquivir and Guadalete Rivers.[44] The landscape lies within a triangle-

[41] These numbers are based both on the survey and on information of the Cognac tourism office.

[42] Data provided by the tourist offices of Cognac "Destination Cognac" and Charentes "Charentes Tourisme".

[43] The term „Sherry" originates from the moorish name "*Sherish"* for today's city Jerez (de la Frontera).

[44] Asociación Rutas del Vino y del Brandy del Marco de Jerez (2021): http://rutadeljerezybrandy.es/en/the_route and http://rutadeljerezybrandy.es/en/festivals_and_events

shaped area ("Sherry-triangle") whose vertices are the towns of Sanlúcar de Barrameda, El Puerto de Santa María and Jerez de la Frontera. The wine-growing area encompasses over 7,000 hectares. "Bodegas" (buildings where brandy is produced and aged and companies dedicated to this activity; also used for wine cellars) sell their brandies both nationally and internationally.[45]

Tourists visiting the Brandy de Jerez Region may tour "bodegas" and vineyards, taste the sherry wines and brandies accompanied by typical food of the area and purchase local products.[46] Festivals and events (e. g. the "Festival de Jerez") are also attracting visitors.[44] The most popular of Spain's 27 tourist routes with 0.5 million visitors is the "Marco de Jerez[47] Wine and Brandy Route" with vineyards, distilleries and museums (e. g. "Galería del Jerez") to visit.[22] Additionally, there is a bicycle hire service in Jerez that offers tourists the opportunity to follow guided routes.[48]

Compared with the other three described regions – in particular with the regions for Scotch whisky and Irish whiskey – the region for "Brandy de Jerez" is the smallest one both in crop area and spirits production value. These facts may have an influence on the development of the spirits tourism infrastructure (and thus on the number of visitors) in the particular region. Another reason for regional differences in spirits tourism development may be traced back to different (spirits) tourism strategies, including sustainability practices and guidelines, such as the preservation of natural resources or the reduction of environmental impact of production.

Just as in France, spirits and wine tourists cannot be clearly distinguished. The wine and brandy route "Marco de Jerez" recorded 568,997 visits in 2019.[49] This number comprises both visits to "bodegas" and museums that are associated with the route.[50] We estimate spirits tourists make up half of the overall visitors. Hence, we estimate 284,499 spirits-related visits. Based on tourism data for Andalusia for 2019, 73 % can be counted as domestic and 27 % as international visitors. On a regular day, visitors spend around 85,8 Euros[51] (domestic) or 124 Euros (international). (INE 2020a; INE 2020b) According to an analysis by the Spanish association of wine cities ACEVIN (2020b), visitors on the

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[45] Consejo Regulador Especifica Brandy de Jerez (2021): http://www.brandydejerez.es/en/bodegas-and-brands

[46] Turismo Jerez (2021): http://www.turismojerez.com/index.php/en/tourist-routes/sherry-wine-and-brandy-de-jerez-routes

[47] The historical name for the wine region of Jerez.

[48] Public Entity for Tourism and Sport Management in Andalusia (2021): https://www.andalucia.org/en/jerez-de-la-frontera-guided-tours-bike-and-wine

[49] Diario de Jerez (2020): https://www.diariodejerez.es/jerez/Ruta-Brandy-Marco-Jerez-Espana_0_1466853729.html

[50] El Puerto de Santa María (2018): http://www.turismoelpuerto.com/contenido/69/674/la-ruta-del-vino-del-marco-de-jerez-lideras-las-visitas-a-bodegas-de-espana-con-cerca-de-600.000-visitantes-en-2017

[51] The average daily expenses of domestic visitors to Andalusia (48 Euros) are considerably lower than those of domestic tourists from other spirits tourism regions as well as those of Spanish wine tourists. In this case, we assume somewhat higher daily expenses.

Marco de Jerez route spend 49.2 Euros a day on visiting "bodegas" and buying wine or spirits. In total, domestic visitors spend approximately 135 Euros and international visitors around 173.2 Euros on a day spent with spirits-related activities.

Key figures for all four tourism regions are summarised in Table 3.

Table 3: Key figures on spirits tourism 2019

	overall	inbound	domestic
Number of spirits-related visits			
United Kingdom	**2 160 678**	1 426 047	734 631
Ireland	**1 020 000**	887 400	132 600
France	**350 000**	119 000	231 000
Spain	**284 499**	76 722	207 777
Daily regular expenditure per tourist (in €)			
United Kingdom	**97.2**	106.1	79.8
Ireland	**93,1**	96	74
France	**69.2**	87	60
Spain	**96.1**	124	85.8
Daily expenditure for spirits-related activities per tourist (in €)			
United Kingdom	**44.7**	44.7	44.7
Ireland	**44.7**	44.7	44.7
France	**75.0**	75.0	75.0
Spain	**49.2**	49.2	49.2
Total daily expenditure (mill. €)			
United Kingdom	**141.9**	150.8	124.5
Ireland	**137.8**	140.7	118.7
France	**144.2**	162	135
Spain	**145.3**	173.2	135

Source: IHS (2021).

2.5 The ecological impact of the spirits sector

Environmental impacts of spirits production depend on a large number of factors. This includes, inter alia, the raw material used – various crops (e. g., barley, potatoes, sugar cane), the agricultural methods applied (e. g., the use of pesticides and inorganic fertilizers), climatic and soil conditions, the type of distillation (column or pot), the fuel and electricity use, the choice of packaging material (e. g., glass or PET bottle), the means of transport (e. g., by rail, road or ocean), the duration of maturation, the use of by-products (e. g., for animal feed or renewable energy), and the method of measurement (BIER 2012a; Erikkson et al. 2016; Leinonen et al. 2018).

According to the Carbon Footprint of Spirits report by the Beverage Industry Environmental Roundtable (BIER 2012a), the distillation process is the largest contributor to the distilleries' carbon footprint. These results are in line with the findings by Garnett (2007) and more recent estimates by spiritsEUROPE (2020). This is due to the

fact that the distillation process is energy-intensive, since it requires a lot of energy for heating and cooling (Jobson 2014). Thus, the consequent environmental impact depends mainly on the source of energy used. Besides the distillation process, packaging and farming account for a considerable part of the environmental impact, while transport and retail play a minor role (spiritsEUROPE 2020).

More and more literature deals with life cycle assessment (LCA) methodology to assess the environmental impact of the spirits sector (e.g., Erikkson et al 2016 for Swedish single malt whisky; Weidema et al. 2016). This method tries to capture environmental impacts caused by all stages of a product's life. Weidema et al. (2016) conclude in their comparative study for the Nordic Alcohol Monopolies that the spirits production has – measured in per litre beverage – higher impacts on the environment than wine and beer. In contrast, Saxe (2010: 25) argues that a "unit based on the content of 100 % ethanol could be a better basis for comparison of alcoholic drinks" and finds with this method of measurement that spirits have compared to wine and beer the lowest environmental footprint.

In recent years, several associations, producers and researchers have presented strategies to reduce environmental impacts of the spirits sector. For instance, the Scotch whisky industry published its first environmental strategy in 2009. Their current strategy aims, inter alia, at raising their water and energy efficiency, reducing the average packaging weight, and strengthen the circular economy (The Scotch Whisky Association 2018). SpiritsEUROPE (2020) addresses in its Green Deal the following seven topics: farming, water, energy, by-products, wood, packaging, and transport. Greenhouse Gas (GHG) emissions, water and energy use are mainly used for the measurement of the environmental impact (BIER 2012a; BIER 2018; BIER 2019).

More recently, the potential of by-products of the production process has been analysed. For instance, Leinonen et al. (2018) examine the effects of alternative uses of distillery by-products on the Greenhouse Gas emissions for the Scottish malt whisky production. The results of different scenarios suggest that the highest reduction of GHG can be achieved using by-products as soya meal in animal feed.

The energy production as well as land and water use for the production of crops in the European Union are discussed in more detail below.

Energy production in the EU

Several studies (e.g., Hondo 2005; Turconi et al. 2013) compare Greenhouse Gas emissions of different electricity generating sources. They report that coal/lignite fired power plants have the highest GHG emissions per kWh, followed by oil and natural gas.

In 2018, renewable energy (including inter alia hydro, wind and solar energy) was with around one third the most important source of energy production in the EU, followed by nuclear energy, solid fuels, natural gas and crude oil. However, the energy produced differs across member states. In France, almost 80 % of total national energy production can be attributed to nuclear energy. On the other hand, renewable energy is the main source of energy produced in Malta, Latvia, Cyprus, Portugal and Lithuania. Solid fuels have the highest share of energy production in Poland (78 %), Estonia (74 %), Greece (57 %) and Czechia (55 %) (see Eurostat 2020a). In the Netherlands, natural gas is the main contributor to energy production, while crude oil is the major source of energy produced in Denmark. Furthermore, the EU imports with 55 % a considerable amount of its energy consumption (Eurostat 2020a). This means that the energy footprint of the distillation process varies widely across the member states of the European Union.

Land, water use and farming system for the production of crops in the EU

The main ingredients of spirits are agricultural raw materials – various crops – and water. Agriculture occupies a substantial portion of land in the European Union and is a main driver of land and water use. In 2015, agricultural land accounted in average for more than 40 % of land use (Eurostat 2020b) and 44 % of water use (European Commission 2017) in the European Union. In doing so, the yield factor varies across countries. For instance, in 2019, barley yield stood at 2.6 tonnes per hectare (yield in EU standard humidity) in Cyprus, against 8.6 tonnes per hectare in Belgium. In the United Kingdom – where barley is used in the whisky production –, barley production amounted to 6.8 tonnes per hectare (Eurostat 2021c).

Moreover, according to a study by Mekonnen and Hoekstra (2010), the global average water footprint varies greatly across crops. On average, stimulants (such as coffee and cacao) have the highest total water footprint (green, blue and grey water) with 14,443 m^3/tonne, while the water footprint of sugar crops is with 197 m^3/tonne the smallest. The average impact of cereals is 1,664 m^3/tonne. Measured in litre/kcal, the water footprint of cereals (0.51 litre/kcal) is after roots and tubers (0.47 litre/kcal) the second lowest. The authors emphasize that the water footprint can differ across regions. Furthermore, the amount of water used for the production of crops does not only depend on the cultivated crop. Characteristics of the soil, the climate, and the farming system play an important role as well (Mekonnen and Hoekstra 2010).

Also, other environmental impacts of crops production, such as biodiversity, the use of pesticides and fertilizers and soil degradation, depend on the farming system. Organic farming has positive effects on soil and water quality by avoiding the use of pesticides and inorganic fertilizers. The production of fertilizers (i.e., nitrogen (N) and phosphorus (P)) is energy-intensive. Camargo et al. (2013) find for all observed non-leguminous crops

that the application of N fertilizer has the highest impact on GHG emissions and energy use within their production process. The relationship between organic farming is not fully explored, as stated by Hole et al. (2005), but organic farming seems to have mainly positive impacts on biodiversity (Rahmann 2011). The relationship between organic farming and GHG is not clear yet. Skinner et al. (2014: 561) conclude from in their meta-analysis that "[t]here is scientific evidence for lower nitrous oxide emissions from organically managed soils when scaled to the area of cultivated land but higher emissions when crop yield-scaled". They explain their findings with the yield gap of organic farming. This example shows that results may vary considerably across methods of measurement.

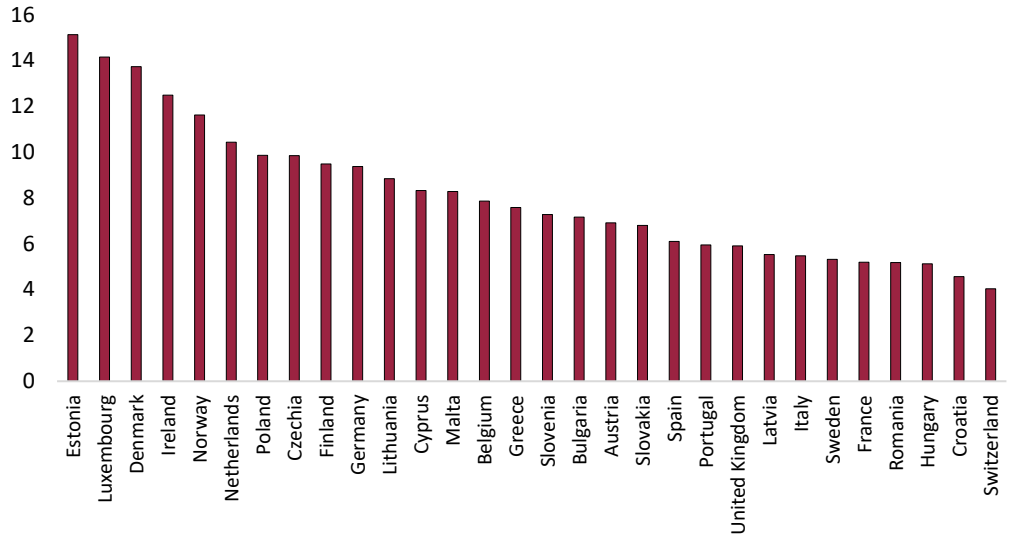
In the European Union, around 8 % of the total utilised agricultural area was organic farming (fully converted and under conversion to organic farming) in 2019. Austria had with 25.3 % the highest share of organic farming, followed by Estonia (22.3 %) and Sweden (20.4 %). Malta (0.5 %), Ireland (1.6 %), Bulgaria (2.3 %) and the United Kingdom (2.6 %) had the smallest share of organic farming (Eurostat 2021d).

Indicators measuring the environmental effects of spirits industries

In order to examine the environmental effects of the spirits sector we include in the input-output-analysis (see section 3.2) several indicators concerning the production of spirits as well as the related trade and catering activities in the EU+. At first, we look at the GHG-emissions in the observed countries. Eurostat (2020c) provides a total indicator regarding the GHG-emissions, which encompasses diverse gases: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbones (HFC), perfluorocarbones (PFC), nitrogen trifluoride (NF3) and sulphur hexafluoride (SF6). All gases included in this indicator are expressed in CO_2 equivalents (CO_2 eq.)[52] as a common measure. Figure 17 shows the total GHG-emissions per capita of population.

[52] CO_2 equivalents: "A carbon dioxide equivalent or CO_2 equivalent, abbreviated as CO_2 eq. is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential (GWP), by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential (Eurostat 2017).

Figure 17: Total GHG-Emissions (tonnes of CO_2 eq.) per capita of population, 2017



Source: Eurostat (2020c) – Air emissions accounts, GHG-Emissions in CO_2 eq. (CO_2, N_2O, CH_4, HFC, PFC, SF_6, NF_3 all in CO_2 eq.). Eurostat (2021e): Population on 1 January.

We include in our input-output-analysis – based on Eurostat data (Eurostat 2020c) – the total GHG-emissions in CO_2 eq. (CO_2, N_2O, CH_4, HFC, PFC, SF_6, NF_3) by sectors at 2-digit-level of the NACE classification of economic activities for each of the observed countries. Concerning the agriculture sector, we focus on GHG-emissions from the plant agriculture. We estimated this share using data from the European Environmental Agency (EEA), where GHG-emissions in agriculture[53] are divided by source sector (Eurostat 2020d).

A further indicator included in the input-output-analysis of the spirits sector is the "utilized agricultural area" measured in hectares.[54] For this indicator we used data from Eurostat (2020e) for the major part of the observed European countries. Data on use of agricultural land for Switzerland and Norway come from FAOSTAT (2020), due to lack of such information in the Eurostat database.

[53] Emissions form agriculture from EEA are compiled from national inventories.

[54] Sum of "Utilized agricultural area" by three types of farms - "low input", "medium input" and "high input" farms - *own calculation IHS based on Eurostat (2020e).*

3 Methodology: Multi-regional Input-Output Analysis

This section outlines our study's methodological approach. In order to examine the economic and ecological footprint of the European spirits sector at the country-level, we apply a multi-regional input-output analysis. This method allows to quantify the direct macroeconomic impact of the spirits sector as well as spillover (indirect and induced) effects on other industries along the value chains.

3.1 Direct, indirect and induced effects

The strength of input-output analysis is that, in addition to direct effects, indirect and induced effects can also be calculated.

Direct effects arise instantaneously during the production process of spirits in terms of employment and value added, consisting mainly of wages and salaries, employers' social contributions, operating surplus, and consumption of fixed capital directly by the spirits producers.

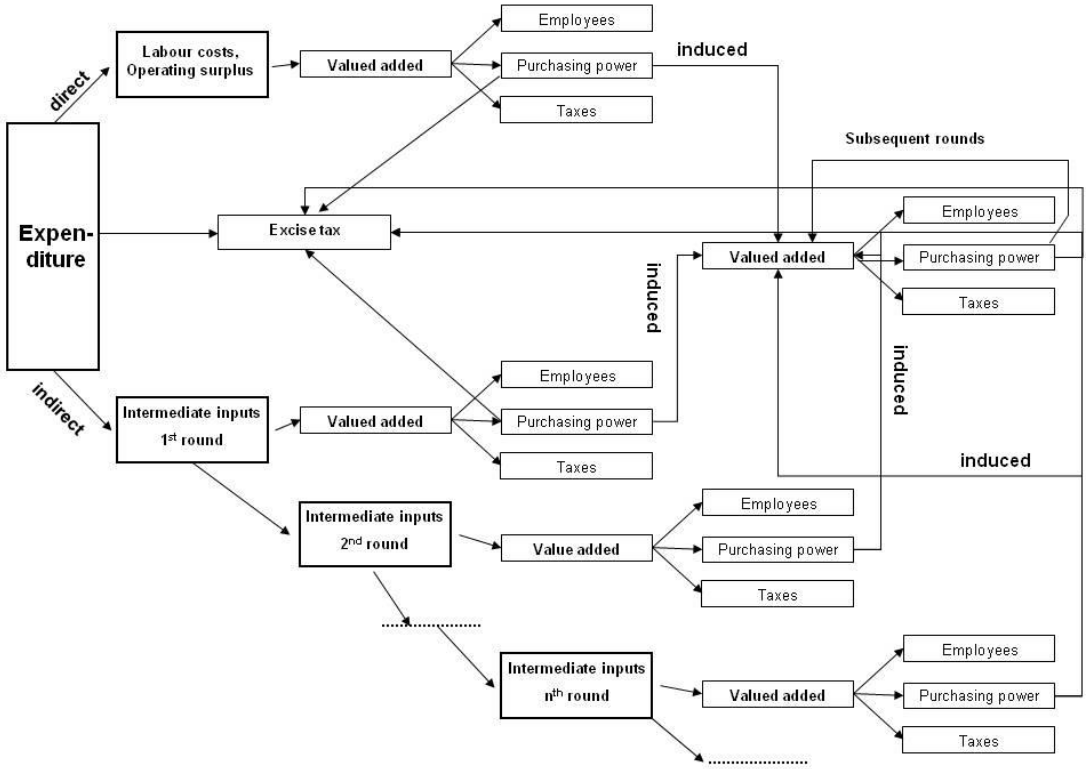
Indirect effects, in contrast, arise during the production of inputs for the production process of spirits and occur, e. g., during the production of fruits and crops, water, energy, containers, bottling machines, and other upstream products. The purchase of these inputs, in turn, leads to employment and value-added effects in the supplying companies. The materials and services necessary for the provision of intermediate demand must also be purchased from other industries, and so on.

The *induced effects* can be distinguished into *consumption-* and *investment induced* effects: *Consumption induced* effects are the ones that occur when employees who are somehow involved in the spirits production (either directly or indirectly) spend the income they have earned just because they have been part of this process. *Investment induced* effects occur when upstream industries conduct investments in order to satisfy the increased demand. The induced effects will again lead to employment, value added and fiscal effects. For the induced effects it has to be considered that (1) not the entire income is consumed (some is saved; different saving rates in different countries have been applied) and that (2) most countries pay net replacements in the case of unemployment.

The value added at each stage of the production of spirits is realised as wages, gross operating surplus, depreciation or taxes.

A simplified structure of an input-output analysis is displayed schematically in Figure 18.

Figure 18: Illustration of value creation effects, employment effects, purchasing power effects, and fiscal effects.



Source: IHS (2021).

3.2 Calculated effects

The following economic and ecological key indicators are calculated in the present study:

Added value effects: The gross value added includes economic performance (production value minus intermediate demand) within a country, expressed in market prices, for the economy as a whole and for the most benefiting industries.

Employment effects: This means all jobs created through the measures considered and their linkages with other economic sectors. Employment effects are reported in person-years.

Fiscal effects: The non-negligible tax reflux in the form of social security contributions and taxes is appended to the value added and employment effects mentioned above: Social security contributions, income taxes, corporate taxes, and value added tax (VAT). Spirits-related VAT and excise duties come on top of that (see also subsection 2.3.3).

Environmental effects: Effects of emissions of selected greenhouse gases are examined. They refer to the production of spirits including upstream production as well as to the related trade and catering activities in the EU+. We consider a number of greenhouse gases and express the results in CO_2 equivalents (see also subsection 2.5). We will also report the proportion of agricultural land utilised for spirits-related activities.

3.3 Input-output tables

Input-output tables are the starting point for an input-output analysis. They provide a detailed picture of inter-industry relationships. They show how much input is needed from every industry along the supply chains to produce one unit of goods or services. In addition, input-output tables include the components of the final demand (consumer expenditures by private households, and government expenditures, gross fixed capital formation, inventory changes, and exports) and a breakdown of value-added components (wages, depreciation, gross operating surplus, other taxes on production, and other subsidies on production). An illustration of an input-output table is given in Table 4.

Table 4: Structure of an input-output table

	good 1	**…**	**good n**	**total intermediate use**	**final use components**	**total**
good 1	z_{11}	…	z_{1n}	$\sum z_1$	Y_1	$\sum 1$
⋮	…	…	…	⋮	⋮	⋮
good n	z_{n1}	…	z_{nn}	$\sum z_n$	Y_n	$\sum n$
total Intermediate use	$\sum z_1$	…	$\sum z_n$			
imports	m_{n1}	…	m_{nn}			
gross value added components	V_1	…	V_n			
gross production value	X_1	…	X_n			

Source: IHS (2021).

Derived from the interdependencies between different goods and services and their input structure, value added, employment and fiscal multipliers can be calculated to depict the relationship between total production of goods and these indicators. With the

help of the *Leontief inverse* the direct and indirect input requirements for one unit of output can be calculated.

Multi-regional input-output tables provide additionally information on economic flows between countries or regions. The interlinkages between sectors and countries allow to quantify, for instance, the economic effects of spirits production in the United Kingdom on the German economy and its sectors.

Input-output statistics are part of national accounts, and their preparation is carried out mostly according to standardised international concepts and rules. The international standard is the *System of National Accounts* 2008 (SNA 2008); its European counterpart is the *European System of National and Regional Accounts (ESA 2010).*

3.4 OECD tables

The OECD publishes the OECD Inter-Country Input-Output (ICIO) tables on an annual basis. These multi-regional tables show for 36 industries and 65 countries (and the rest of the world), how the industries are interlinked between these countries including the EU28, Switzerland and Norway. These tables are currently available for the years 2005 to 2015.[55] The tables were supplemented with tax effects, using implicit tax rates.[56] The description of our input data has been presented in section 2.

3.5 Environmentally extended input-output tables

Furthermore, the OECD tables were extended to incorporate environment-related information and calculate the environmental footprint of the European spirits sector. Following the generalized input-output model described by Miller and Blair (2009), additional rows were augmented to each of the 36 industries of the OECD table, containing information on air pollution and land use per unit of produced good or service. Here, the unit of measurement differs from the economic analysis and contains physical units, such as tonnes of CO_2. The data on GHG-emissions comes from the air emissions accounts of Eurostat (2020c); the ones on land use came from Eurostat (2020e) and FAOSTAT (2020).

3.6 Types of classifications

The input-output-tables are usually structured in two different types of classifications: One to classify companies, and the other to classify the production of goods and services.

[55] https://www.oecd.org/sti/ind/inter-country-input-output-tables.htm

[56] European Commission, DG Taxation and Customs Union (2020b) and OECD Stat (2021a, b).

The CPA (Classification of Products by Activity) classification is used for the classification of goods and services. They are classified by type (such as services in the accommodation sector or chemical products). In contrast, companies (such as accommodation companies or chemical companies) are classified according to NACE (Nomenclature statistique des activités économiques dans la Communauté Européenne - Statistical classification of economic activities in the European Community) codes. These two classifications correspond to each other, so that, in general, each type of product in the CPA has a corresponding type of company in NACE. Companies can produce goods and services not only from their own sector but also from other sectors (e.g. farms diversify into alcohol production, or spirits producers produce hand sanitiser). Eurostat classifies companies according to their most important good. The OECD tables are published based on NACE. Within the NACE classification, the production of spirits belongs to the sub-sector "11.01 Distilling, rectifying and blending of spirits". This sector is part of the sector 11 "Manufacture of beverages", which in turn belongs in the OECD tables to the "Manufacture of food products, beverages and tobacco products".

3.7 Assumptions

Our input-output model is based on some simplifying assumptions. Thus, when interpreting its results, it is important to have the following three assumptions in mind: Firstly, constant returns to scale are assumed in the model. This means that an increase of an output by a certain factor leads to an increase in each input component by exactly this factor.

Secondly, the adopted OECD tables from 2015 are used for the analysis. In doing so, consideration must be given in particular to structural changes, technological progress (in the form of increased productivity), inflationary aspects (in the form of price changes) as well as rises in employee income levels. Since the data collection for the input-output tables is a very complex process, such tables are only available with a time lag of several years.

Thirdly, the questions of the extent to which employment is secured or whether new jobs are created through spending and investment of the spirits sector are not answered in the present study. This means that total employment in relation to expenditures and investments is reported, irrespective of whether new jobs are created or there is any change in the deployment of existing ones. We will therefore not use the expression "x jobs are *created*" but rather go with the wording "x jobs are *supported*".

4 Results

4.1 Economic effects

Finally, we are all set to present the economic and environmental effects of spirits production and consumption in the EU+. We will first show the overall effects (including production and consumption) and then present separate tables for production as well as on- and off-premise consumption. The results for the four selected spirits tourism regions (in Scotland, Ireland, France and Spain) will be shown in Section 4.2. Section 4.3 will be concerned with the environmental effects. Results for the individual categories (whisky, brandy, vodka, flavoured & national spirits, gin and rum) as well as for the selected geographical indications (Scotch and Cognac) will be shown in Appendix A (see Section 7). Country sheets will be presented in Appendix B (see Section 8).

We start with the total employment effects as they are easy to assess and to compare. In total, spirits production and consumption activities supported about 1.2 million jobs in the EU+ in 2019; this equals about 0.5 % of the overall EU+ employment[57] and would not be too far away from the entire work force of, e. g., Lithuania.

Figure 19 shows where these jobs are: We find that about 61,000 of them fall upon the actual production of spirits; those are called *direct* effects of production (see the dark grey slice in Figure 19). Another 258,000 jobs are supported in an *indirect* manner at producers of intermediate products, including agriculture, malting etc. Another 108,000 jobs are *induced* by the direct and indirect activities as employees will spend their income on all kinds of consumption and will thereby trigger additional effects all across the value-added chain. The orange slices in Figure 19 depict the employment results for the retail sector. Spirits support almost 102,000 jobs directly in retail trade. As this sector does not require a lot of intermediate goods, the shares of indirect and induced effects are smaller than for production. Finally, the pink slices represent the catering sector that accounts for more than half of all employment triggered by spirits in the EU+. About 432,000 jobs are supported directly at bars or restaurants; another 210,000 are added catering-related in an indirect or induced manner.

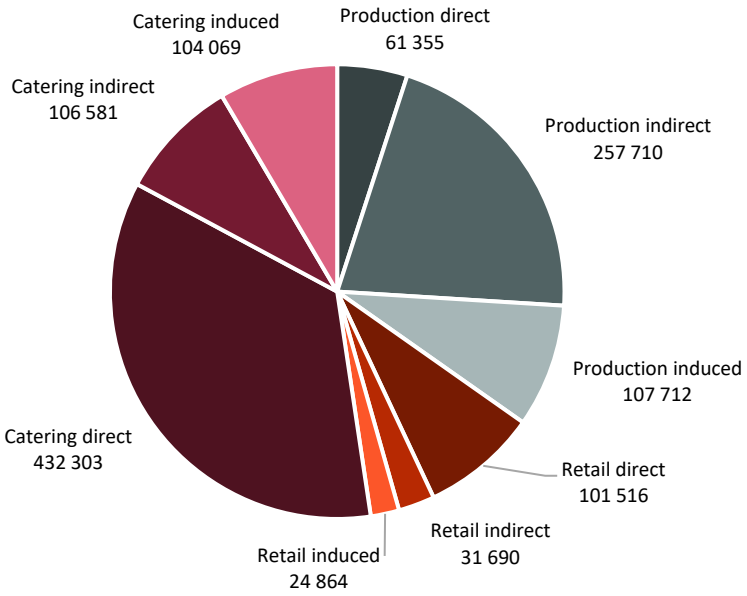
In terms of gross value added (GVA), the spirits sector was responsible for about 60.0 billion Euros in 2019; this is about 0.4 % of the total GVA in the EU+ and equals more than twice the overall GVA in Latvia.[58] The distribution by country is shown in Figure 20. Not surprisingly, the largest effects can be measured, not necessarily in those countries

[57] See Eurostat (2021f) for overall employment numbers.

[58] See Eurostat (2021g) for overall employment numbers.

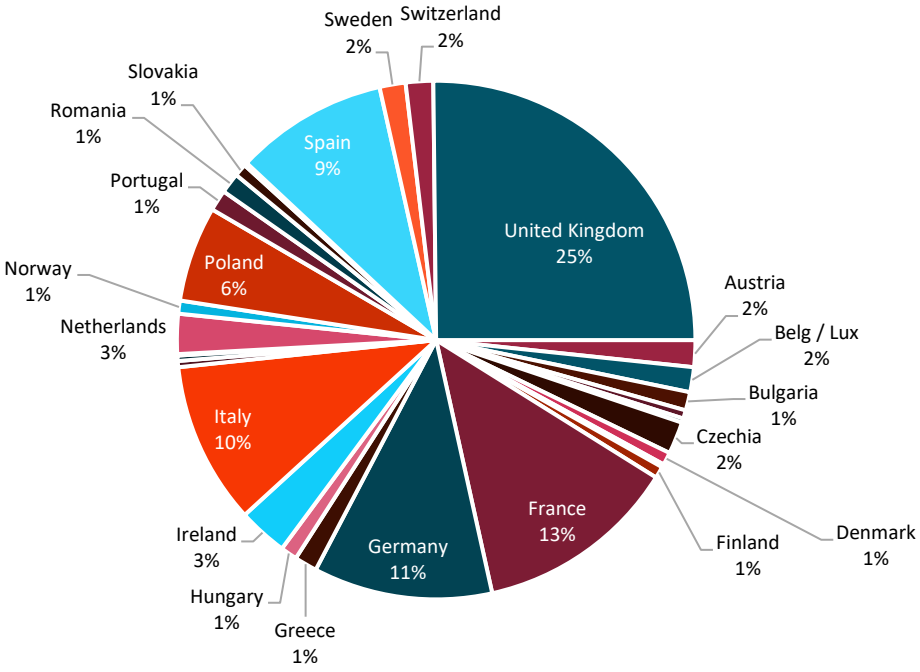
with a large spirits production, but in those that have a large population and therewith large spirits trade and consumption activities.

Figure 19: Employment results by type of effect in the EU+



Source: IHS (2021).

Figure 20: GVA effects by EU+ country



Source: IHS (2021).

The fiscal effects in 2019 amounted to 21.4 billion Euros. This number includes for example income and profit taxes paid in all industries influenced by spirits production and consumption. What the standard input-output model can not capture, however, is the amount of value added tax (VAT) and excise duties for the actual spirits products. We have estimated them to about 25.4 billion Euros in subsection 2.3.3 based on IWSR data and assumptions concerning on- and off-premise consumption. If we add both numbers, we yield the overall fiscal effect of spirits of 46.8 billion Euros. Even though spirits related tax revenues are only a small fraction of overall government revenue in most countries (see country sheets in the Appendix), the overall fiscal effect is more than a quarter of the overall EU budget.[59]

Our results are somewhat higher than in the study by Ernst & Young (2010) ten years ago, especially with respect to gross value added. The differences might be explained by the fact that the spirits sector has seen considerable growth over the last decade. Inflation over the years explains another share of the differences in GVA. We also have included Norway and Switzerland while Ernst & Young (2010) had not. Furthermore, we consider not only direct and indirect but also induced effects, to name only one methodological difference. Hence, the two studies are not as far apart as they might appear at first sight.

The GVA and employment effects by industry are – sorted by jobs per year – presented in Figure 21. The grey bars represent the respective employment effects (plotted on the bottom axis); the red ones represent the gross value added effects (plotted on the top axis in million Euros).

Not surprisingly, the sectors that benefit most from spirits production and consumption are, i. a., *accommodation and food services* (which clearly relates to the large pink areas in Figure 19), *wholesale and retail trade* (see the orange slices in Figure 19) and the manufacturing sector for *food products, beverages and tobacco* that distilleries belong to (see the grey slices in Figure 19). Sectors that are closely related to spirits production, like agriculture, transportation or other business services are among the most benefiting industries as well. It is interesting to see that some industries rank high in terms of GVA but much lower in terms of employment. One of the reasons for this is that industries differ in terms of productivity and, hence, hourly compensation (GVA per employee is more than 100,000 Euros in some manufacturing sectors but only 30,000 Euros in accommodation and food services).[60]

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[59] https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/mff_2021-2027_breakdown_current_prices.pdf

[60] An extreme example for this is the real estate sector. This is a typical result in input-output analyses.

Figure 21: GVA and employment effects by industry in the EU+

Source: IHS (2021).

The overall economic effects (employment, gross value added and fiscal effects) are summarized again in Table 5. The tables on the subsequent pages show the detailed results for production as well as for on-premise consumption (i. e. the catering sector) and off-premise consumption (i. e. retail trade).

Table 5: Overall economic effects of spirits in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*
United Kingdom	**15 101**	7 205	4 555	*11 760*	*3 341*	**198 360**	99 566	59 093	*158 658*	*39 702*	**5 084**	2 128	1 482	*3 610*	*1 474*
France	**7 580**	2 656	3 213	*5 869*	*1 711*	**103 781**	40 385	41 984	*82 369*	*21 412*	**3 649**	1 163	1 495	*2 659*	*990*
Germany	**6 695**	2 048	2 835	*4 882*	*1 812*	**128 828**	59 096	43 275	*102 371*	*26 457*	**2 590**	691	1 061	*1 752*	*838*
Italy	**6 062**	2 210	2 355	*4 564*	*1 498*	**100 015**	39 409	36 605	*76 014*	*24 001*	**2 261**	730	845	*1 575*	*686*
Spain	**5 717**	2 883	1 495	*4 378*	*1 339*	**111 040**	60 298	27 429	*87 726*	*23 314*	**1 884**	827	477	*1 304*	*580*
Poland	**3 575**	934	1 985	*2 919*	*656*	**147 740**	46 527	76 246	*122 772*	*24 968*	**1 157**	251	599	*850*	*307*
Ireland	**1 850**	1 130	449	*1 579*	*270*	**21 695**	15 572	3 577	*19 150*	*2 546*	**445**	242	103	*345*	*100*
Netherlands	**1 494**	529	627	*1 156*	*338*	**27 455**	14 799	8 177	*22 976*	*4 479*	**433**	125	177	*302*	*131*
Czech Republic	**1 206**	553	420	*973*	*233*	**46 429**	26 325	12 860	*39 185*	*7 244*	**389**	151	131	*282*	*107*
Switzerland	**1 026**	364	339	*703*	*323*	**13 207**	7 865	2 603	*10 468*	*2 739*	**192**	56	62	*118*	*74*
Austria	**1 003**	492	316	*807*	*196*	**14 750**	8 307	3 995	*12 302*	*2 447*	**368**	162	115	*277*	*91*
Sweden	**973**	373	382	*755*	*217*	**10 113**	3 906	3 920	*7 826*	*2 288*	**375**	127	144	*271*	*104*
Belg/Lux	**932**	282	404	*687*	*246*	**12 701**	5 720	4 343	*10 063*	*2 638*	**395**	100	169	*270*	*125*
Greece	**847**	428	283	*711*	*136*	**24 543**	14 184	6 453	*20 637*	*3 905*	**254**	111	84	*194*	*60*
Portugal	**785**	386	205	*591*	*194*	**23 447**	12 390	5 584	*17 974*	*5 473*	**251**	103	62	*165*	*86*
Romania	**766**	343	237	*580*	*185*	**44 118**	22 172	11 695	*33 867*	*10 251*	**187**	64	57	*122*	*65*
Bulgaria	**687**	311	224	*535*	*152*	**75 234**	46 241	17 077	*63 318*	*11 916*	**190**	62	55	*117*	*74*
Hungary	**622**	261	230	*491*	*131*	**34 032**	19 344	9 253	*28 598*	*5 434*	**234**	78	76	*154*	*80*
Norway	**491**	96	233	*329*	*162*	**4 032**	1 655	1 259	*2 914*	*1 118*	**184**	34	78	*112*	*72*
Denmark	**474**	177	181	*358*	*116*	**8 856**	5 376	2 155	*7 531*	*1 324*	**190**	58	70	*128*	*62*
Slovak Republic	**470**	211	159	*370*	*100*	**23 619**	16 119	4 719	*20 838*	*2 780*	**156**	65	47	*112*	*44*
Finland	**441**	142	196	*338*	*103*	**6 607**	2 686	2 584	*5 270*	*1 337*	**188**	50	83	*132*	*56*
Croatia	**313**	166	75	*241*	*72*	**13 447**	7 673	2 914	*10 587*	*2 860*	**101**	39	24	*63*	*39*
Latvia	**231**	99	76	*175*	*56*	**10 539**	5 800	2 704	*8 504*	*2 035*	**65**	22	19	*41*	*24*
Lithuania	**199**	93	64	*157*	*42*	**8 087**	4 496	2 111	*6 607*	*1 480*	**50**	19	14	*34*	*16*
Cyprus	**159**	87	40	*128*	*31*	**5 149**	3 514	853	*4 367*	*781*	**43**	15	13	*28*	*15*
Estonia	**117**	49	44	*93*	*25*	**4 904**	2 965	1 205	*4 169*	*735*	**37**	13	12	*25*	*12*
Slovenia	**114**	46	37	*83*	*30*	**3 766**	1 993	964	*2 957*	*809*	**41**	13	13	*26*	*15*
Malta	**53**	29	16	*45*	*8*	**1 307**	791	344	*1 136*	*171*	**15**	7	4	*11*	*4*
EU+	**59 984**	**24 583**	**21 675**	***46 259***	***13 725***	**1 227 800**	**595 174**	**395 981**	***991 155***	***236 645***	**21 410**	**7 506**	**7 570**	***15 076***	***6 334***

Source: IHS (2021).

Table 6: Economic effects of spirits <u>production</u> in the EU+ sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*
United Kingdom	**8 628**	4 087	2 849	*6 935*	*1 692*	**71 189**	14 695	36 205	*50 900*	*20 289*	**2 991**	1 310	946	*2 255*	*736*
France	**4 600**	1 251	2 384	*3 635*	*965*	**51 928**	8 320	31 558	*39 878*	*12 050*	**2 294**	601	1 130	*1 731*	*563*
Germany	**3 387**	580	1 927	*2 508*	*879*	**47 620**	4 934	29 848	*34 782*	*12 838*	**1 346**	194	747	*941*	*405*
Italy	**3 358**	865	1 656	*2 521*	*837*	**44 806**	5 015	26 348	*31 362*	*13 443*	**1 276**	288	608	*896*	*380*
Poland	**2 395**	312	1 652	*1 964*	*430*	**86 555**	5 131	65 102	*70 233*	*16 322*	**789**	83	503	*586*	*202*
Spain	**1 455**	353	703	*1 055*	*399*	**23 141**	3 421	12 715	*16 136*	*7 005*	**503**	103	232	*335*	*168*
Ireland	**1 258**	767	347	*1 114*	*144*	**6 808**	2 758	2 652	*5 411*	*1 397*	**277**	144	81	*225*	*52*
Sweden	**717**	275	300	*575*	*143*	**6 434**	1 836	3 082	*4 918*	*1 516*	**276**	93	114	*207*	*69*
Netherlands	**619**	104	364	*468*	*151*	**7 175**	651	4 529	*5 180*	*1 995*	**188**	24	106	*130*	*57*
Czech Republic	**461**	157	207	*364*	*96*	**11 918**	2 421	6 505	*8 925*	*2 993*	**152**	42	67	*109*	*43*
Belg/Lux	**326**	13	214	*226*	*99*	**3 522**	191	2 276	*2 467*	*1 055*	**146**	5	92	*97*	*49*
Austria	**308**	73	160	*233*	*75*	**3 824**	799	2 094	*2 892*	*931*	**119**	25	61	*86*	*34*
Norway	**266**	23	159	*182*	*84*	**1 615**	196	830	*1 025*	*590*	**99**	8	54	*62*	*37*
Finland	**261**	64	138	*202*	*60*	**3 261**	649	1 833	*2 481*	*779*	**114**	22	60	*82*	*32*
Switzerland	**251**	22	129	*151*	*100*	**2 018**	190	1 012	*1 201*	*816*	**50**	4	24	*28*	*22*
Hungary	**220**	63	111	*173*	*47*	**8 151**	1 595	4 601	*6 196*	*1 955*	**80**	15	39	*53*	*27*
Romania	**175**	43	83	*127*	*48*	**8 685**	1 487	4 547	*6 035*	*2 650*	**44**	8	20	*28*	*16*
Bulgaria	**173**	23	114	*137*	*36*	**14 616**	2 293	9 485	*11 778*	*2 839*	**51**	5	30	*34*	*17*
Greece	**154**	40	82	*122*	*32*	**3 887**	710	2 280	*2 990*	*897*	**54**	12	28	*40*	*14*
Portugal	**134**	26	66	*92*	*42*	**3 772**	507	2 059	*2 566*	*1 206*	**47**	7	22	*29*	*18*
Denmark	**127**	13	73	*86*	*41*	**1 473**	151	852	*1 003*	*469*	**56**	4	31	*36*	*20*
Slovak Republic	**123**	20	70	*91*	*33*	**3 822**	876	2 025	*2 901*	*922*	**41**	7	21	*27*	*13*
Croatia	**85**	33	34	*67*	*19*	**2 823**	702	1 367	*2 069*	*754*	**28**	8	11	*18*	*10*
Latvia	**81**	24	37	*61*	*21*	**2 876**	739	1 383	*2 122*	*754*	**24**	5	10	*15*	*9*
Lithuania	**81**	23	41	*63*	*17*	**2 628**	641	1 377	*2 018*	*610*	**20**	5	9	*14*	*6*
Estonia	**43**	12	21	*33*	*10*	**1 245**	358	583	*941*	*305*	**15**	4	6	*10*	*5*
Slovenia	**22**	1	13	*14*	*8*	**578**	18	349	*367*	*211*	**9**	0	5	*5*	*4*
Cyprus	**13**	2	7	*9*	*4*	**316**	66	162	*228*	*88*	**4**	0	2	*3*	*2*
Malta	**5**	0	3	*3*	*2*	**93**	8	53	*61*	*32*	**1**	0	1	*1*	*1*
EU+	**29 725**	**9 268**	**13 942**	***23 211***	***6 514***	**426 777**	**61 355**	**257 710**	***319 065***	***107 712***	**11 097**	**3 027**	**5 057**	***8 084***	***3 012***

Source: IHS (2021).

Table 7: Economic effects of spirits consumption in the EU+ (here: off-premise, i.e. retail) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*
Germany	**1 128**	529	327	*856*	*273*	**24 914**	16 153	4 747	*20 900*	*4 014*	**428**	186	113	*300*	*129*
United Kingdom	**1 039**	471	302	*773*	*265*	**18 741**	11 706	3 905	*15 611*	*3 129*	**363**	148	97	*245*	*118*
France	**994**	421	320	*741*	*253*	**18 668**	11 510	3 971	*15 480*	*3 188*	**442**	157	140	*297*	*145*
Poland	**426**	244	117	*360*	*66*	**19 277**	12 789	3 979	*16 768*	*2 509*	**132**	67	34	*101*	*31*
Spain	**288**	121	83	*204*	*83*	**8 217**	5 250	1 505	*6 755*	*1 461*	**100**	37	27	*64*	*36*
Italy	**251**	94	86	*180*	*71*	**4 348**	1 929	1 280	*3 210*	*1 138*	**95**	33	30	*63*	*32*
Netherlands	**193**	96	56	*152*	*41*	**4 620**	3 297	782	*4 079*	*541*	**55**	23	15	*39*	*16*
Czech Republic	**128**	59	44	*102*	*26*	**5 655**	3 475	1 366	*4 840*	*815*	**44**	18	14	*32*	*12*
Belg/Lux	**119**	46	44	*90*	*29*	**1 814**	1 019	478	*1 497*	*317*	**51**	18	18	*36*	*15*
Romania	**113**	40	43	*84*	*29*	**7 925**	4 526	1 783	*6 309*	*1 616*	**33**	12	10	*22*	*11*
Switzerland	**109**	39	35	*75*	*34*	**1 190**	624	276	*900*	*290*	**21**	7	6	*13*	*8*
Denmark	**102**	48	34	*82*	*20*	**2 139**	1 488	422	*1 910*	*229*	**40**	16	12	*29*	*11*
Hungary	**100**	51	29	*81*	*19*	**6 293**	4 315	1 177	*5 492*	*801*	**38**	17	10	*26*	*12*
Sweden	**96**	45	28	*73*	*23*	**1 323**	803	279	*1 081*	*242*	**37**	16	10	*26*	*11*
Slovak Republic	**89**	47	26	*73*	*16*	**3 756**	2 552	774	*3 326*	*430*	**29**	14	8	*22*	*7*
Austria	**84**	35	28	*64*	*20*	**1 527**	922	355	*1 277*	*250*	**32**	13	10	*23*	*9*
Bulgaria	**83**	44	24	*68*	*15*	**9 378**	6 666	1 528	*8 195*	*1 183*	**22**	9	6	*15*	*7*
Ireland	**74**	38	19	*58*	*16*	**1 354**	1 033	180	*1 213*	*141*	**19**	9	4	*13*	*5*
Latvia	**72**	36	21	*57*	*15*	**3 765**	2 529	677	*3 206*	*559*	**20**	8	5	*13*	*7*
Norway	**66**	24	21	*46*	*20*	**835**	544	144	*688*	*147*	**27**	9	7	*17*	*10*
Finland	**64**	30	20	*50*	*14*	**1 186**	742	263	*1 005*	*181*	**27**	11	8	*19*	*8*
Portugal	**55**	26	14	*41*	*15*	**2 057**	1 252	392	*1 643*	*414*	**19**	8	4	*12*	*7*
Lithuania	**50**	31	10	*41*	*9*	**2 122**	1 500	303	*1 803*	*319*	**12**	6	2	*8*	*3*
Greece	**46**	21	15	*36*	*10*	**2 269**	1 714	261	*1 976*	*294*	**16**	7	4	*11*	*5*
Estonia	**35**	18	12	*29*	*6*	**1 734**	1 227	325	*1 552*	*182*	**11**	4	3	*7*	*3*
Croatia	**33**	16	9	*25*	*8*	**2 034**	1 359	364	*1 723*	*311*	**12**	5	3	*8*	*4*
Slovenia	**13**	5	4	*9*	*3*	**381**	190	106	*296*	*85*	**5**	2	1	*3*	*2*
Cyprus 2	**11**	6	3	*9*	*2*	**373**	265	48	*312*	*61*	**3**	1	1	*2*	*1*
Malta	**6**	4	1	*5*	*1*	**175**	137	21	*158*	*17*	**2**	1	0	*1*	*0*
EU+	**5 866**	**2 687**	**1 774**	***4 461***	***1 404***	**158 071**	**101 516**	**31 690**	***133 207***	***24 864***	**2 132**	**863**	**604**	***1 467***	***665***

Source: IHS (2021).

Table 8: Economic effects of spirits consumption in the EU+ (here: <u>on-premise, i.e. catering</u>) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*	**overall**	direct	indirect	*dir. + ind.*	*induced*
United Kingdom	**5 434**	2 647	1 404	*4 051*	*1 383*	**108 430**	73 165	18 982	*92 147*	*16 283*	**1 730**	670	439	*1 110*	*620*
Spain	**3 975**	2 409	710	*3 118*	*856*	**79 682**	51 626	13 209	*64 835*	*14 848*	**1 282**	687	219	*905*	*376*
Italy	**2 453**	1 251	612	*1 863*	*590*	**50 862**	32 464	8 977	*41 442*	*9 420*	**889**	409	206	*615*	*274*
Germany	**2 180**	938	581	*1 519*	*661*	**56 294**	38 010	8 680	*46 689*	*9 605*	**816**	311	201	*512*	*304*
France	**1 986**	983	509	*1 493*	*494*	**33 184**	20 555	6 456	*27 011*	*6 174*	**914**	406	225	*631*	*283*
Poland	**755**	378	216	*594*	*160*	**41 909**	28 606	7 165	*35 771*	*6 137*	**236**	101	62	*163*	*74*
Netherlands	**683**	330	206	*536*	*146*	**15 660**	10 851	2 866	*13 717*	*1 943*	**191**	78	55	*133*	*58*
Switzerland	**666**	303	174	*477*	*189*	**9 999**	7 051	1 315	*8 366*	*1 633*	**121**	45	32	*77*	*44*
Greece	**648**	368	185	*554*	*94*	**18 387**	11 760	3 912	*15 672*	*2 715*	**184**	91	52	*143*	*41*
Czech Republic	**617**	337	169	*506*	*111*	**28 856**	20 430	4 990	*25 420*	*3 436*	**194**	91	50	*141*	*53*
Austria	**612**	384	127	*511*	*101*	**9 399**	6 587	1 546	*8 133*	*1 266*	**217**	125	44	*169*	*48*
Portugal	**595**	333	125	*458*	*137*	**17 618**	10 631	3 134	*13 765*	*3 853*	**185**	87	36	*123*	*62*
Ireland	**518**	325	83	*408*	*110*	**13 533**	11 781	745	*12 526*	*1 007*	**149**	90	18	*107*	*42*
Belg/Lux	**488**	224	147	*371*	*117*	**7 365**	4 510	1 589	*6 099*	*1 266*	**197**	77	60	*137*	*61*
Romania	**478**	259	111	*370*	*108*	**27 507**	16 159	5 365	*21 523*	*5 984*	**110**	44	28	*72*	*38*
Bulgaria	**431**	244	86	*330*	*101*	**51 241**	37 282	6 064	*43 346*	*7 895*	**117**	48	19	*67*	*50*
Hungary	**302**	147	90	*237*	*65*	**19 587**	13 434	3 475	*16 909*	*2 678*	**115**	47	27	*74*	*41*
Slovak Republic	**258**	144	62	*206*	*52*	**16 040**	12 692	1 920	*14 612*	*1 428*	**86**	44	18	*63*	*23*
Denmark	**245**	116	75	*190*	*55*	**5 244**	3 738	880	*4 618*	*626*	**94**	37	27	*64*	*30*
Croatia	**194**	117	32	*149*	*45*	**8 590**	5 612	1 183	*6 795*	*1 794*	**61**	26	10	*36*	*24*
Sweden	**159**	53	55	*108*	*52*	**2 356**	1 267	560	*1 827*	*530*	**61**	18	20	*38*	*24*
Norway	**159**	48	53	*101*	*57*	**1 582**	915	286	*1 201*	*381*	**59**	16	17	*33*	*26*
Cyprus	**135**	79	31	*110*	*25*	**4 460**	3 183	644	*3 827*	*633*	**35**	13	9	*23*	*13*
Finland	**115**	48	38	*86*	*29*	**2 161**	1 296	488	*1 783*	*377*	**47**	17	15	*31*	*16*
Slovenia	**79**	40	20	*60*	*19*	**2 807**	1 785	509	*2 294*	*512*	**27**	11	7	*18*	*10*
Latvia	**77**	38	19	*57*	*20*	**3 898**	2 532	644	*3 176*	*722*	**21**	8	5	*12*	*9*
Lithuania	**69**	40	14	*53*	*16*	**3 337**	2 355	431	*2 786*	*551*	**18**	9	3	*12*	*6*
Malta	**43**	25	12	*37*	*6*	**1 039**	646	271	*917*	*122*	**12**	6	3	*9*	*3*
Estonia	**39**	19	11	*31*	*8*	**1 925**	1 380	296	*1 676*	*249*	**12**	5	3	*8*	*4*
EU+	**24 394**	**12 628**	**5 959**	***18 587***	***5 807***	**642 952**	**432 303**	**106 581**	***538 884***	***104 069***	**8 181**	**3 616**	**1 908**	***5 524***	***2 656***

Source: IHS (2021).

4.2 Results for spirits tourism

In this section we present the economic effects of spirits-related tourism on the four selected countries. Although the effects of spirits tourism are not exclusively limited to the respective region, by far the largest proportion can be attributed to the region in question. We will therefore only present the effects of spirits tourism within the defined regions in the United Kingdom, Ireland, France and Spain (see section 2.4).

Table 9 provides an overview of the economic effects of spirits tourism on the aforementioned countries. Unsurprisingly, the greatest economic impact can be attributed to the United Kingdom, as Scotch whisky attracted the largest number of tourists of the analysed regions. In 2019, spirits-related tourism led to an overall gross value added (GVA) of 217.8 million Euros in the UK. The lion's share of 165.2 million Euros is directly (87.3 million Euros) or indirectly (77.9 million Euros) linked to the expenditure of spirits tourists, such as expenses for accommodation, catering, transport, shopping and, of course, spirits-related activities. In all cases, induced effects made out a small proportion of the overall results compared to direct and indirect effects. Contrary to the direct and indirect results, induced effects are triggered not by the spending behaviour of tourists but by that of employees whose jobs have been supported by spirits tourism. Ireland and the UK share a similar pattern with large direct GVA effects (50.6 million Euros), followed by indirect effects (19.1 million Euros) and relatively small induced effects. In contrast, indirect effects made the largest contribution to overall gross value added in France (16.6 of 37.9 million Euros) and Spain (12.9 of 32.1 million Euros). The relation between direct, indirect and induced GVA effects is graphically depicted in Figure 22.

Scotch whisky tourism supported a total of 3,331 jobs, almost half of which are attributed to direct expenses of tourists (1,611). In comparison, this direct employment effect would account for 11 % of jobs directly supported by spirits production. Another 1,101 jobs can be added along the value chain (indirect effects), while 620 are induced by employees who spend their income on goods and services. Jobs linked to direct expenses in Ireland (1,007) would account for an astounding 37 % of direct spirits employment at the production site, but would remain under 10 % in France and Spain, as spirits tourism is associated with modest effects in comparison to the overall economic effects of their respective spirits sector. In total, spirits tourism supported 1,253 jobs in Ireland, 567 in France and 619 in Spain. In France and Spain, the largest proportion was again triggered by indirect effects along the value chains (see Figure 23). The disparities in the ratio of direct, indirect and induced effects can be traced back to the different economic interdependencies in and between countries.

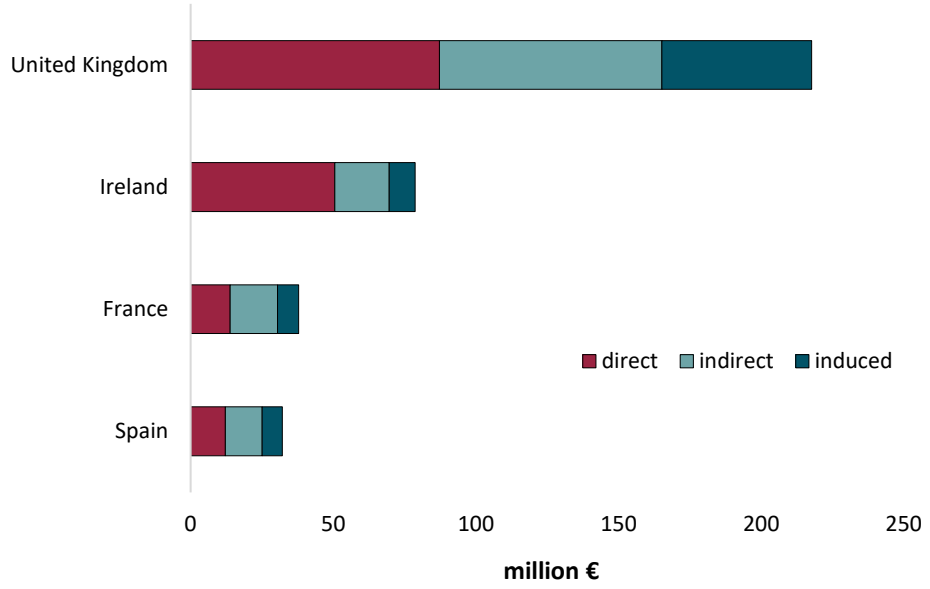
Compared to gross value added, we measured relatively small fiscal effects. In 2019, the fiscal effects amounted to 80.9 million Euros in the UK, 23.2 million Euros in Ireland, 19.7 million Euros in France and 11.5 million Euros in Spain.

Table 9: Economic effects of spirits tourism 2019

	overall	direct	indirect	*dir. + indir.*	induced
Gross value added (GVA, mill. €)					
United Kingdom	**217.8**	87.3	77.9	*165.2*	52.6
Ireland	**78.8**	50.6	19.1	*69.7*	9.1
France	**37.9**	13.9	16.6	*30.5*	7.4
Spain	**32.1**	12.2	12.9	*25.1*	7.1
Employment (jobs per year)					
United Kingdom	**3 331**	1 611	1 101	*2 712*	620
Ireland	**1 253**	1 007	150	*1 158*	95
France	**567**	227	247	*474*	93
Spain	**619**	241	256	*497*	122
Fiscal effects (mill. €)					
United Kingdom	**80.9**	31.5	25.6	*57.0*	23.9
Ireland	**23.2**	15.0	4.2	*19.2*	4.0
France	**19.7**	7.4	7.9	*15.3*	4.4
Spain	**11.5**	4.3	4.2	*8.5*	3.1

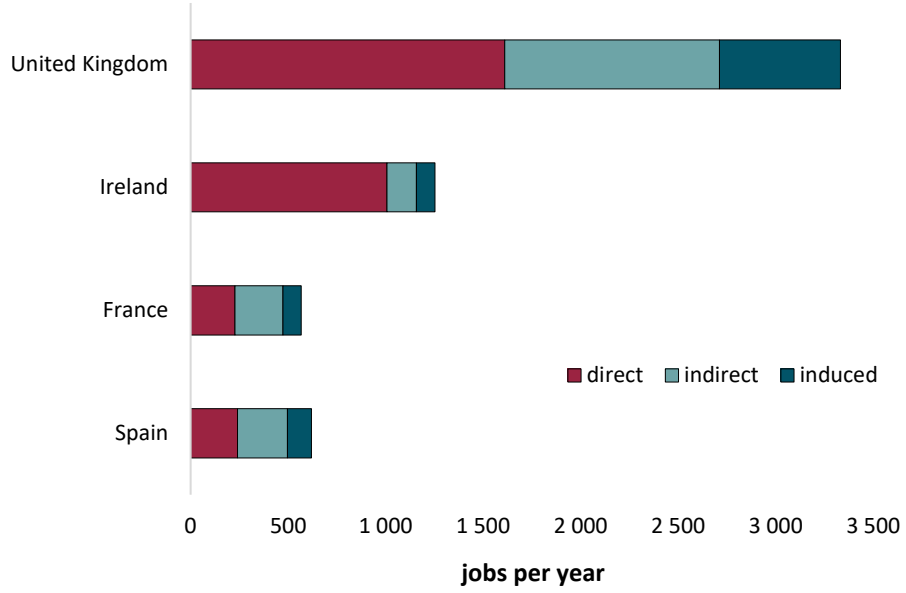
Source: IHS (2021).

Figure 22: Direct, indirect and induced GVA effects of spirits tourism 2019



Source: IHS (2021).

Figure 23: Direct, indirect and induced employment effects of spirits tourism 2019



Source: IHS (2021).

Table 10 shows the sectoral distribution of the effects of spirits tourism. The table displays the top five sectors in terms of employment with the corresponding GVA and fiscal effects. While the respective ranks match in some cases, others differ from each other. Overall, we found "accommodation and food services" to be the sector that profits most from spirits tourism with a total of 2,271 supported jobs, 77.4 million Euros gross value added and 22.1 million Euros fiscal effects in all four countries combined. The sector "food products, beverages and tobacco" is also an important profiteer (622 jobs in total). In accordance with the NACE code, all expenses of tourists for spirits-related activities in distilleries, bodegas or Cognac houses fall into this category. The NACE code classifies economic sectors according to their principal business activity, so taking a guided tour through a distillery would also be included in the foods and beverages sector. Another important sector is "wholesale and retail trade" due to the inclusion of car rentals and the repair of motor vehicles (648 jobs in total).

Table 10: Sectoral effects of spirits tourism 2019

	rank (jobs)	rank (GVA)	rank (fiscal)	Sector	jobs p.a.	GVA (mill. €)	fiscal effects
United Kingdom	1.	1.	1.	Accommodation and food services	1 113	40.3	10.7
	2.	3.	3.	Wholesale and retail trade; repair of motor vehicles	410	23.3	6.0
	3.	2.	2.	Food products, beverages and tobacco	358	34.8	9.7
	4.	4.	4.	Other business sector services	331	19.8	5.4
	5.	7.	5.	Human health and social work	201	9.6	2.6
				sum of remaining sectors	919	90.0	23.6
				overall	**3 331**	**217.8**	**58.0**
Ireland	1.	2.	1.	Accommodation and food services	889	24.5	7.0
	2.	1.	2.	Food products, beverages and tobacco	70	27.6	5.2
	3.	8.	6.	Arts, entertainment, recreation and other service activities	58	2.3	0.5
	4.	4.	4.	Wholesale and retail trade; repair of motor vehicles	47	2.9	0.7
	5.	7.	3.	Human health and social work	45	2.4	0.7
				sum of remaining sectors	145	19.1	3.6
				overall	**1 253**	**78.8**	**17.7**
France	1.	1.	1.	Food products, beverages and tobacco	127	9.2	4.1
	2.	3.	2.	Accommodation and food services	94	4.5	2.0
	3.	2.	3.	Wholesale and retail trade; repair of motor vehicles	84	5.0	2.0
	4.	5.	5.	Agriculture, forestry and fishing	58	2.8	1.4
	5.	4.	4.	Other business sector services	48	3.4	1.5
				sum of remaining sectors	156	13.1	5.2
				overall	**567**	**37.9**	**16.2**
Spain	1.	1.	1.	Accommodation and food services	175	8.1	2.4
	2.	3.	3.	Wholesale and retail trade; repair of motor vehicles	107	3.9	1.2
	3.	2.	2.	Food products, beverages and tobacco	67	4.5	1.3
	4.	4.	4.	Agriculture, forestry and fishing	54	2.1	0.6
	5.	6.	5.	Other business sector services	47	1.7	0.5
				sum of remaining sectors	170	11.8	3.1
				overall	**619**	**32.1**	**9.2**

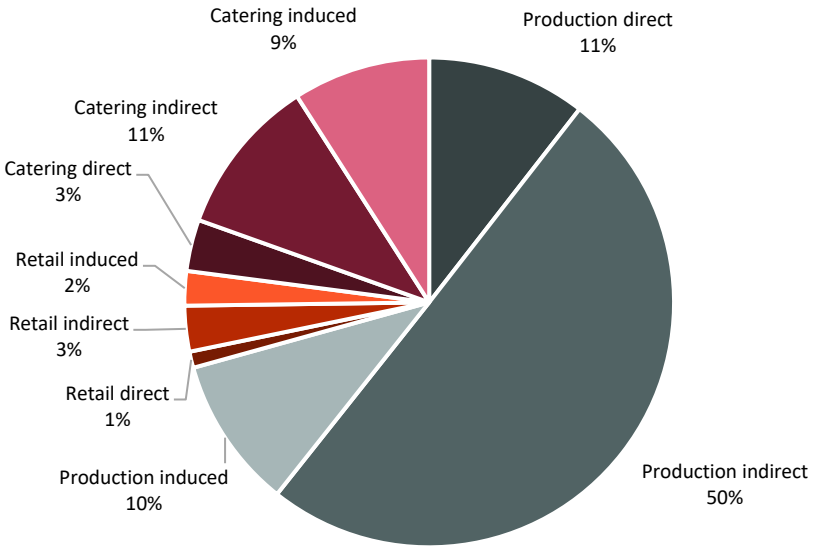
Source: IHS (2021).

4.3 Environmental results

Any kind of economic activity produces some kind of economic footprint. We will in the following interpret this "footprint" as the amount of greenhouse gases (GHG) released into the atmosphere and the amount of land reserved for agricultural activities related to spirits. The former will be measured in tonnes of CO_2 equivalents (hence combining the effects of CO_2, methane and other greenhouse gases); the latter will be reported in hectares of land use.

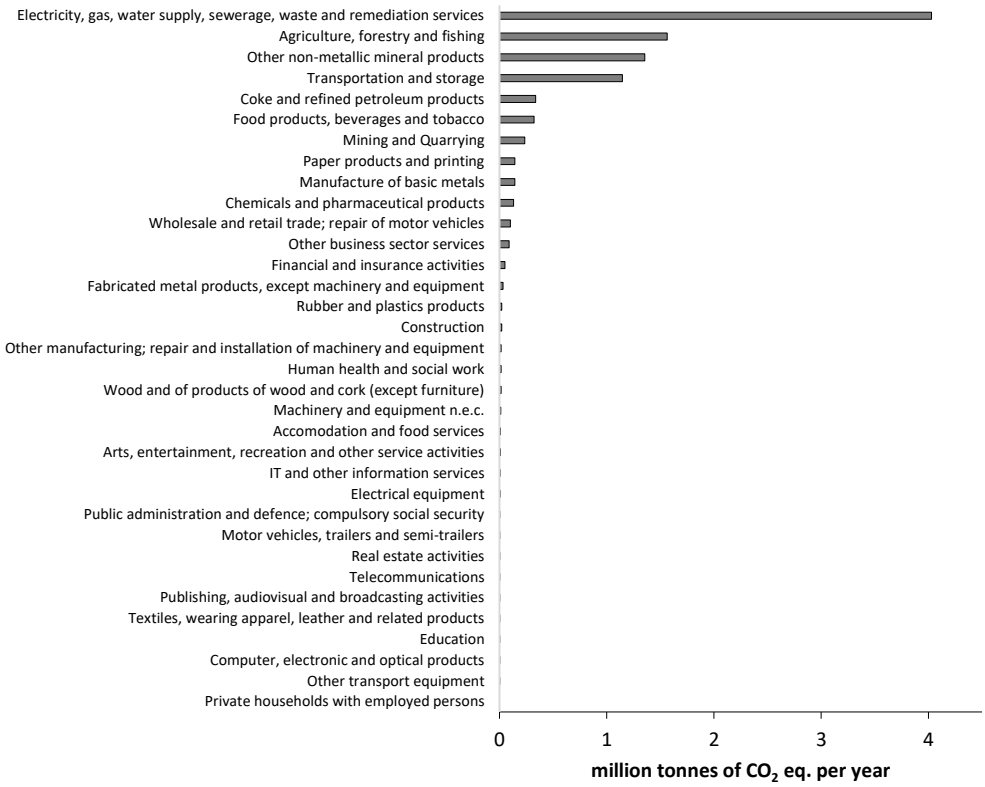
Overall, we estimate spirits production and consumption in the EU+ to be responsible for about 19.6 million tonnes of CO_2 equivalents in the EU+; this roughly equals the GHG emissions of Lithuania (see Eurostat (2020c)). Figure 24 presents the activities that those emissions come from. Not surprisingly, the production activities produce more GHG emissions than retail and catering. About 11 % come directly from distilleries. Half of the overall emissions, however, come from indirect production activities. The emissions of indirect spirits production activities by industry are presented in Figure 25. The largest driver of spirits-related emissions is energy, but other sectors (such as agriculture, the transport sector and several manufacturing activities that deliver intermediate products) also produce considerable amounts of CO_2 eq.

Figure 24: CO_2 equivalent emissions by type of activity



Source: IHS (2021).

Figure 25: CO_2 eq. emissions by industry (indirect production related emissions only)

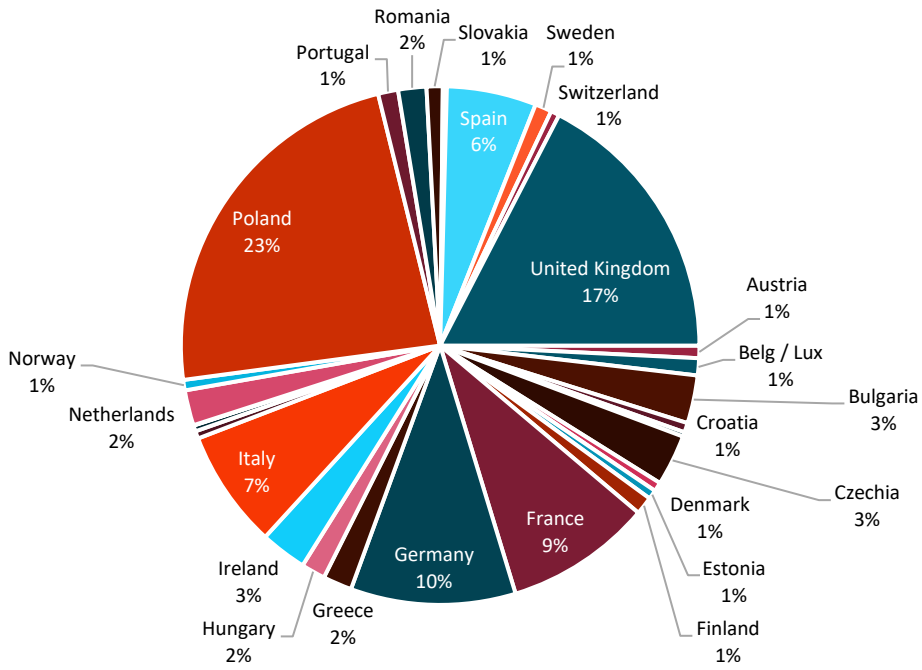


Source: IHS (2021).

Figure 26 presents the distribution of CO_2 equivalents by country. As we have already seen that production activities entail the largest emissions, we would expect those countries that produce large amounts of spirits (e. g. United Kingdom, France, Italy etc.; see section 2.2) would report the largest GHG emissions. However, even though the UK is by far the largest producer, we see Poland being the largest polluter. This reflects differences both in countries' production technologies as well as in environmental regulations. Figure 27 below displays the relationship between employment related directly or indirectly to spirits production and GHG emissions resulting from direct and indirect spirits production activities. It shows on the horizontal axis that Poland ranks first in terms of direct and indirect spirits employment, even though it came in fifth in terms of production GVA (check Table 6 to confirm). This effect must be explained by Poland being less productive than, e. g., the United Kingdom. British workers make pricey Scotch whisky while Polish workers produce the much cheaper vodka. However, CO_2 emissions will take place, no matter what the price of the final product is. On top of that, Poland deploys an unfavorable energy mix producing more CO_2 than countries with higher shares of renewable energy. Therefore, direct and indirect spirits production activities emit more CO_2 equivalents in Poland than anywhere else in the EU+ (see vertical axis). Like in most countries, most spirits-related emissions do not come directly

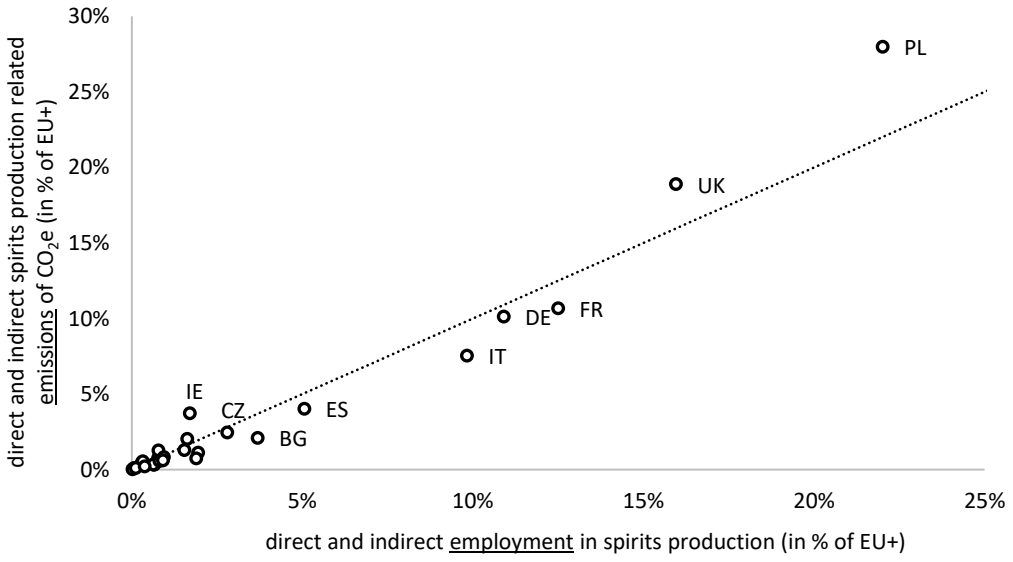
from spirits manufacturers but from indirect production activities (in Poland: 70 %; EU+: 50 % (see Figure 24)).

Figure 26: CO_2 equivalent emissions by country



Source: IHS (2021).

Figure 27: Relationship between direct and indirect spirits production employment and related GHG emissions



Source: IHS (2021).

The environmental results are summarised in Table 11. As we have already shown in Figure 24 that production activities are accountable for most ecological effects, we show the environmental results for production only in Table 12.

Note that direct land use is zero by definition as we consider only the utilised agricultural area (see section 2.5). Hence, land use can only result in an indirect manner from spirits production and in an induced manner when employees in spirits-related industries spend a share of their income on agricultural products. In total, about 8,500 square kilometres are used for agricultural activities remotely related to spirits. The lion's share (about 5,850 square kilometres, see Table 12) is used for crops like barley, potatoes, grapes etc. delivered directly to spirits producers; this would be a land area more than twice the size of Luxembourg.

Table 11: Environmental effects of spirits in the EU+ (including production, on- and off-trade consumption)

	CO_2 equivalents (in 1,000 tonnes)					Land use (in hectares)				
	overall	direct	indirect	*dir.+ind.*	*induced*	**overall**	direct	indirect	*dir.+ind.*	*induced*
Poland	**4 558**	234	3 585	*3 819*	739	**175 416**	0	152 842	*152 842*	22 575
UK	**3 410**	1 096	1 687	*2 783*	627	**121 389**	0	86 873	*86 873*	34 516
Germany	**2 015**	239	1 304	*1 543*	472	**48 046**	0	38 718	*38 718*	9 328
France	**1 792**	391	1 090	*1 481*	311	**132 698**	0	105 517	*105 517*	27 181
Italy	**1 446**	245	889	*1 134*	312	**40 534**	0	29 126	*29 126*	11 408
Spain	**1 095**	77	667	*743*	352	**58 779**	0	31 356	*31 356*	27 423
Czechia	**624**	54	405	*459*	165	**27 306**	0	19 807	*19 807*	7 499
Bulgaria	**586**	35	374	*409*	177	**32 481**	0	18 160	*18 160*	14 321
Ireland	**566**	134	361	*494*	72	**7 873**	0	4 234	*4 234*	3 639
Netherlands	**431**	64	265	*329*	102	**7 343**	0	5 255	*5 255*	2 089
Greece	**354**	21	255	*276*	79	**6 785**	0	3 243	*3 243*	3 542
Romania	**344**	24	191	*215*	130	**24 247**	0	9 759	*9 759*	14 489
Hungary	**294**	48	174	*223*	72	**25 229**	0	17 414	*17 414*	7 815
Portugal	**244**	40	127	*167*	77	**6 740**	0	2 616	*2 616*	4 124
Finland	**219**	9	170	*179*	40	**30 232**	0	25 193	*25 193*	5 039
Belg/Lux	**209**	29	120	*149*	60	**3 999**	0	2 860	*2 860*	1 139
Sweden	**204**	43	125	*168*	36	**19 101**	0	15 778	*15 778*	3 324
Slovakia	**198**	36	103	*140*	58	**17 174**	0	11 360	*11 360*	5 814
Austria	**152**	23	86	*110*	43	**6 189**	0	4 234	*4 234*	1 955
Norway	**127**	5	81	*86*	41	**6 888**	0	5 260	*5 260*	1 627
Croatia	**116**	11	63	*74*	42	**5 671**	0	2 205	*2 205*	3 466
Estonia	**112**	11	72	*83*	29	**9 452**	0	6 189	*6 189*	3 263
Denmark	**111**	10	71	*81*	31	**8 820**	0	7 149	*7 149*	1 671
Switzerland	**107**	22	52	*74*	33	**1 911**	0	971	*971*	939
Latvia	**92**	13	51	*63*	28	**12 195**	0	6 528	*6 528*	5 667
Lithuania	**72**	8	42	*51*	21	**10 779**	0	6 486	*6 486*	4 292
Cyprus	**55**	6	30	*37*	18	**896**	0	346	*346*	550
Slovenia	**49**	8	23	*32*	17	**1 312**	0	587	*587*	724
Malta	**5**	1	3	*4*	1	**38**	0	24	*24*	14
EU+	**19 590**	2 938	12 466	*15 404*	4 186	**849 523**	0	620 089	*620 089*	229 434

Source: IHS (2021).

Table 12: Environmental effects of spirits in the EU+ (only production)

	CO_2 equivalents (in 1,000 tonnes)					Land use (in hectares)				
	overall	direct	indirect	*dir.+ind.*	*induced*	**overall**	direct	indirect	*dir.+ind.*	*induced*
Poland	**3 802**	133	3 191	*3 324*	479	**164 412**	0	150 006	*150 006*	14 406
UK	**2 559**	916	1 329	*2 245*	314	**101 377**	0	84 641	*84 641*	16 737
France	**1 440**	305	964	*1 268*	171	**117 583**	0	102 627	*102 627*	14 956
Germany	**1 430**	130	1 072	*1 202*	228	**41 166**	0	36 785	*36 785*	4 381
Italy	**1 067**	176	719	*895*	171	**33 743**	0	27 726	*27 726*	6 017
Spain	**587**	49	428	*477*	110	**35 555**	0	27 197	*27 197*	8 358
Ireland	**479**	107	335	*442*	37	**5 815**	0	4 019	*4 019*	1 795
Czechia	**359**	47	244	*290*	68	**20 393**	0	17 507	*17 507*	2 886
Bulgaria	**291**	12	237	*249*	42	**19 386**	0	16 019	*16 019*	3 367
Netherlands	**287**	32	208	*241*	46	**5 392**	0	4 447	*4 447*	945
Sweden	**175**	41	111	*152*	23	**17 009**	0	14 926	*14 926*	2 083
Finland	**173**	5	145	*150*	23	**26 371**	0	23 542	*23 542*	2 829
Hungary	**157**	24	108	*132*	25	**18 558**	0	16 016	*16 016*	2 543
Romania	**121**	6	81	*87*	33	**10 489**	0	6 990	*6 990*	3 499
Greece	**116**	5	92	*97*	19	**3 795**	0	2 860	*2 860*	935
Belg/Lux	**114**	4	85	*89*	25	**3 071**	0	2 601	*2 601*	470
Slovakia	**92**	13	59	*72*	20	**11 042**	0	9 220	*9 220*	1 822
Austria	**89**	13	59	*72*	17	**4 465**	0	3 727	*3 727*	738
Norway	**86**	3	62	*65*	21	**5 879**	0	5 049	*5 049*	830
Portugal	**83**	7	59	*66*	18	**2 749**	0	1 845	*1 845*	904
Denmark	**67**	4	51	*55*	12	**7 615**	0	6 935	*6 935*	680
Estonia	**66**	7	47	*54*	12	**6 826**	0	5 485	*5 485*	1 341
Latvia	**52**	7	34	*41*	11	**7 548**	0	5 443	*5 443*	2 105
Croatia	**48**	7	31	*37*	11	**2 842**	0	1 931	*1 931*	911
Lithuania	**48**	6	34	*40*	9	**7 773**	0	6 057	*6 057*	1 716
Switzerland	**34**	2	22	*24*	10	**981**	0	710	*710*	271
Slovenia	**14**	0	10	*10*	4	**632**	0	444	*444*	188
Cyprus	**12**	1	10	*10*	2	**385**	0	310	*310*	74
Malta	**1**	0	0	*0*	0	**25**	0	22	*22*	3
EU+	**13 849**	2 061	9 825	*11 887*	1 963	**682 877**	0	585 086	*585 086*	97 791

Source: IHS (2021).

If we relate our results to the sold spirits volumes (as reported by IWSR), we conclude that the production of one litre of spirits in the EU+ causes on average 3.68 kg CO_2 eq.[61] This outcome is similar to the life cycle analysis of whisky in North America, which estimates (according to a baseline scenario) a carbon footprint of 2.75 kg CO_2 eq. per 750 ml bottle (BIER 2012a: 8) or 3.66 kg CO_2 eq. per litre of whisky. The average consumption of spirits in the EU+ amounts to 5.9 litres per capita in 2019 according to our calculations based on IWSR (2021). This means that the average yearly consumption of spirits per inhabitant in the EU+ is responsible for 21.5 kg CO_2 eq.

Those results are only interesting when compared to other goods. It should be noted, however, that the use of different approaches complicates comparisons of results across studies and sectors. Therefore, the following comparisons merely provide an orientation for the classification of results.

[61] Referring to direct and indirect emissions effects. GHG emissions covered (see Point 2.5).

The CO_2 emissions for the production of one litre of *beer* are considerably lower than for spirits. BIER (2012b) estimates that one produced litre of European beer generates 0.42 kg CO_2 eq. Amienyo and Azapagic (2016) find for the UK that one litre of beer emits between 0.51 and 0.84 kg CO_2 eq., depending, inter alia, on the type of packaging. Including the contribution of refrigeration at retailers, these numbers rise to 0.61 and 0.88 kg CO_2 eq., respectively. According to The Brewers of Europe (2020), the yearly per capita consumption of beer varies considerably between countries in Europe and amounts to 33 litres in France and 141 litres in Czechia; with an assumed average of 70 litres of consumed beer per capita and the BIER (2012b) estimate of 0.42 kg CO_2 eq. per litre, European beer consumption generates 29.4 kg CO_2 eq. per head and year.

An LCA of Italian dark *chocolate* (Recanati et al. 2018) shows that 2.6 kg CO_2 eq. are emitted per kilogram of chocolate along the whole life cycle chain, i. e. from the cocoa cultivation to the packaging waste transportation to the collection site. As cultivation of cocoa takes place outside Europe, the relevant ecological effect concerns the production of chocolate packaging and the core phase (transportation of cocoa beans and other inputs to the production plant in northern Italy, the manufacturing and packaging of chocolate and waste transportation). The impact of this phase is even lower. It amounts to 1.37 kg CO_2 eq. per kilogram of dark chocolate. The average chocolate consumption in Europe accounts for 5 kg per capita in 2018 (CBI 2020). Thus, the average annual per capita consumption of Europeans results in 6.85 kg CO_2 eq. for the production of packaging and the core phase of chocolate production.

Other food products like *meat* have higher environmental footprints than spirits in Europe. Especially beef and sheep meat cause high GHG emissions. According to a life cycle assessment with three scenarios of the EU27 livestock sector (Weis and Leip 2012: 127) the production of one kilogram of beef results in 21-28 kg CO_2 eq. and of sheep and goat meat in 19-28 kg CO_2 eq. Lower emissions are caused by the production of pork (7-10 kg CO_2 eq./kg) and of poultry (5-7 kg CO_2 eq./kg). Data refer to 2004; the average annual per-capita meat consumption in the EU28 in 2004 was 12.1 kg of beef, 32.6 kg of pork and 19.2 kg of poultry according to “Our world in data” (2021) based on OECD data (OECD 2018). Consequently, the GHG-emissions caused by the average annual meat consumption per inhabitant in the EU28 ranges from 254 to 339 kg CO_2 eq. for beef, 228 to 326 kg CO_2 eq. for pork and 96 to 135 kg CO_2 eq. for poultry.

Thus, the ecological footprint of spirits production and consumption is somewhat higher compared to some other luxury food such as chocolate, but lower than the production and consumption of meat. As spirits are consumed in rather small quantities, their overall environmental footprint will be lower than for many other foodstuffs.

5 Conclusion

The production and consumption of spirits beverages have a long tradition in Europe. Prestigious drinks like Scotch whisky or Cognac are produced here and delivered to all parts of the world. The European Union defines and protects 44 categories of spirits drinks and about 240 geographical indications. Studies in the past have estimated that the sector provides for about one million jobs in Europe (see, e. g., European Commission[62] or Ernst & Young (2010)).

The economic impact of spirits in terms of production, distribution and consumption are considerable throughout the EU+. Not only do they provide employment and value added in, e. g., distilleries, they also have an impact on up- and downstream industries. In contrast to other industries, spirits production is characterised by rather local supply chains. The aim of the study at hand was to estimate the effects of the spirits sector on employment, gross value added (GVA) and fiscal effects in every EU+ country by means of a multiregional input-output model. In addition, it also investigated spirits-related tourism effects and the ecological footprint of the sector.

We find that the production and consumption of spirits were responsible for almost 60 billion Euros in gross value added in 2019. This was about 0.4 % of the total GVA in the EU+ and would be more than twice the overall gross value added of Latvia. All in all, spirits support 1.2 million jobs in the EU+ which is about 0.5 % of the overall EU+ employment and almost approaches the size of the entire work force of Lithuania. The largest effects came not from spirits production but from consumption, especially from the catering (off-premise) sector. Governments collected spirits-related taxes and duties of about 46.8 billion Euros which is more than a quarter of the annual EU budget. Roughly half of it came from income, profit and other taxes on economic activity all across the value-added chains; the other half came directly from VAT and excise duty imposed on spirits beverages sold in Europe. About 20 million tonnes of CO_2 equivalents are linked to spirits production and consumption in the EU+; this is about 0.6 % of what the EU+ emits total and would be slightly less than the overall CO_2 eq. emissions of Lithuania. A land area more than twice the size of Luxembourg is used for agricultural production related to spirits.

It has already become obvious that COVID-19 has had a massive impact on the numbers presented in this study for the pre-COVID year 2019. The quantitative impact will be subject to a follow-up study.

[62] https://ec.europa.eu/info/food-farming-fisheries/plants-and-plant-products/plant-products/spirits_en

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7 Appendix A: Analyses for individual categories or geographical indications

7.1 Whisk(e)y (including Scotch whisky & Irish whiskey)

7.1.1 Descriptives about whisk(e)y production and consumption

One of the main categories produced in Europe is whisky or whisk*e*y. As in the main study above, we use the Scottish notation "whisky" as it clearly dominates in Europe in terms of production (which is why it is dedicated an analysis of its own in section 2.2). The Irish notation "whisk*e*y" will only be used when indeed the Irish product is addressed.

According to EU regulation 2019/787 (annex 1, category 2), whisky production must comply with certain requirements. In parts simplified and in our own words, it must be:

- **(a)** …distilled from a mash made from malted cereals,
- **(b)** …distilled at less than 94,8 % vol., and
- **(c)** …matured for at least 3 years in wooden casks not exceeding 700 litres capacity.

Water and plain caramel can be added (the latter will provide for the color), but no additional alcohol and also no sweeteners or flavors. The final product shall have an alcoholic strength of 40 % vol. The protected term "single malt" can be used when a whisky is produced from malted barley and in a single distillery.

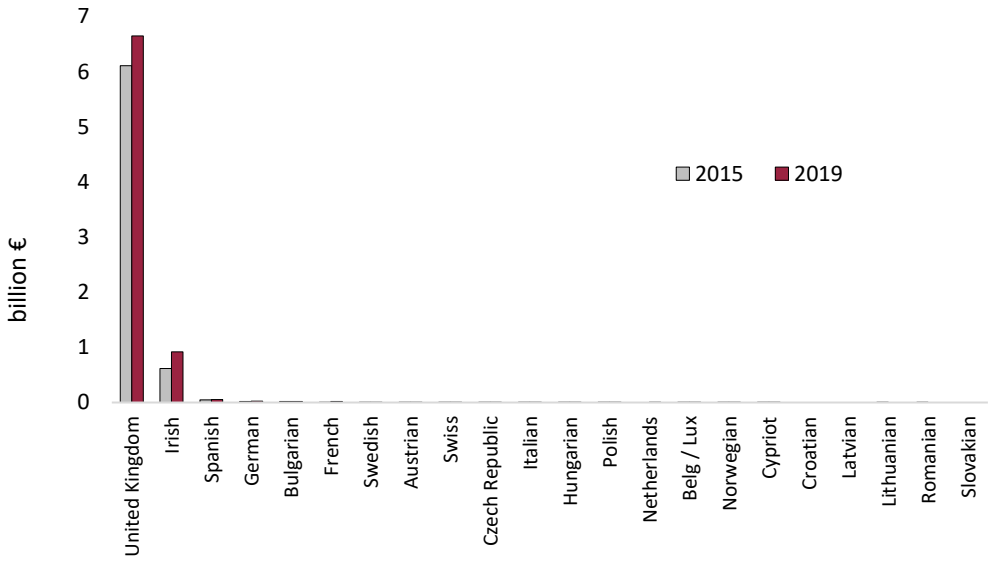
Whisky production turnovers for 2015 and 2019 are shown in Figure 28. As stated before, most whisky made in the EU+ comes from the United Kingdom; by far most of it is Scotch whisky. The UK production turnovers – as estimated according to the approach outlined in section 2.2 – amount to 6.6 billion Euros in 2019 and have increased considerably since 2015. Irish whiskey production in 2019 was worth about 0.92 billion Euros. All other countries report only minor amounts of whisky production.

It must be noted that both UK and Irish production figures must be handled with care. UK production values exceed the producers' turnovers as already shown in Figure 2. The number presented here equals the official Eurostat turnover. The Irish number had to estimated based on IWSR and Eurostat (see section 2.2) as it was missing in official statistics. A good way to cross-check these numbers could be to look at trade statistics again (see Eurostat (2021b)): Ireland has exported whiskey worth 0.8 billion Euros in 2019; according to IWSR, we would assume that another 0.1 billion Euros has been consumed domestically. Given that stocks can slightly vary over time, our production estimation of 0.92 billion Euros seems spot on. The United Kingdom has exported about

5.7 billion Euros in whisky; another billion is consumed domestically. Again, our production figure of 6.6 billion Euro seems reasonable.

We must again refer to the discussion about production and turnovers from section 2.1: Spirits production in the United Kingdom might have been higher than actual turnovers in recent years (both domestically and abroad). Hence, inventory levels of final or maturing products might have been built up. As whisky (and, in particular, Scotch whisky) is UK's most dominant spirits product, this issue must apply mostly to this category. However, we stick to our reasoning from above and use Eurostat's production *turnover* data; knowing that the actual production effects might have been higher than observed in sales, turnover and export data.[63] This has to be kept in mind when interpreting the results.

Figure 28: Production turnovers of whisky (2015/2019, estimated)

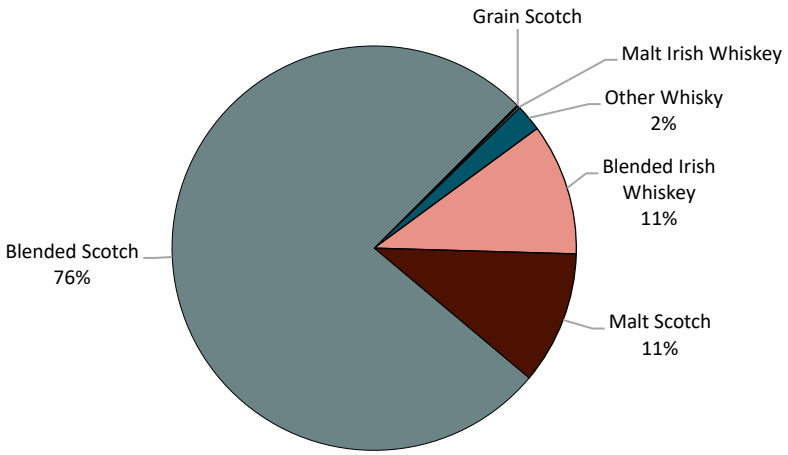


Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a); excluding taxes.

About 10 million hectoliters of whisky made in the EU+ have been sold in 2019. The different subcategories are depicted in Figure 29 as volume shares. Almost 90 % of whisky sales was Scotch (by far most of it *blended*); virtually the rest came from Ireland. There is some whisky production in most countries; Spain, France and Bulgaria even achieve 5-digit quantities of hectolitres. But none of the EU+ countries gets even close to the amounts produced in Scotland and Ireland.

[63] We will come upon this issue further below when the geographical indication of Scotch whisky is concerned.

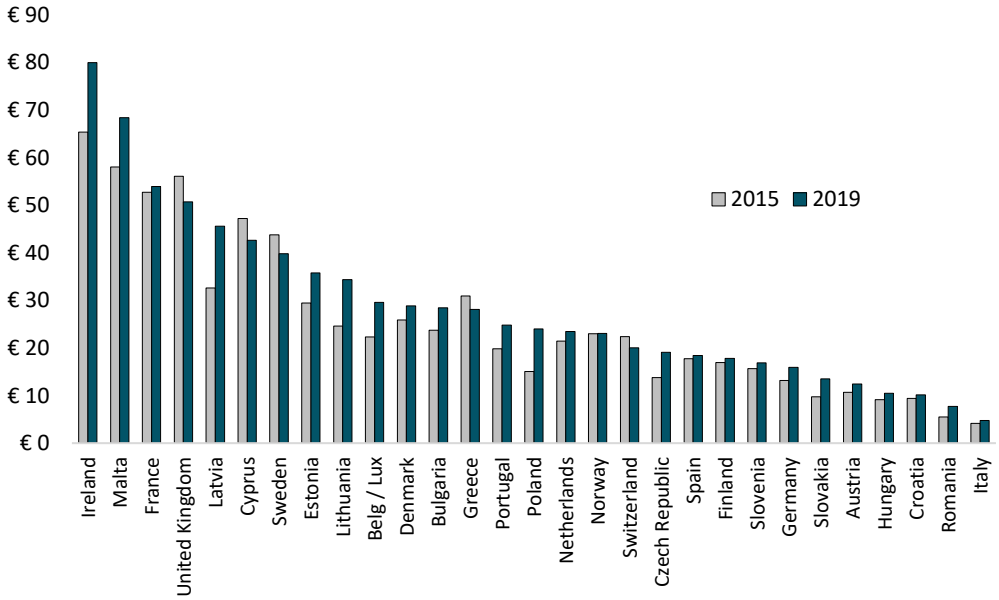
Figure 29: Subcategories of European whisky by produced volume



Source: IWSR (2021).

The consumption pattern is shown in Figure 30. It is not surprising that there is a strong preference for whisky in countries where it is produced. France, however, catches the eye: French per-capita whisky consumption ranks third in the EU+ and is now even higher than in the United Kingdom. As mentioned above, the country is the largest whisky importer (in absolute terms) in the EU+.

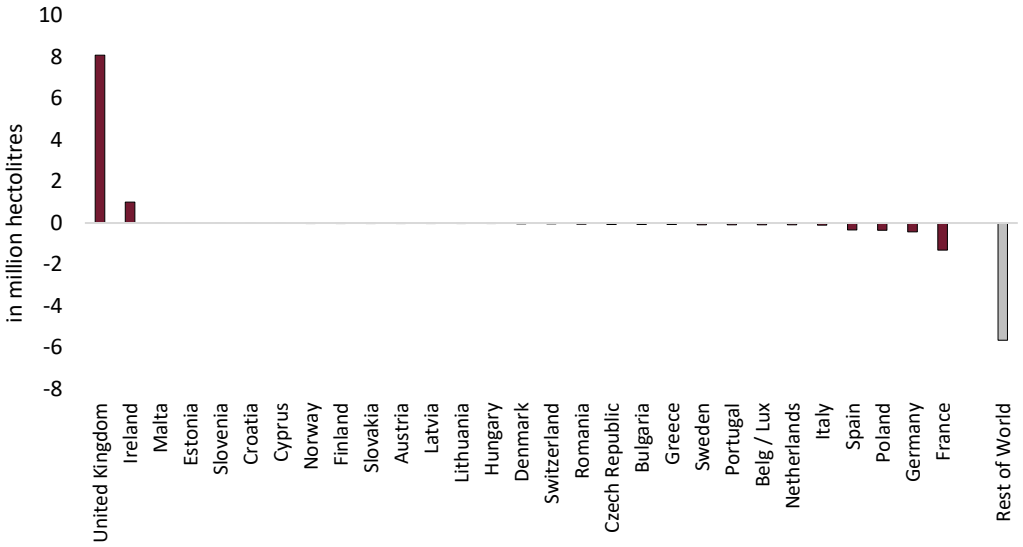
Figure 30: Annual whisky consumption per capita (only adults)



Source: IWSR (2021).

Figure 31 displays again the difference between the amount of globally sold whisky *from* each EU+ country and the amount sold *in* that country. Even though we have shown above that minor production activities are taking place outside the UK and Ireland, these two countries are the only net exporters of whisky in the EU+. By far the largest importer in the Europe is France. The amount of European whisky sold all over the world is larger than the amount of whisky from all over the world being sold in Europe (see grey column).

Figure 31: Quantity of sold whisky <u>from country …</u> minus quantity <u>sold in country …</u>



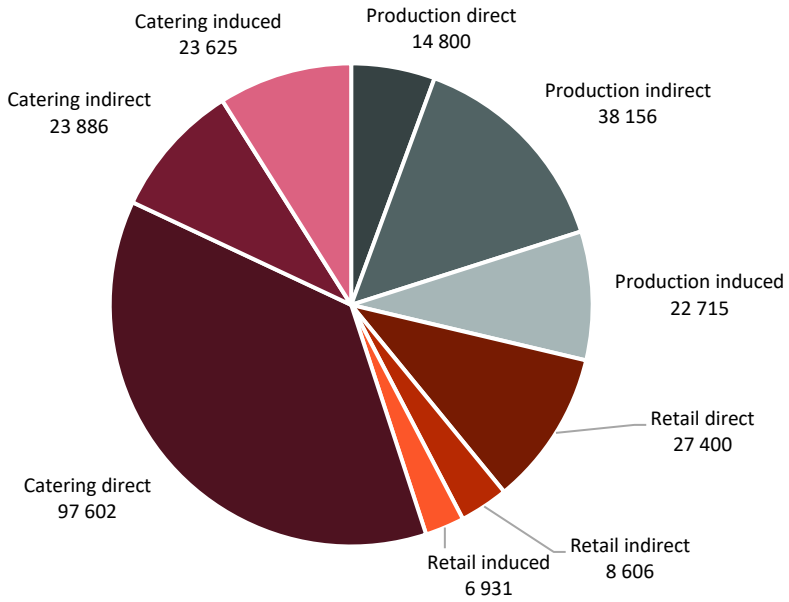
Source: Own calculations on the basis of IWSR (2021).

7.1.2 Results

Whisky production and consumption in the EU+ can be associated with a gross value added (GVA) effect of about 15.7 billion Euros in 2019 which corresponds to 264,000 supported jobs. Hence, whisky employs as many people as Malta (see Eurostat (2021f)). The fiscal effects are estimated to 5.4 billion Euros in income and profit taxes etc. from all kinds of activities related to whisky production and consumption plus another 5.9 billion Euros in value added tax (VAT) and excise duties on the actual consumption of whisky.

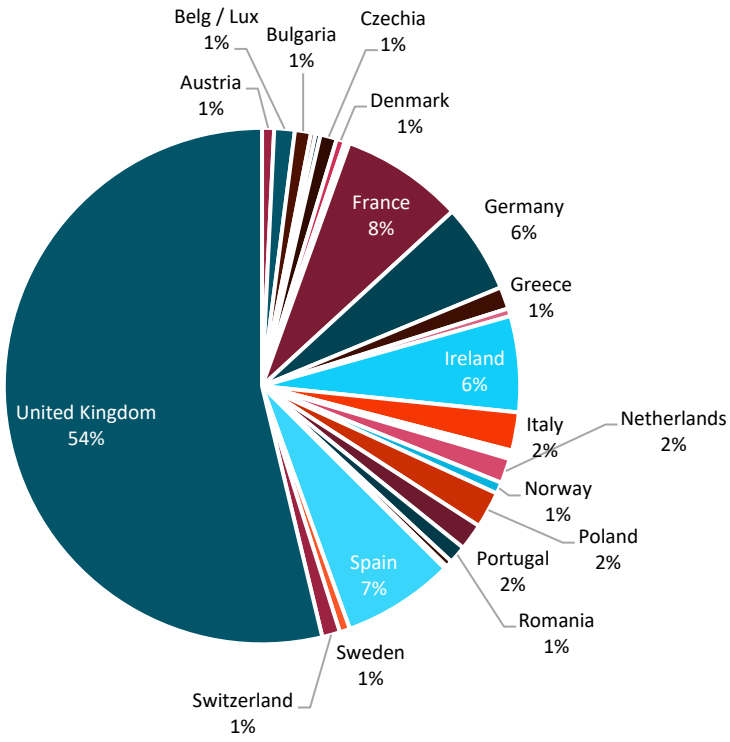
Figure 32 illustrates the different kinds of activities that the whisky employment effects come from. Figure 33 shows the GVA decomposition by country. The overall economic results for whisky are summarised in Table 13.

Figure 32: Employment results by type of effect (for whisky)



Source: IHS (2021).

Figure 33: GVA effects by country (for whisky)



Source: IHS (2021).

Table 13: Overall economic effects of whisky in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
United Kingdom	**8 448**	4 175	2 614	*6 788*	1 660	**83 786**	30 417	33 544	*63 961*	19 825	**2 899**	1 304	863	*2 168*	732
France	**1 206**	520	374	*893*	313	**20 714**	12 073	4 718	*16 791*	3 922	**552**	207	166	*373*	179
Spain	**1 098**	594	242	*835*	263	**22 244**	13 200	4 468	*17 668*	4 576	**360**	170	76	*246*	114
Ireland	**945**	614	219	*833*	111	**9 092**	6 234	1 756	*7 990*	1 102	**220**	126	51	*177*	43
Germany	**877**	285	297	*582*	295	**18 946**	10 338	4 365	*14 703*	4 244	**338**	97	108	*204*	134
Italy	**376**	131	121	*251*	125	**7 127**	3 313	1 829	*5 142*	1 985	**142**	43	43	*86*	56
Poland	**359**	178	108	*285*	74	**18 399**	11 899	3 678	*15 577*	2 822	**113**	48	32	*79*	34
Portugal	**261**	142	58	*200*	61	**7 890**	4 681	1 491	*6 172*	1 718	**82**	37	17	*54*	28
Netherlands	**244**	84	94	*178*	66	**4 909**	2 795	1 245	*4 040*	869	**71**	20	26	*46*	25
Greece	**217**	119	64	*183*	34	**6 578**	4 277	1 332	*5 610*	968	**63**	30	18	*48*	15
Belg/Lux	**202**	67	79	*146*	56	**2 809**	1 389	823	*2 212*	596	**85**	24	32	*56*	28
Switzerland	**177**	59	58	*117*	60	**2 219**	1 293	427	*1 719*	500	**33**	9	10	*19*	14
Romania	**176**	90	45	*135*	41	**10 339**	5 924	2 145	*8 069*	2 270	**42**	16	11	*27*	15
Czech Republic	**163**	80	49	*128*	34	**7 346**	4 820	1 462	*6 282*	1 064	**52**	22	15	*37*	16
Bulgaria	**158**	83	39	*123*	36	**18 260**	12 643	2 825	*15 468*	2 791	**43**	17	9	*26*	17
Austria	**119**	58	33	*91*	28	**1 799**	1 050	405	*1 456*	343	**43**	19	12	*31*	13
Norway	**113**	13	58	*71*	42	**720**	259	199	*458*	262	**39**	4	18	*22*	17
Sweden	**102**	31	40	*71*	31	**1 318**	596	403	*999*	319	**41**	11	15	*26*	14
Denmark	**82**	30	31	*60*	22	**1 553**	942	359	*1 301*	252	**33**	10	12	*21*	12
Hungary	**76**	32	25	*57*	19	**4 658**	2 929	960	*3 890*	769	**30**	10	8	*18*	11
Slovak Republic	**66**	33	18	*51*	15	**3 749**	2 797	534	*3 331*	419	**22**	10	5	*15*	7
Cyprus	**49**	28	11	*39*	9	**1 606**	1 136	235	*1 371*	234	**13**	5	4	*8*	5
Croatia	**45**	26	8	*34*	11	**2 035**	1 304	308	*1 612*	423	**14**	6	3	*9*	6
Lithuania	**38**	22	8	*30*	8	**1 761**	1 226	252	*1 479*	282	**10**	5	2	*7*	3
Finland	**36**	9	16	*25*	12	**582**	231	204	*434*	148	**16**	3	7	*10*	6
Slovenia	**27**	13	7	*21*	7	**938**	577	187	*764*	174	**10**	4	3	*6*	3
Latvia	**27**	12	8	*20*	7	**1 345**	825	266	*1 091*	254	**7**	3	2	*5*	3
Malta	**19**	11	6	*16*	3	**475**	297	120	*416*	59	**5**	2	1	*4*	1
Estonia	**11**	5	4	*9*	3	**522**	335	107	*442*	80	**3**	1	1	*2*	1
EU+	**15 717**	7 543	4 729	*12 272*	3 445	**263 720**	139 801	70 648	*210 449*	53 270	**5 383**	2 263	1 570	*3 833*	1 549

Source: IHS (2021).

7.2 Brandy (including Cognac & Brandy de Jerez)

7.2.1 Descriptives about brandy production and consumption

Brandy is easily one of the most sophisticated spirits products. Its name is derived from the German word for "burned" and thereby refers to the distillation process. The most famous brandy in Europe is probably *Cognac,* produced at the French Atlantic coast, which is registered as a geographical indication and will be dedicated an individual analysis (see subsection 7.8). Further renowned European brandies are, e. g., the Spanish Brandy de Jerez, the Bulgarian Rakia or the Italian Grappa.

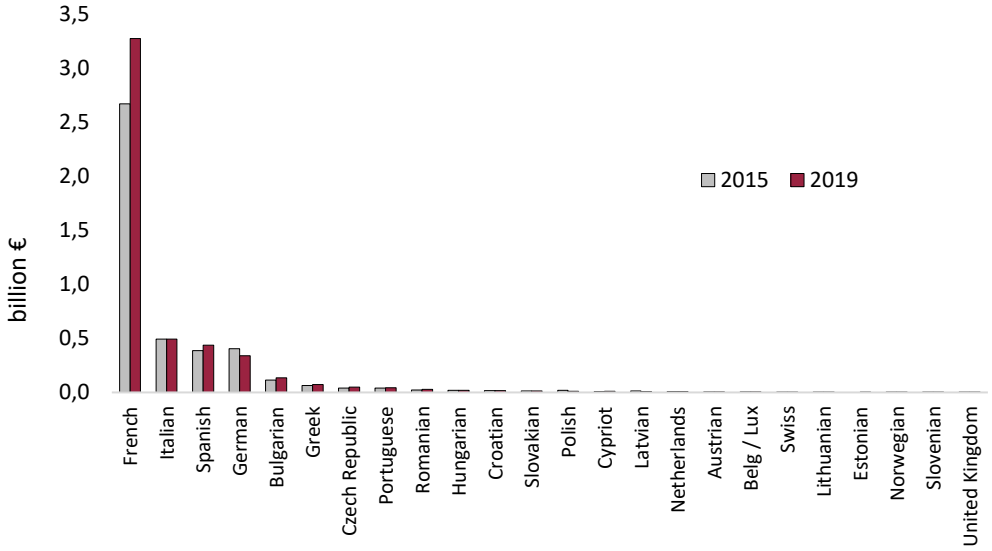
According to EU regulation 2019/787 (annex 1, category 5), brandy production must comply with certain requirements. In parts simplified and in our own words, it must:

- **(a)** …be produced from wine spirit to which wine distillate may be added,
- **(b)** …have matured for at least one year in oak receptacles with a capacity ≥ 1,000 litres or six months in oak casks with a capacity < 1,000 litres,
- **(c)** …have a volatile substances content ≥ 125 grams per hectolitre of 100 % vol. alcohol, and derived exclusively from the distillation of the raw materials used, and
- **(d)** …have a maximum methanol content of 200 grams per hectolitre of 100 % vol. alcohol.

The final product shall contain at least 36 % alcohol, but no alcohol may be added. Also, flavours are not allowed, but caramel and sweeteners are (under certain conditions).

The brandy production turnovers are shown in Figure 34.

Figure 34: Production turnovers of brandy (2015/2019, estimated)

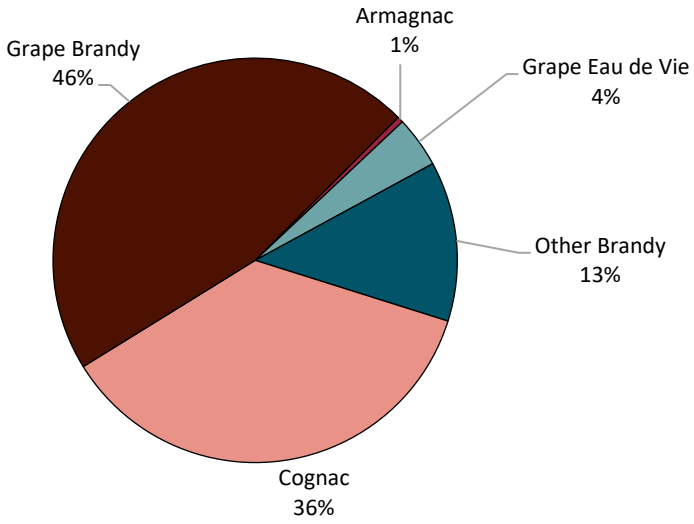


Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a); excluding taxes.

Obviously, France takes a dominant role in terms of brandy production. The estimated production turnover of 3.3 billion Euros in 2019 comes almost entirely from Cognac production. We have reason to believe that those numbers are reasonable. Eurostat (2021b) trade data report that France has exported 3.7 billion Euros in 2019; only very little is consumed domestically according to IWSR. Hence, our number would seem slightly high, but it has to be considered that the Eurostat export figure of 3.7 billion Euros counts all kinds of spirits "obtained by distilling grape wine or grape marc"; some of it might not be considered brandy according to EU regulation 2019/787. We are therefore confident, that our estimated brandy production turnover of 3.3 billion Euros is fine. The brandy production turnover in Spain – note that the Spanish province Cádiz has been featured as a brandy tourism region in subsection 2.4.4 – is estimated to about 0.44 billion Euros.

The composition of produced brandy in the EU+ by subcategory is displayed in Figure 35. More than a third of it is Cognac but the lion's share consists of the different kinds of grape brandy produced in Spain, Italy or Bulgaria.

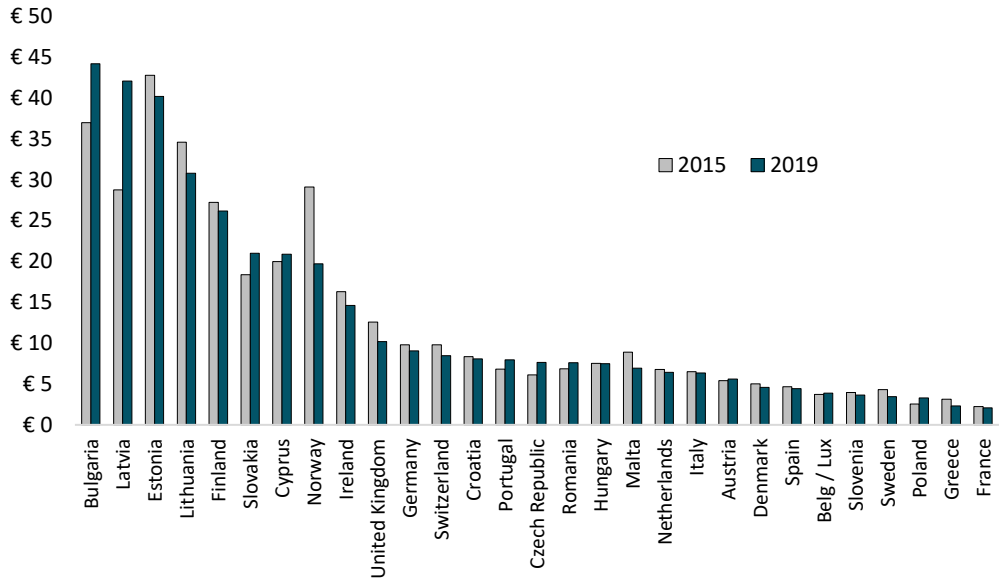
Figure 35: Subcategories of European brandy by produced volume



Source: IWSR (2021).

The consumption pattern for brandy is shown in Figure 36. Interestingly, French consumers rank last in terms of brandy consumption per capita, even though their country is by far the largest European producer in this category. Nonetheless, they have a strong preference for whiskies (as shown above in section 7.1). Also other brandy producing countries, like Greece or Italy, do not consume large quantities per capita and seem to favor other categories instead. The largest brandy consumption per capita is reported in Bulgaria; most of it is domestically produced Rakia.

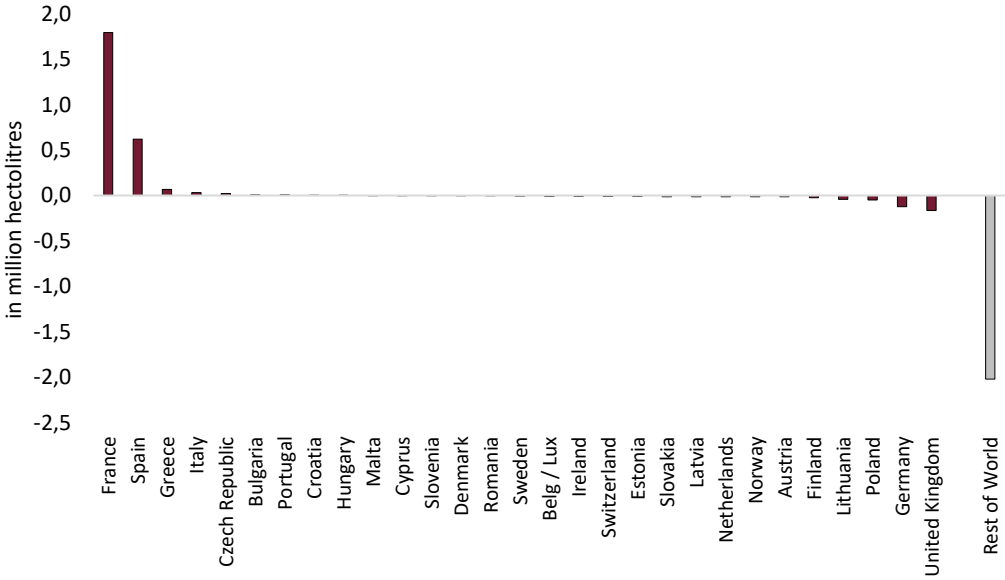
Figure 36: Annual brandy consumption per capita (only adults)



Source: IWSR (2021).

Figure 37 shows the difference between the amount of globally sold brandy *from* each EU+ country and the amount of brandy sold *in* that particular country. We find that only France and Spain produce enough (and consume little enough themselves) in order to be significant net exporters. The EU+ as a whole produces much more brandy than it consumes, as shown by the grey column.

Figure 37: Quantity of sold brandy <u>from country …</u> minus quantity <u>sold in country …</u>



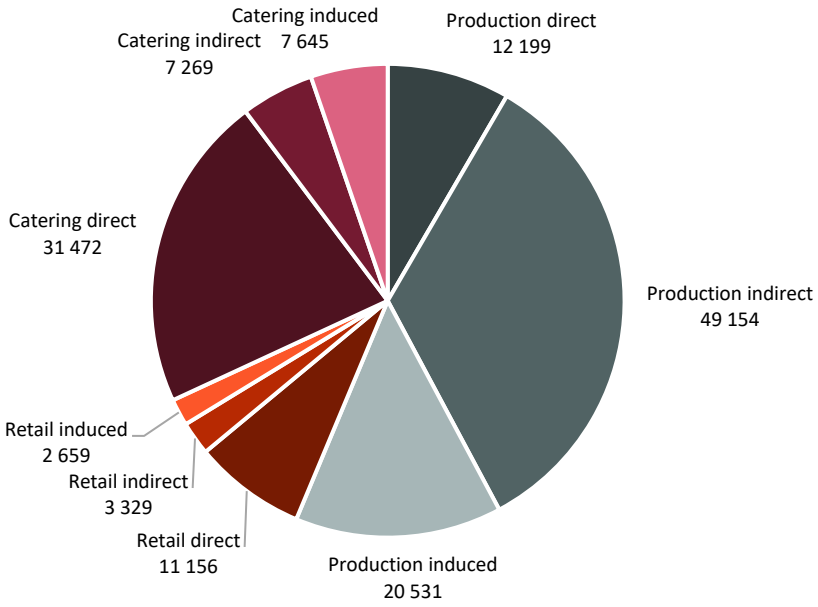
Source: Own calculations on the basis of IWSR (2021).

7.2.2 Results

We estimate brandy production and consumption in the EU+ to generate a gross value added (GVA) effect of about 7.6 billion Euros in 2019 which would support about 145,000 jobs. The fiscal effects are estimated to 3.1 billion Euros in income and profit taxes etc. from all kinds of activities related to brandy production and consumption plus another 1.7 billion Euros in value added tax (VAT) and excise duties for the actual consumption of brandy. The amount of VAT and excise duties is only almost half as large as the amount of employment and profit related taxes of brandy production and consumption; they were pretty equal, e. g., for whisky (see section 7.1). The reason is that the relationship between brandy production and brandy consumption in the EU+ is more biased towards production while rather little is consumed.

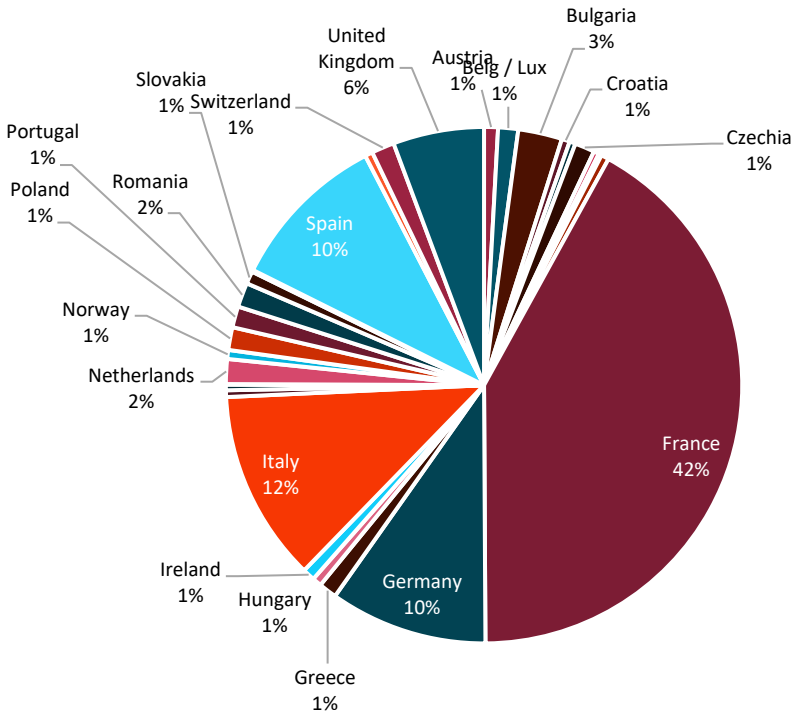
Figure 38 shows the different kinds of activities that the brandy employment effects result from. Again, we see that production activities dominate while those related to on- and off-premise consumption are rather small. Figure 39 shows the GVA decomposition by country. Not surprisingly, France takes the first rank, i. a. due to Cognac production. The overall economic results for brandy are summarised in Table 14.

Figure 38: Employment results by type of effect (for brandy)



Source: IHS (2021).

Figure 39: GVA effects by country (for brandy)



Source: IHS (2021).

Table 14: Overall economic effects of brandy in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
France	**3 190**	959	1 616	*2 575*	615	**35 956**	6 913	21 363	*28 276*	7 680	**1 587**	458	765	*1 223*	364
Italy	**913**	310	379	*689*	225	**14 546**	5 035	5 911	*10 946*	3 600	**343**	103	137	*240*	103
Spain	**764**	277	297	*574*	190	**13 140**	4 446	5 365	*9 811*	3 329	**258**	80	97	*177*	81
Germany	**752**	188	356	*544*	208	**13 185**	4 744	5 401	*10 145*	3 040	**294**	64	135	*199*	96
United Kingdom	**434**	150	151	*301*	132	**7 597**	4 059	1 965	*6 024*	1 573	**144**	40	48	*88*	56
Bulgaria	**209**	78	89	*167*	42	**21 388**	11 120	6 972	*18 093*	3 296	**59**	16	22	*38*	21
Netherlands	**118**	29	57	*86*	32	**2 074**	919	731	*1 650*	424	**35**	7	16	*23*	12
Romania	**116**	46	42	*88*	29	**6 653**	2 952	2 119	*5 071*	1 582	**29**	9	10	*19*	10
Switzerland	**109**	30	42	*72*	37	**1 289**	662	318	*980*	309	**21**	5	8	*12*	8
Poland	**108**	32	47	*79*	29	**5 018**	2 136	1 767	*3 902*	1 115	**35**	9	14	*23*	12
Portugal	**100**	38	36	*75*	26	**2 935**	1 134	1 070	*2 204*	731	**33**	10	12	*22*	11
Belg/Lux	**96**	11	55	*66*	29	**1 139**	225	599	*824*	315	**42**	4	24	*28*	15
Czech Republic	**94**	37	37	*74*	21	**3 220**	1 430	1 146	*2 576*	644	**31**	10	12	*22*	9
Greece	**86**	27	42	*69*	17	**2 220**	615	1 125	*1 740*	479	**29**	8	14	*22*	8
Austria	**66**	22	27	*49*	17	**951**	395	338	*733*	217	**25**	7	10	*17*	8
Slovak Republic	**60**	27	21	*48*	12	**2 920**	1 964	614	*2 578*	343	**20**	8	6	*14*	5
Ireland	**59**	20	22	*42*	17	**1 017**	701	174	*875*	141	**16**	5	5	*10*	5
Hungary	**44**	14	19	*33*	11	**2 122**	919	754	*1 673*	450	**17**	4	6	*11*	6
Norway	**43**	8	21	*29*	14	**369**	164	106	*270*	100	**16**	3	7	*10*	6
Croatia	**39**	19	10	*30*	9	**1 579**	822	411	*1 233*	346	**13**	5	3	*8*	5
Finland	**37**	13	15	*28*	9	**649**	341	190	*531*	118	**16**	5	6	*11*	5
Sweden	**37**	4	20	*23*	13	**409**	77	198	*275*	134	**15**	1	8	*9*	6
Latvia	**32**	15	10	*24*	8	**1 523**	912	337	*1 249*	274	**9**	3	2	*6*	3
Cyprus	**29**	15	8	*23*	6	**902**	581	180	*762*	141	**8**	3	3	*5*	3
Lithuania	**27**	15	6	*21*	5	**1 193**	801	202	*1 003*	190	**7**	3	1	*4*	2
Denmark	**25**	5	12	*17*	8	**386**	147	146	*293*	93	**11**	2	5	*7*	4
Estonia	**14**	7	5	*12*	3	**691**	474	132	*606*	85	**4**	2	1	*3*	1
Slovenia	**9**	2	4	*6*	3	**278**	104	97	*201*	77	**3**	1	1	*2*	1
Malta	**3**	1	1	*2*	1	**67**	36	21	*56*	11	**1**	0	0	*1*	0
EU+	**7 613**	2 399	3 446	*5 845*	1 768	**145 415**	54 827	59 753	*114 580*	30 835	**3 122**	874	1 380	*2 254*	868

Source: IHS (2021).

7.3 Vodka

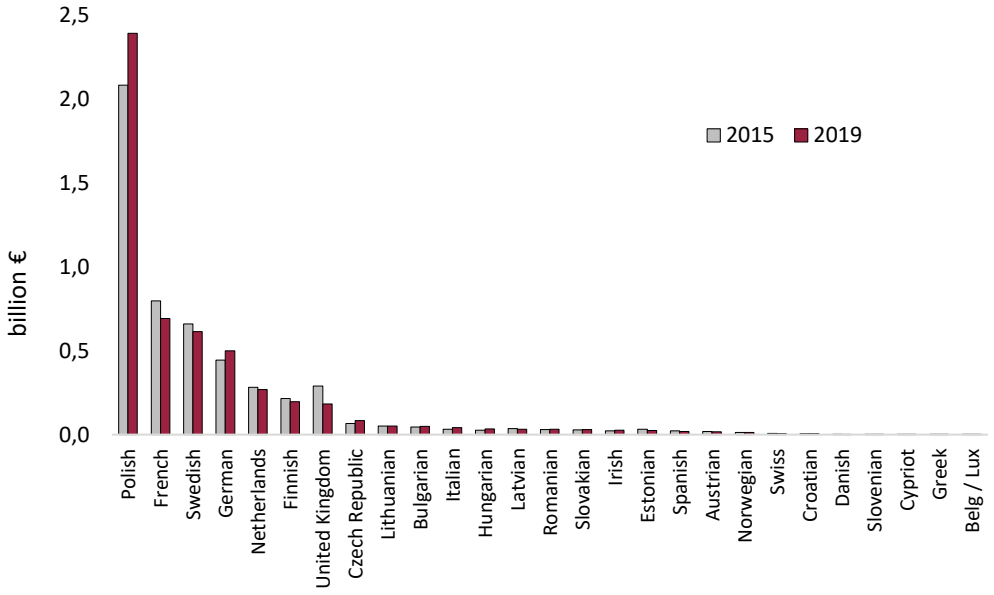
7.3.1 Descriptives about vodka production and consumption

Vodka accounts for about a quarter of both production and consumption in Europe. It is produced mainly in Poland and Sweden but also in France, Germany and the United Kingdom. The EU+ produces more vodka than it consumes per year.

According to EU regulation 2019/787 (annex 1, category 15), vodka production must comply with certain requirements. In parts simplified and in our own words, it must be produced from ethyl alcohol of agricultural origin obtained from fermentation using yeast of potatoes, cereals, or other agricultural raw materials. This may be followed by additional rounds of distillation or procedures to control the desired organoleptic characteristics of the product. The minimum alcoholic strength shall be 37.5 % vol. Vodka shall not be coloured but can contain certain natural flavours to increase the already predominant flavour[64] and sweeteners. As there have been controversial debates about the notion that vodka may be produced not only from potatoes or cereals but also from other agricultural raw materials, it has become a legal requirement to name the kind of raw material that has been used on the bottle (if not potatoes or cereals).

The estimated vodka production numbers are displayed in Figure 40.

Figure 40: Production turnovers of vodka (2015/2019, estimated)



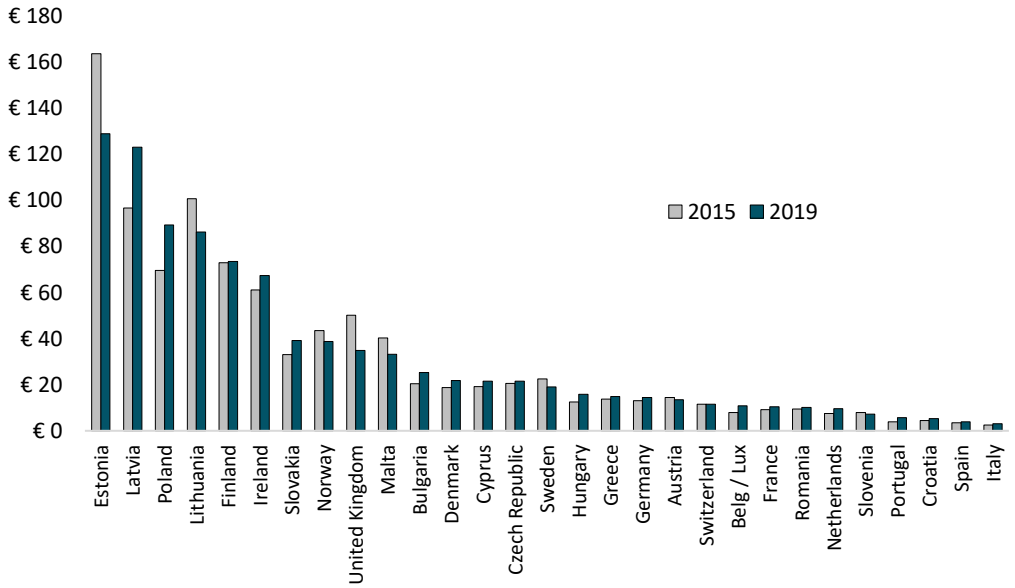
Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021); excluding taxes.

[64] Vodka may also contain flavours that change its original taste. It is then, however, counted as *flavoured vodka* (EU regulation 2019/787, annex 1, category 31).

Most vodka produced in the EU+ is considered *traditional vodka*; only 17 % is *flavoured* (according to IWSR). The largest vodka producers in the EU+ are Poland, France and Sweden. Poland clearly stands out; the estimated turnovers of Polish vodka producers in 2019 amounted to 2.4 billion Euros which is almost half the total EU+ vodka production. An interesting picture can be seen when those figures are compared to Eurostat (2021b) trade statistics: Sweden shipped vodka worth 401 million Euros to trade partners around the world (France: 360 million Euros). This is more than half of what the two countries produce. Poland, however, exported only 134 million Euros in vodka; even though the production was way higher. This mirrors the fact that the Polish are by far the largest vodka consumers in the EU+: According to IWSR, more than 281 million litres have been sold there in 2019; the second largest country was Germany with only 78 million litres (having more than twice the population).

In terms of per-capita consumption, however, there are a few countries ahead of Poland (see Figure 41). Adult consumers in Estonia and Latvia have purchased vodka worth more than 120 Euros in 2019. A considerable North-South divide can be observed: While vodka is very famous with consumers in Scandinavia and the Baltics, almost none is sold in many countries in southern European countries.

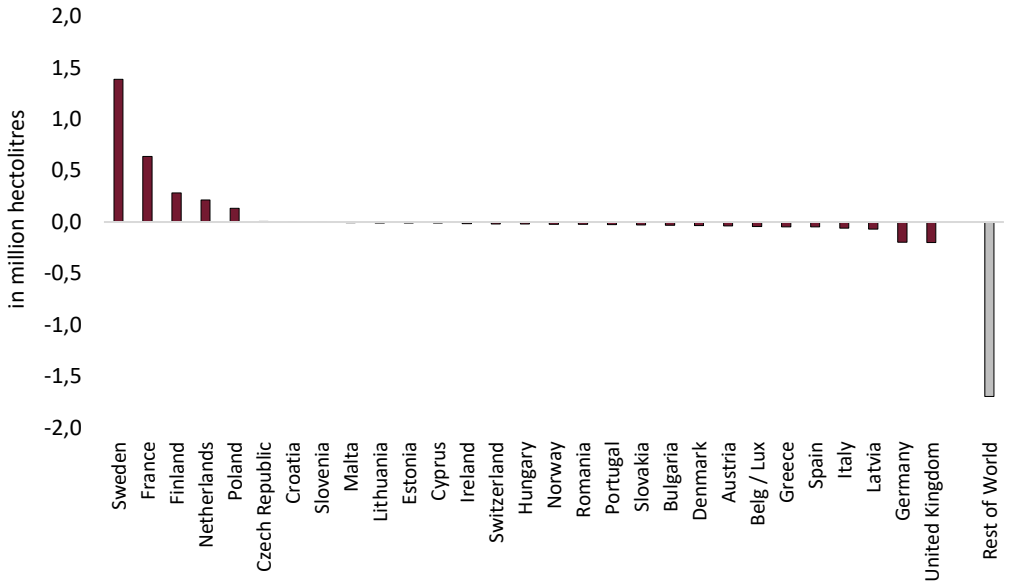
Figure 41: Annual vodka consumption per capita (only adults)



Source: IWSR (2021).

The difference between the amount of globally sold vokda *from* each EU+ country and the amount sold *in* that particular EU+ country is displayed in Figure 42. Especially Sweden and France have considerable net surpluses to export; Poland – being a large producer and a large consumer at the same time – only shows a slightly positive balance. The United Kingdom and Germany – although being vodka producers themselves – would be the largest net importers. The grey column shows that sales of vodka *from* the EU+ exceed vodka sales *in* the EU+.

Figure 42: Quantity of sold vodka from country … minus quantity sold in country …



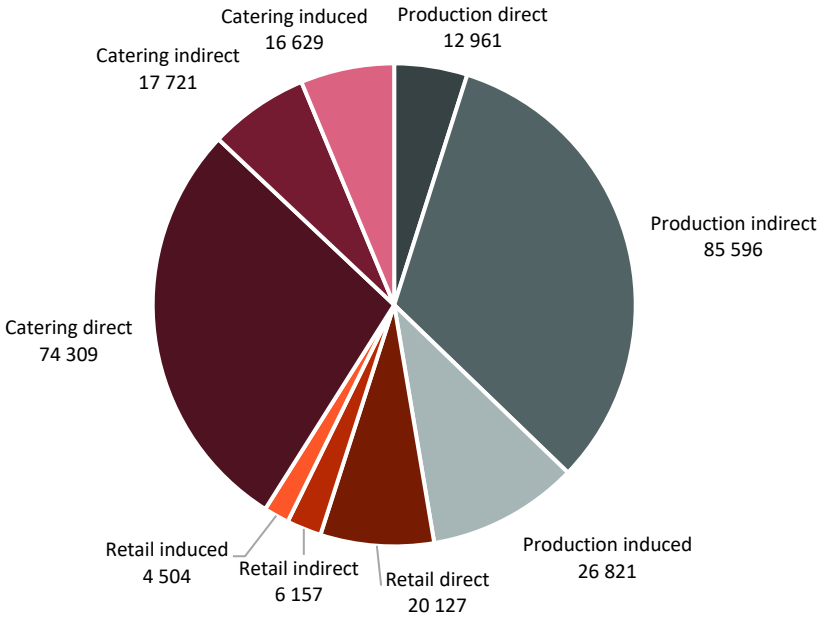
Source: Own calculations on the basis of IWSR (2021).

7.3.2 Results

Vodka in the EU+ generates a gross value added (GVA) effect of about 10.3 billion Euros in 2019 and it supports 265,000 jobs per year. Hence, vodka production and consumption in the EU+ employ as many people as whisky (see section 7.1). The fiscal effects from income and profit taxes etc. on economic activities related to vodka production and consumption are estimated to 3.6 billion Euros; value added tax (VAT) and excise duties for the consumption of vodka amount to another 6.2 billion Euros. We see here the opposite effect than for brandy (see section 7.2): Vodka consumption in the EU+ is high in many EU countries, so that consumption-related VAT and excise duties are higher compared to production-related taxes.

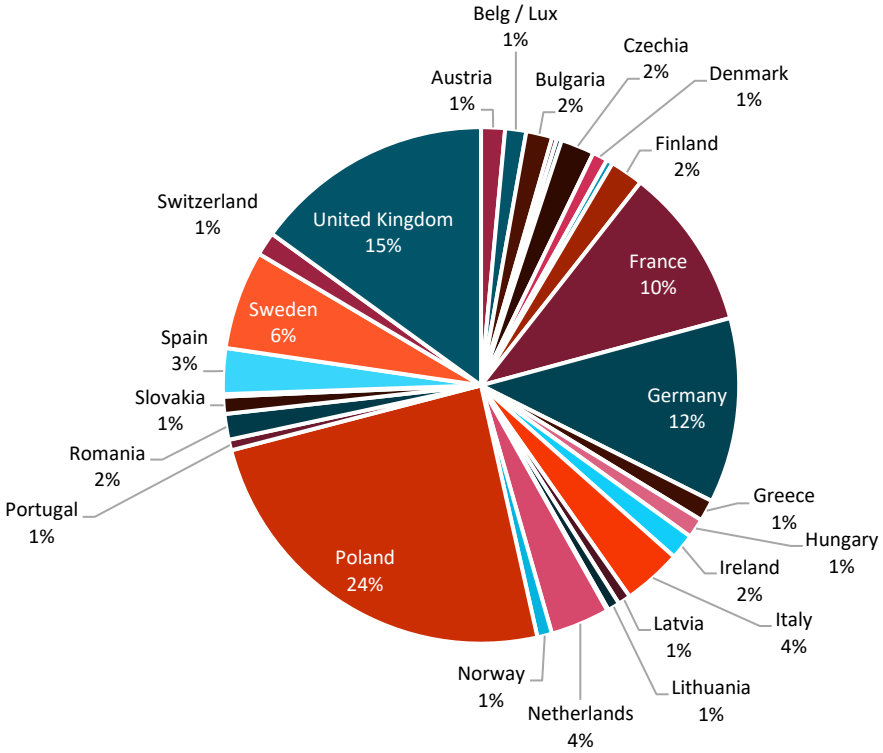
Figure 43 illustrates the different kinds of activities that the vodka employment effects come from. Figure 44 shows the GVA decomposition by country. The overall economic results for whisky are summarised in Table 15.

Figure 43: Employment results by type of effect (for vodka)



Source: IHS (2021).

Figure 44: GVA effects by country (for vodka)



Source: IHS (2021).

Table 15: Overall economic effects of vodka in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
Poland	**2 510**	587	1 511	*2 097*	412	**99 450**	25 301	58 493	*83 794*	15 656	**813**	157	456	*613*	199
United Kingdom	**1 541**	699	450	*1 148*	392	**27 334**	16 772	5 926	*22 698*	4 636	**505**	188	143	*331*	174
Germany	**1 190**	290	564	*854*	335	**21 106**	7 557	8 660	*16 217*	4 889	**467**	98	215	*313*	154
France	**1 046**	334	473	*807*	239	**13 601**	4 402	6 208	*10 609*	2 992	**509**	150	222	*371*	138
Sweden	**636**	280	242	*522*	113	**5 737**	2 022	2 500	*4 522*	1 215	**242**	95	91	*186*	56
Netherlands	**380**	116	187	*303*	77	**5 376**	1 969	2 372	*4 340*	1 036	**112**	27	53	*81*	31
Italy	**378**	120	142	*261*	117	**6 886**	2 831	2 196	*5 026*	1 859	**143**	39	52	*91*	53
Spain	**294**	117	91	*208*	86	**5 808**	2 598	1 706	*4 303*	1 504	**99**	34	30	*63*	36
Czech Republic	**216**	82	88	*170*	46	**7 699**	3 595	2 688	*6 282*	1 417	**71**	22	28	*50*	20
Finland	**214**	65	104	*169*	45	**2 828**	840	1 395	*2 235*	592	**92**	23	45	*67*	25
Bulgaria	**168**	79	52	*131*	37	**18 659**	11 811	3 948	*15 759*	2 900	**46**	16	13	*28*	18
Romania	**165**	73	53	*126*	39	**9 442**	4 710	2 576	*7 286*	2 156	**40**	14	13	*27*	14
Ireland	**164**	85	44	*129*	35	**3 223**	2 563	351	*2 914*	309	**44**	22	10	*32*	12
Austria	**154**	64	56	*120*	34	**2 235**	1 115	700	*1 815*	420	**57**	21	21	*42*	15
Switzerland	**151**	47	54	*101*	50	**1 874**	1 042	414	*1 456*	418	**28**	7	10	*17*	11
Greece	**138**	73	42	*115*	22	**4 093**	2 525	927	*3 452*	641	**40**	18	12	*31*	10
Belg/Lux	**135**	27	69	*96*	39	**1 731**	553	759	*1 312*	420	**58**	10	29	*39*	20
Hungary	**125**	51	47	*98*	27	**7 030**	4 032	1 892	*5 924*	1 106	**47**	16	16	*31*	16
Slovak Republic	**110**	44	42	*87*	23	**5 101**	3 202	1 250	*4 452*	649	**36**	14	12	*26*	10
Denmark	**97**	27	44	*71*	26	**1 663**	842	528	*1 370*	292	**40**	9	18	*27*	14
Norway	**95**	11	52	*63*	31	**759**	182	348	*530*	229	**37**	4	19	*23*	14
Latvia	**81**	34	28	*62*	19	**3 671**	1 984	990	*2 973*	698	**23**	8	7	*15*	8
Lithuania	**78**	32	30	*62*	15	**2 836**	1 286	1 011	*2 297*	539	**19**	7	7	*13*	6
Portugal	**68**	32	19	*50*	18	**2 075**	1 044	515	*1 559*	517	**22**	8	6	*14*	8
Estonia	**41**	15	17	*32*	9	**1 554**	831	467	*1 298*	257	**13**	4	5	*9*	4
Cyprus	**32**	17	8	*25*	6	**1 021**	692	173	*864*	156	**9**	3	3	*6*	3
Croatia	**31**	16	7	*23*	8	**1 326**	741	281	*1 022*	304	**10**	4	2	*6*	4
Slovenia	**16**	5	6	*11*	5	**502**	232	148	*381*	122	**6**	2	2	*4*	2
Malta	**8**	5	2	*7*	1	**207**	126	54	*180*	27	**2**	1	1	*2*	1
EU+	**10 259**	3 428	4 524	*7 952*	2 307	**264 826**	107 398	109 473	*216 871*	47 955	**3 633**	1 019	1 537	*2 556*	1 077

Source: IHS (2021).

7.4 Gin

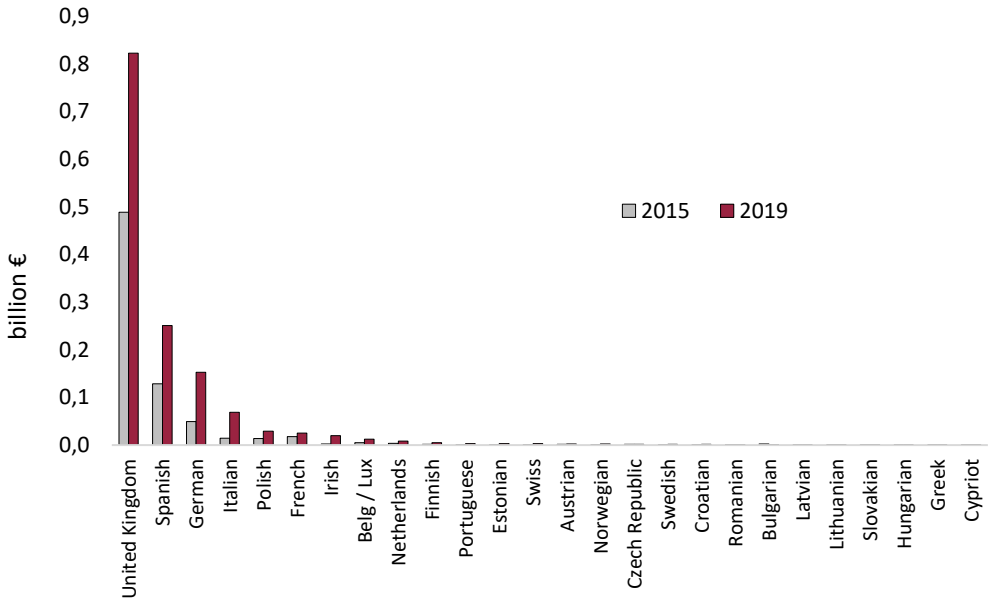
7.4.1 Descriptives about gin production and consumption

Gin is one of the booming categories and has gained immensely in consumers' appreciation in recent years. The majority of gin produced in the EU+ stems from the United Kingdom; another hotspot in Europe is certainly Spain. As gin is famously enjoyed with tonic water, the production of the latter has also increased considerably.[65]

At least three different kinds of gin are mentioned in Annex 1 of the relevant EU regulation 2019/787 (in the following partly simplified and in our own words): *Gin* (category 20), *distilled gin* (category 21) and *London gin* (category 22). *Gin* must be produced by flavouring ethyl alcohol of agricultural origin with juniper berries. The minimum alcoholic strength shall be 37.5 % vol. Flavours may be added in order to increase the juniper taste. The term *dry* may be added only if the amount of added sweetening does not exceed a certain threshold. The major difference between *gin* and *distilled gin* is that at least parts of the alcohol used for the latter has not been distilled first and only then flavored with juniper, but that distillation took place in the presence of juniper berries. Finally, *London gin* is *distilled gin* that fulfills a series of further technical requirements (e. g. *London gin* is always *dry*).

Our estimated gin production turnovers are shown by EU+ country in Figure 45.

Figure 45: Production turnovers of gin (2015/2019, estimated)



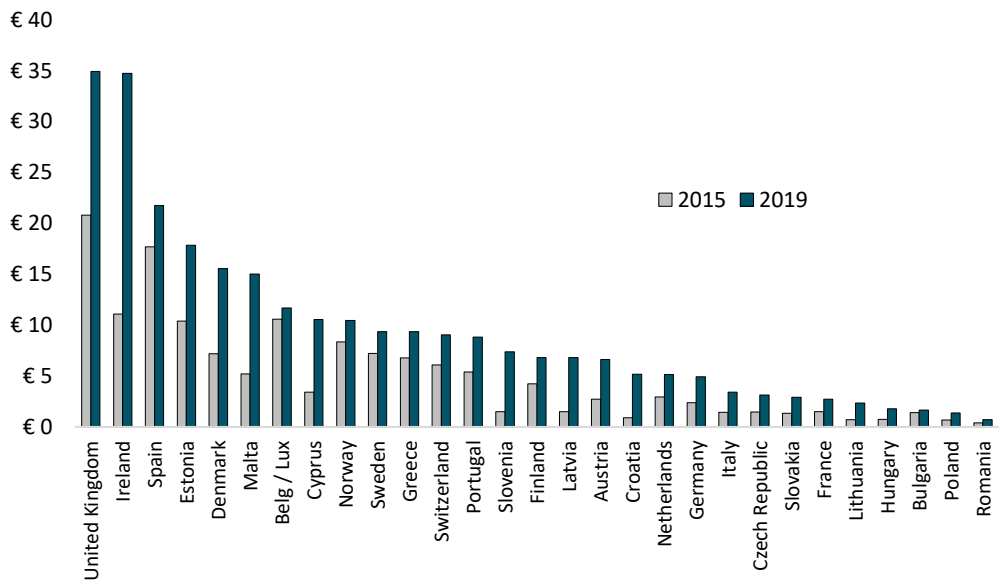
Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a); excluding taxes.

[65] https://www.grandviewresearch.com/industry-analysis/tonic-water-market

The United Kingdom is by far the largest gin producer in the EU+. Gin turnovers have almost doubled between 2015 and 2019 and, hence, have increased much stronger than for all other spirits categories. However, gin producers' turnovers in the EU+ have not exceeded 1.4 billion Euros and therefore still represent only about 5 % of total spirits production. Most gin produced in Europe is considered *traditional* gin; only 13 % are *flavoured* or *pink* gin (according to IWSR).

The strong increase in production has, of course, been induced by an increase in terms of gin consumption. Per-capita sales are displayed in Figure 46. Especially the UK and Ireland have seen massive increases in gin consumption between 2015 and 2019 (even though other countries have much larger percentage growth rates, e. g. Slovenia or Latvia) and are now way ahead of all other EU+ countries.

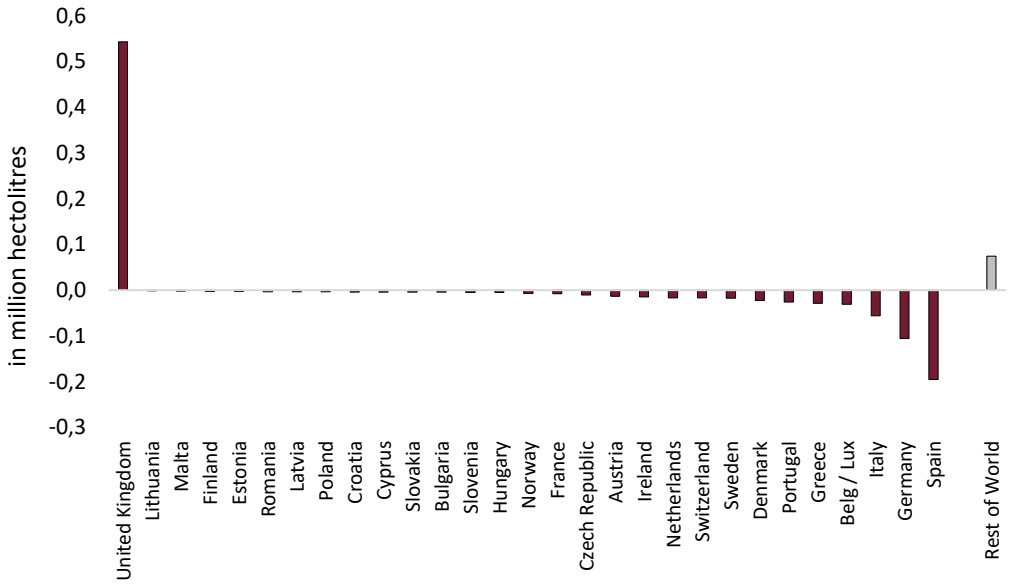
Figure 46: Annual gin consumption per capita (only adults)



Source: IWSR (2021).

The gap between the sold gin volume *from* the EU+ and the one being sold *in* the EU+ is presented in Figure 47. It turns out that the United Kingdom is the only country that produces much more than it consumes domestically and therey can be considered a net exporter of gin. All other countries in the EU+ have to import. Even the EU+ as a whole could not satisfy its gin demand through own production; the grey column shows that the rest of the world has a positive balance vis-à-vis the EU+. Hence, the UK can not make up for the entire European gin demand.

Figure 47: Quantity of sold gin <u>from country …</u> minus quantity <u>sold in country …</u>



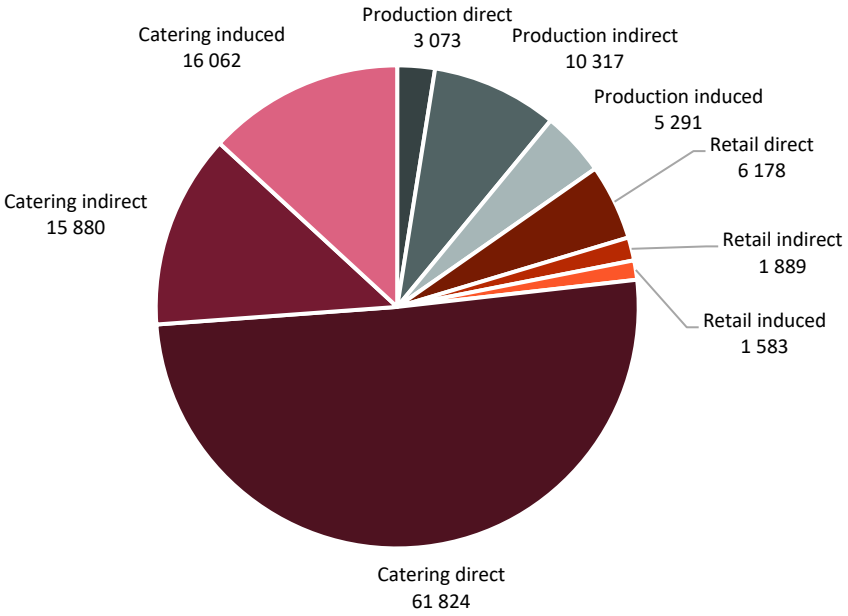
Source: Own calculations on the basis of IWSR (2021).

7.4.2 Results

The production and consumption of gin in the EU+ generated a gross value added (GVA) effect of about 6.4 billion Euros in 2019. This was enough to support 122,000 jobs per year. The fiscal effects from income and profit taxes etc. on economic activities related to gin production and consumption are estimated to about 2.1 billion Euros; value added tax (VAT) and excise duties for the consumption of gin amount to another 2.6 billion Euros.

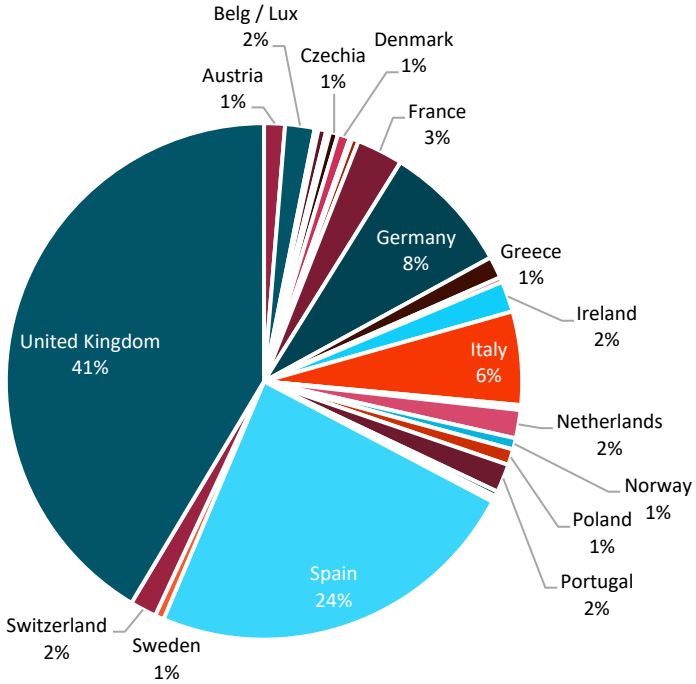
Figure 48 illustrates the different kinds of activities that the gin employment effects come from. In contrast to the categories shown above, gin generates most of its economic effects via consumption (especially on-premise); this is not surprising as we have already shown that gin has become more popular with consumers in recent years. Figure 49 shows the GVA decomposition by country; the United Kingdom and Spain as the major gin producers in the EU+ stand out. The overall economic results for gin are summarised in Table 16.

Figure 48: Employment results by type of effect (for gin)



Source: IHS (2021).

Figure 49: GVA effects by country (for gin)



Source: IHS (2021).

Table 16: Overall economic effects of gin in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
United Kingdom	**2 635**	1 308	730	*2 039*	596	**42 178**	25 495	9 638	*35 134*	7 045	**867**	365	234	*599*	267
Spain	**1 505**	835	346	*1 181*	324	**29 595**	17 644	6 334	*23 978*	5 616	**490**	239	109	*348*	142
Germany	**520**	180	189	*369*	151	**11 029**	5 984	2 859	*8 843*	2 186	**199**	60	69	*130*	69
Italy	**371**	158	116	*274*	97	**6 979**	3 656	1 766	*5 422*	1 557	**137**	52	41	*93*	45
France	**185**	47	71	*118*	67	**2 702**	931	932	*1 863*	839	**89**	19	33	*52*	36
Ireland	**122**	70	26	*96*	26	**2 625**	2 163	223	*2 386*	239	**34**	18	6	*24*	10
Belg/Lux	**117**	49	40	*89*	28	**1 720**	989	431	*1 420*	300	**48**	17	17	*34*	15
Portugal	**113**	59	26	*85*	28	**3 403**	1 917	693	*2 610*	792	**36**	16	8	*23*	12
Netherlands	**113**	42	41	*83*	29	**2 268**	1 341	545	*1 886*	383	**32**	10	11	*21*	11
Switzerland	**105**	42	31	*73*	33	**1 451**	942	232	*1 174*	277	**19**	6	6	*12*	8
Greece	**86**	48	25	*74*	13	**2 540**	1 633	534	*2 168*	372	**25**	12	7	*19*	6
Austria	**83**	48	20	*68*	15	**1 273**	833	249	*1 082*	191	**30**	16	7	*23*	7
Poland	**63**	14	31	*45*	19	**2 659**	779	1 171	*1 950*	709	**21**	4	9	*13*	8
Denmark	**48**	21	16	*37*	11	**986**	666	190	*856*	130	**19**	7	6	*13*	6
Norway	**45**	9	19	*28*	17	**351**	162	84	*246*	105	**16**	3	6	*9*	7
Sweden	**36**	10	14	*24*	12	**472**	209	141	*349*	122	**14**	3	5	*9*	5
Czech Republic	**32**	13	10	*23*	9	**1 351**	743	322	*1 065*	286	**11**	4	3	*7*	4
Croatia	**31**	18	6	*24*	7	**1 379**	881	211	*1 093*	287	**10**	4	2	*6*	4
Finland	**27**	10	10	*20*	7	**453**	232	133	*365*	89	**11**	3	4	*8*	4
Hungary	**20**	7	7	*14*	6	**1 145**	647	265	*912*	233	**8**	2	2	*5*	3
Romania	**20**	7	6	*13*	6	**1 143**	482	298	*780*	363	**5**	1	1	*3*	2
Cyprus	**16**	9	4	*13*	3	**511**	360	76	*436*	75	**4**	2	1	*3*	1
Bulgaria	**15**	7	4	*11*	4	**1 705**	1 076	298	*1 375*	330	**4**	1	1	*2*	2
Slovenia	**14**	7	4	*10*	3	**470**	293	92	*384*	86	**5**	2	1	*3*	2
Slovak Republic	**11**	4	4	*7*	4	**493**	286	105	*391*	103	**4**	1	1	*2*	2
Estonia	**10**	5	3	*8*	2	**435**	288	88	*376*	59	**3**	1	1	*2*	1
Latvia	**8**	3	2	*5*	2	**365**	206	80	*287*	78	**2**	1	1	*1*	1
Lithuania	**7**	3	2	*5*	2	**295**	163	65	*229*	66	**2**	1	0	*1*	1
Malta	**5**	3	1	*4*	1	**123**	73	32	*105*	17	**1**	1	0	*1*	0
EU+	**6 362**	3 035	1 804	*4 840*	1 522	**122 097**	71 075	28 086	*99 162*	22 935	**2 146**	872	593	*1 465*	681

Source: IHS (2021).

7.5 Rum

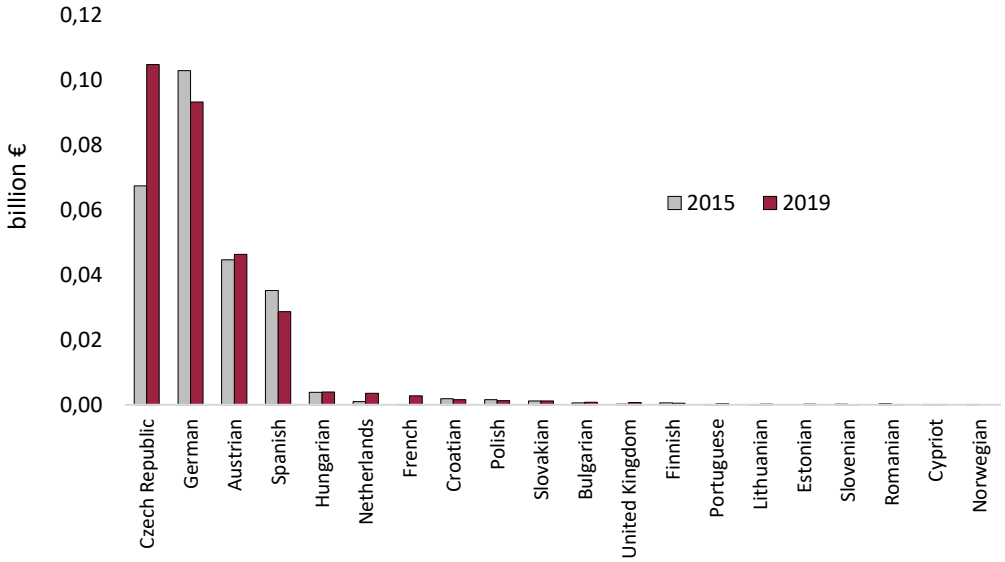
7.5.1 Descriptives about rum production and consumption

Even though rum has become more and more popular with European consumers in recent years, there is still almost no rum production in Europe. While raw materials for all other categories covered in this report can be cultivated to a sufficient extent in EU+ countries (mostly grapes and all kinds of cereals), the cultivation of sugar cane is hardly profitable outside tropical or subtropical regions. In the past, European companies like *Stroh* in Austria or *Tuzemák* in the Czech Republic produced substitutes (often called *Inländer-Rum*) from sugar beets or other raw materials. Some companies eventually switched to importing sugar cane and now produce true rum; others keep using substitutes and struggle to be recognised as actual rum producers.

The EU regulation 2019/787 (annex 1, category 1) leaves no room for interpretation when it comes to the starting product in rum production. Rum must be "[…] produced exclusively by the distillation of the product obtained by the alcoholic fermentation of molasses or syrup produced in the manufacture of cane sugar or of sugar-cane juice itself, […]". The minimum alcoholic strength shall be 37.5 % vol. No alcohol or flavours are allowed to be added, but caramel and particular sweeteners are. Additional requirements are defined in the regulation, e. g. about when to label rum "traditionnel" or "tradicional".

Even though, rum is hardly produced anywhere in the EU+, our estimated production turnovers are presented in Figure 50.

Figure 50: Production turnovers of rum (2015/2019, estimated)

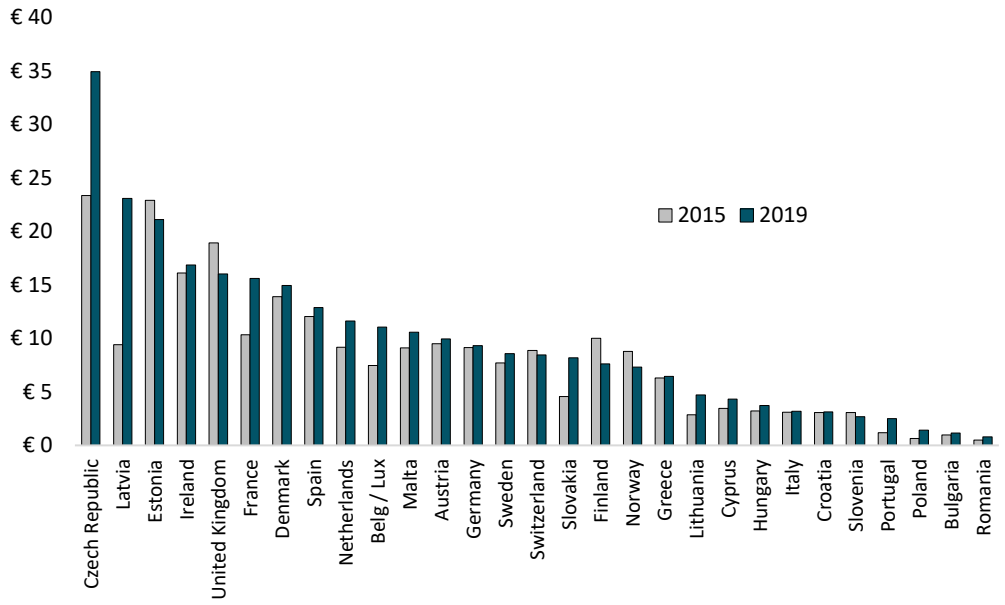


Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a); excluding taxes.

A couple of countries produce beverages that IWSR lists under rum. It remains open whether those products comply with the EU legislation. IWSR considers 80 % of European rum production *gold rum*; the remaining 20 % consist of *white* and *black rum* as well as *spiced rum* or *Verschnitt*. In any case, rum turnovers hardly exceed 290 million Euros and therefore represent only a small fraction of total EU+ spirits production.

In terms of consumption, however, rum is among the categories that gained most in terms of customers' attention. The per-capita sales are presented in Figure 51. As already noted in section 2, rum – though almost negligible in terms of production – does represent almost a tenth (and growing) of total spirits consumption in the EU+. The Czech Republic stands out. Almost a third of the Czech spirits consumption volume is rum; which makes it the second most popular spirit in the country (see also Figure 9). Most of it is likely the local product *Tuzemák* which – as mentioned above – IWSR classifies as rum, but actually is not based on sugar cane as required by EU regulation 2019/787.

Figure 51: Annual rum consumption per capita (only adults)

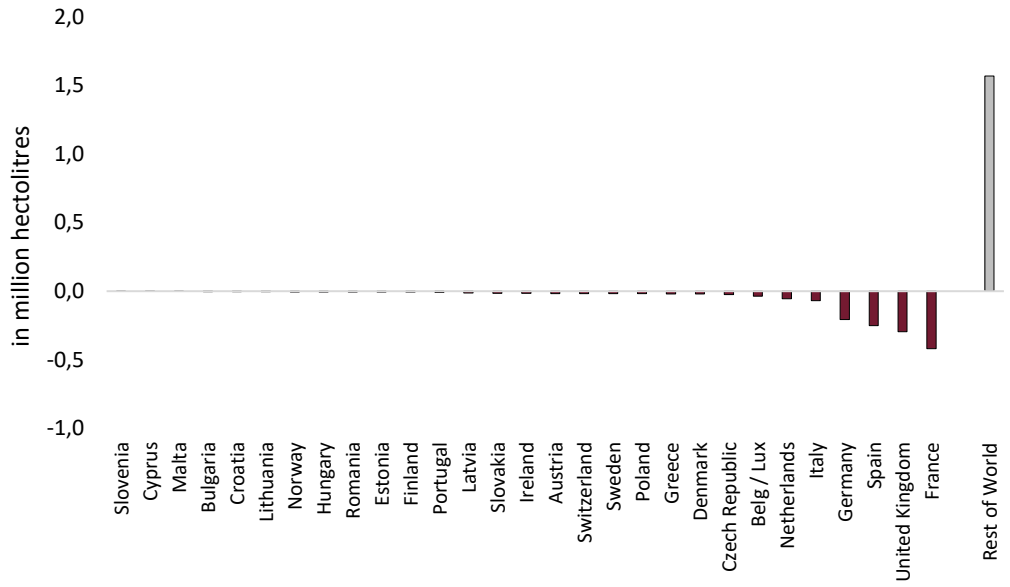


Source: IWSR (2021).

The difference between the amount of rum *from* the EU+ and the amount sold *in* the EU+ is shown in Figure 52. The results are straightforward: As no European country is producing significant rum quantities but consumption is on the rise, considerable imports are required to satisfy demand. This is what the figure shows. All countries are net importers; the larger the country, the larger its rum imports. Virtually all rum

consumed in the EU+ comes from the *rest of the world* (see grey column). Even the Czech Republic reports a small negative balance.

Figure 52: Quantity of sold rum <u>from country …</u> minus quantity <u>sold in country …</u>



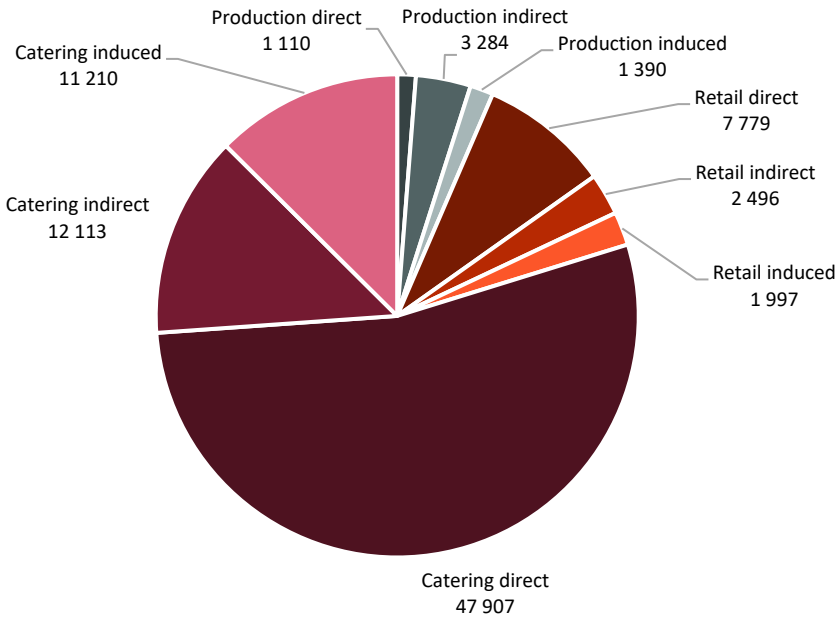
Source: Own calculations on the basis of IWSR (2021).

7.5.2 Results

The production and consumption of rum in the EU+ has generated a gross value added (GVA) effect of about 3.7 billion Euros in 2019. About 89,000 jobs have been supported by rum. The fiscal effects from income and profit taxes etc. on economic activities related to rum production and consumption are estimated to about 1.3 billion Euros; value added tax (VAT) and excise duties for the consumption of rum amount to another 2.4 billion Euros.

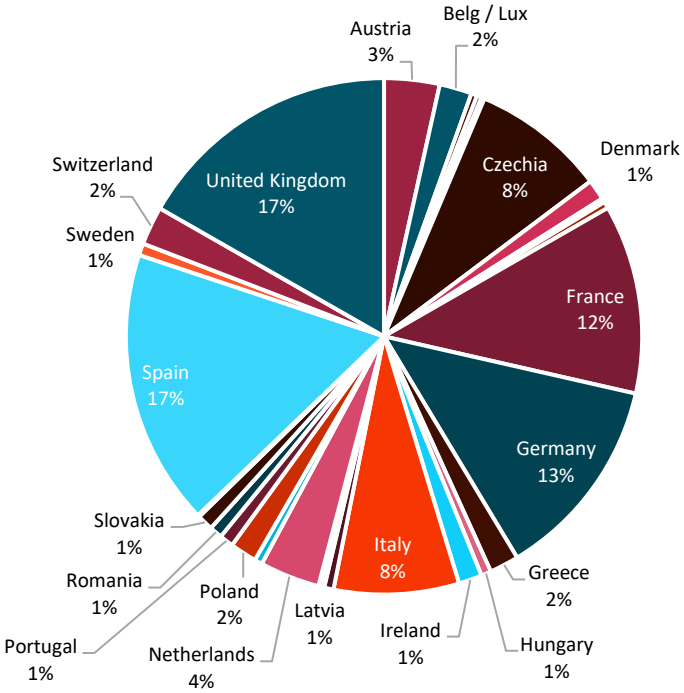
Figure 53 illustrates the different kinds of activities that the rum employment effects come from. Unsurprisingly, rum generates most of its economic effects via consumption (especially on-premise). The distribution looks very similar to the gin figure (section 7.4) as the second trending spirits category in the EU+; the grey rum production slices, however, are even smaller. Figure 54 shows the GVA decomposition by country. We see the Czech Republic stand out a bit as the largest rum producer in the EU+. The rest of the chart, however, can be explained simply by population size: Larger countries consume larger amounts of rum and therefore experience higher consumption-related economic effects. No country (with the exception of Czechia) can escape this pattern through large domestic production activities. The overall economic results for rum are summarised in Table 16.

Figure 53: Employment results by type of effect (for rum)



Source: IHS (2021).

Figure 54: GVA effects by country (for rum)



Source: IHS (2021).

Table 17: Overall economic effects of rum in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
Spain	**645**	376	129	*505*	140	**13 311**	8 500	2 388	*10 888*	2 424	**209**	108	40	*148*	61
United Kingdom	**624**	295	167	*462*	162	**12 175**	8 029	2 237	*10 266*	1 909	**202**	77	53	*130*	72
Germany	**478**	187	161	*349*	129	**10 797**	6 471	2 439	*8 909*	1 888	**181**	63	58	*121*	60
France	**442**	214	122	*336*	106	**7 674**	4 812	1 538	*6 349*	1 325	**201**	86	54	*140*	61
Czech Republic	**313**	168	96	*264*	49	**12 834**	8 427	2 902	*11 329*	1 505	**99**	46	29	*75*	24
Italy	**292**	143	77	*219*	73	**5 970**	3 674	1 135	*4 810*	1 160	**107**	47	26	*73*	34
Netherlands	**140**	70	43	*113*	27	**3 246**	2 286	599	*2 885*	361	**39**	17	12	*28*	11
Austria	**129**	72	37	*109*	21	**1 891**	1 165	467	*1 632*	259	**47**	24	13	*37*	10
Switzerland	**90**	38	25	*63*	26	**1 286**	867	192	*1 059*	227	**16**	6	5	*10*	6
Belg/Lux	**76**	33	25	*58*	18	**1 136**	665	273	*939*	197	**31**	11	10	*22*	9
Greece	**68**	39	20	*59*	10	**1 981**	1 277	419	*1 696*	285	**20**	10	6	*15*	4
Poland	**63**	23	22	*45*	17	**3 134**	1 676	790	*2 466*	668	**20**	6	7	*13*	7
Ireland	**55**	31	11	*42*	13	**1 321**	1 113	95	*1 208*	114	**15**	9	2	*11*	5
Denmark	**48**	23	15	*38*	10	**1 032**	739	179	*918*	114	**19**	7	5	*13*	6
Slovak Republic	**37**	18	11	*29*	8	**2 069**	1 511	335	*1 846*	223	**12**	6	3	*9*	4
Portugal	**33**	16	8	*24*	9	**981**	516	205	*722*	259	**10**	4	2	*7*	4
Romania	**30**	14	8	*22*	8	**1 719**	905	379	*1 284*	435	**7**	2	2	*4*	3
Sweden	**28**	10	10	*19*	8	**396**	209	99	*308*	88	**11**	3	4	*7*	4
Hungary	**23**	9	8	*17*	6	**1 330**	752	335	*1 087*	244	**9**	3	3	*6*	3
Latvia	**22**	11	6	*17*	5	**1 116**	740	187	*927*	189	**6**	2	1	*4*	2
Norway	**18**	4	7	*11*	7	**152**	71	34	*105*	47	**7**	1	2	*4*	3
Finland	**15**	6	5	*11*	4	**274**	150	70	*220*	54	**6**	2	2	*4*	2
Bulgaria	**14**	7	3	*10*	4	**1 576**	1 032	251	*1 282*	294	**4**	1	1	*2*	2
Croatia	**11**	6	2	*8*	3	**490**	290	94	*384*	106	**4**	1	1	*2*	1
Lithuania	**10**	5	2	*7*	2	**445**	294	70	*364*	82	**2**	1	0	*2*	1
Estonia	**10**	5	3	*8*	2	**474**	340	78	*418*	56	**3**	1	1	*2*	1
Cyprus	**7**	4	2	*6*	1	**237**	163	37	*201*	36	**2**	1	1	*1*	1
Slovenia	**4**	2	2	*3*	1	**140**	63	39	*102*	37	**2**	0	1	*1*	1
Malta	**4**	2	1	*4*	1	**99**	61	26	*87*	12	**1**	1	0	*1*	0
EU+	**3 728**	1 829	1 029	*2 858*	870	**89 286**	56 796	17 893	*74 689*	14 597	**1 292**	547	343	*890*	402

Source: IHS (2021).

7.6 Flavoured & National Spirits (including liqueurs)

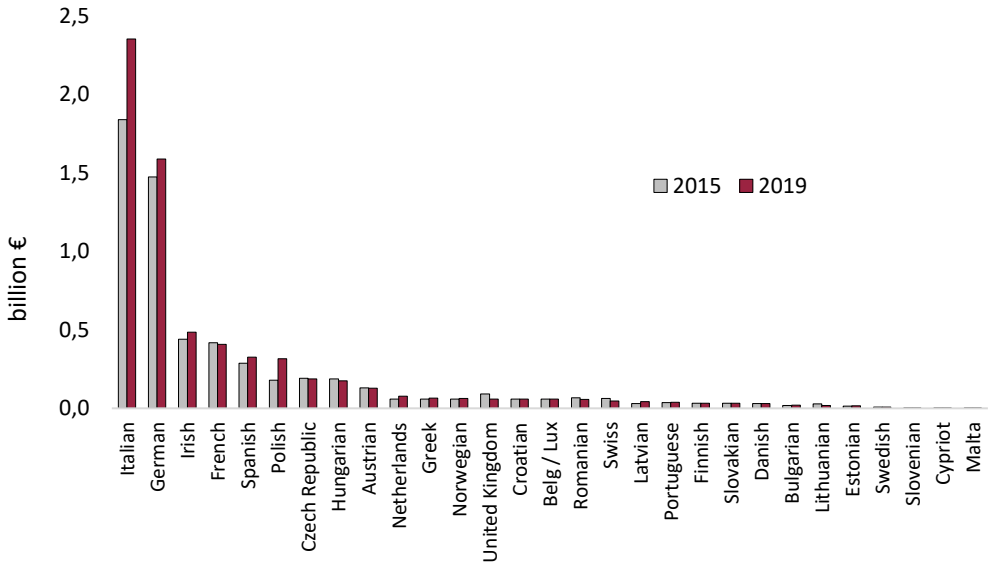
7.6.1 Descriptives about production and consumption

The category *flavoured & national spirits* is derived from IWSR classifications[66] and covers a large variety of spirits products not covered under the already described categories. While most of the categories described above must not be flavoured (or only under strict conditions like vodka and gin), there is a wide range of products whose production regulations allow for or even demand flavouring. The products considered in this category are mostly produced and consumed in the same country as they reflect very local preferences and production opportunities.

The IWSR category of *flavoured spirits* includes, i. a., all kinds of coffee, cream or egg liqueurs, Amaretti, Cassis or Limoncello. The flavours to be used are often defined in EU regulation 2019/787; they are often fruit, herbs, berries or roots. *National spirits*, according to IWSR, are defined as "white spirits not mentioned elsewhere". They include, i. a., the Chinese *Baijiu*, *Shochu* from Japan or South Korea, the Scandinavian *Aquavit* or the wide range of *Korn* spirits enjoyed mainly in Germany. Some of these products can also be flavoured.

The estimated turnovers generated by the production of flavoured and national spirits in the EU+ are displayed in Figure 55.

Figure 55: Production turnovers of flavoured & national spirits (2019, estimated)

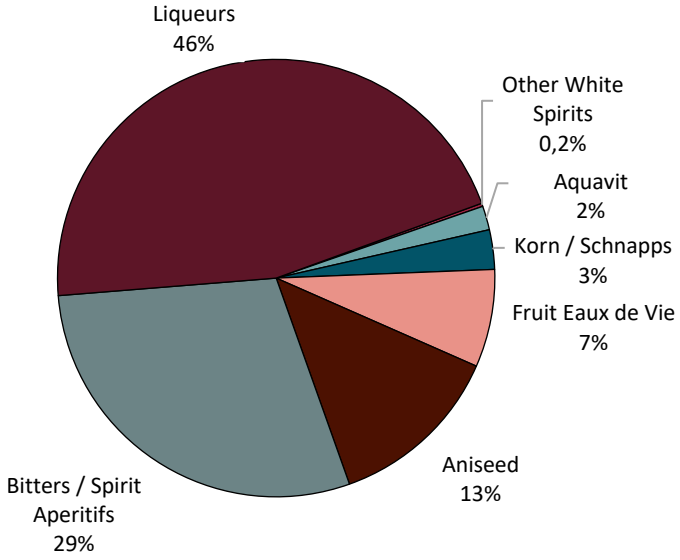


Source: Own calculations on the basis of IWSR (2021) and Eurostat (2021a); excluding taxes.

[66] https://data.theiwsr.com/_assets/pdfs/IWSR%20Global%20Database%20Methodology%20&%20Definitions%202020.pdf

Considerable production of this kind is taking place in Italy, Germany and Ireland. Italy produces all kinds of aperitifs and beverages like Amari, Sambuca or Limoncello. Germany is particularly strong in the production of korn and bitters; Ireland is specialized in the production of cream liqueurs (besides Irish whiskey, of course). The composition by subcategories is shown in Figure 56.

Figure 56: Subcategories of European flavoured & national spirits by produced volume

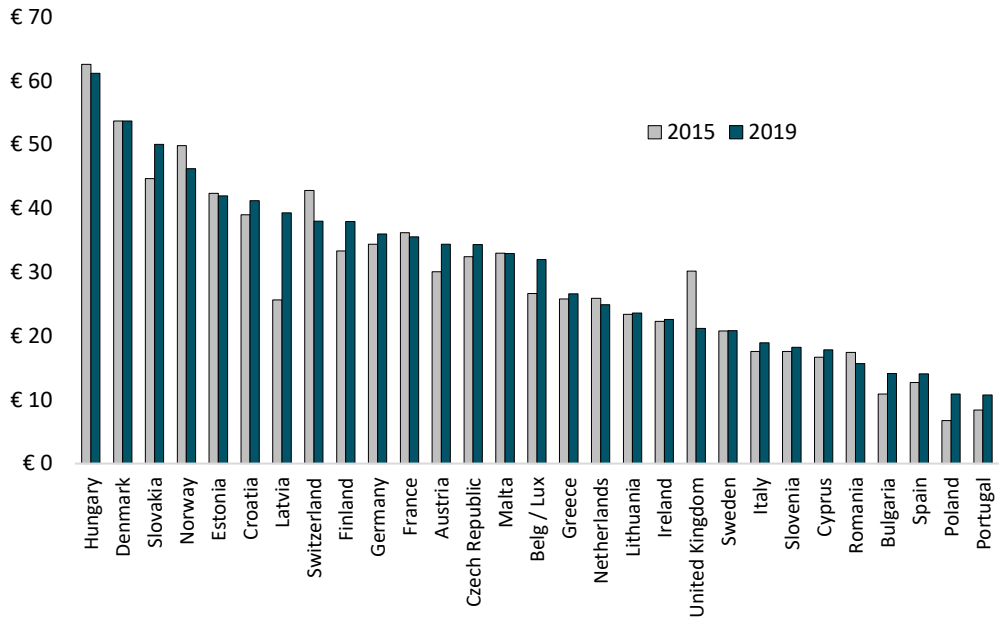


Source: IWSR (2021).

The consumption pattern for flavoured & national spirits is shown in Figure 57. The characteristic feature of this category is that considerable amounts of it are consumed in every EU+ country. While other spirits categories showed much steeper patterns (e. g. much vodka in the Baltics but almost none in the Mediterranean area), the category of flavoured & national spirits is a catch-all label for all kinds of local specialties that almost every region in Europe has.

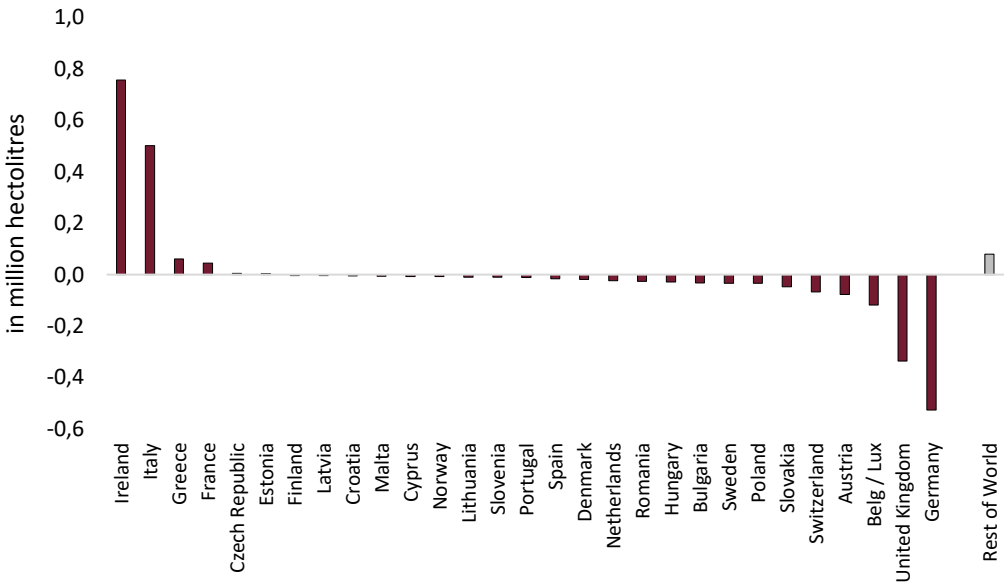
This view is confirmed by a look at Figure 58 that displays the gap between the amount of flavoured & national spirits *from* a country and the one being sold *in* a country. It shows that products of this kind are not necessarily traded across borders as they reflect very local preferences. Italy and Ireland can be considered net exporters of aperitifs and cream liqueurs while large countries, like Germany and the United Kingdom, will import them. However, the traded amounts (depicted by the vertical axis) are rather small, given that this category represents a quarter of European spirits production. Also, there is almost no contact to the rest of the world, as shown by the grey column. Hence, the EU+ can satisfy its demand by own production.

Figure 57: Annual per-capita consumption of flavoured & national spirits



Source: IWSR (2021).

Figure 58: Quantity of sold flavoured & national spirits <u>from country …</u> minus quantity <u>sold in country …</u>



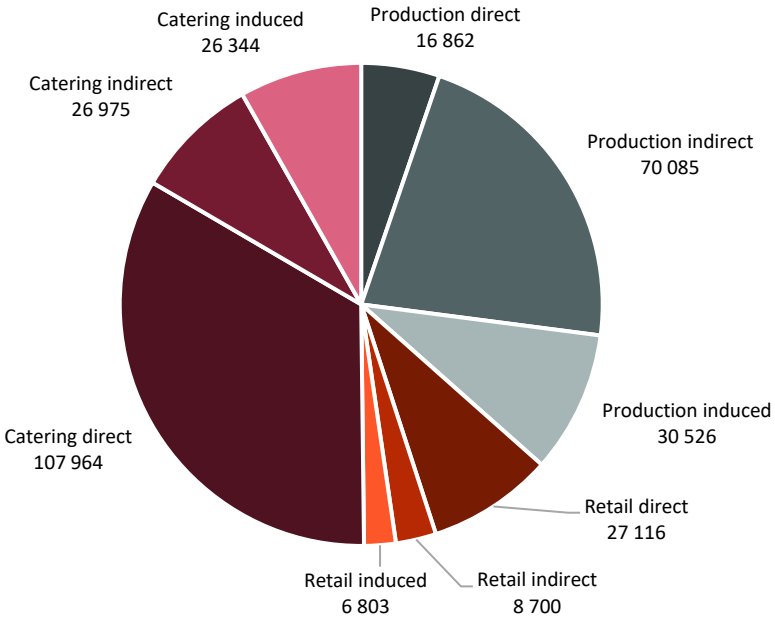
Source: Own calculations on the basis of IWSR (2021).

7.6.2 Results

Flavoured & national spirits in the EU+ have generated a gross value added (GVA) effect of about 15.4 billion Euros in 2019. By supporting 321,000 jobs per year, this catch-all category is one of the largest driver of spirits-related economic effects in the EU+; at least as important as whisky and vodka. The fiscal effects from income and profit taxes etc. on economic activities related to the production and consumption of flavoured & national spirits are estimated to about 5.5 billion Euros; value added tax (VAT) and excise duties for consumption amount to another 6.1 billion Euros.

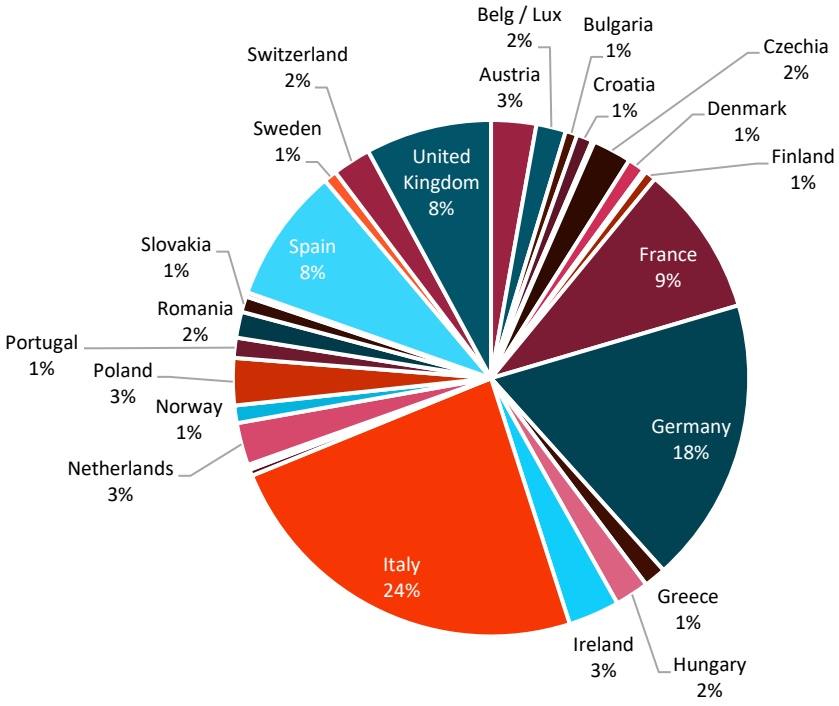
Figure 59 shows the different kinds of activities that the employment related to flavoured & national spirits comes from. Unlike for many other categories, the production effects here are considerable as many of those drinks are produced locally or at least in the EU+. Figure 60 shows the GVA decomposition by country. We see the that Italy and Germany – being the largest producers of flavoured & national spirits – account for the largest GVA effects. The overall economic results for flavoured & national spirits are summarised in Table 16.

Figure 59: Employment results by type of effect (for flavoured & national spirits)



Source: IHS (2021).

Figure 60: GVA effects by country (for flavoured & national spirits)



Source: IHS (2021).

Table 18: Overall economic effects of flavoured & national spirits in the EU+ (incl. production, retail trade & catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
Italy	**3 669**	1 319	1 504	*2 823*	846	**57 242**	20 128	23 523	*43 651*	13 591	**1 367**	437	540	*977*	390
Germany	**2 764**	870	1 231	*2 100*	664	**51 057**	22 301	18 987	*41 288*	9 769	**1 066**	293	463	*756*	310
France	**1 465**	565	542	*1 107*	359	**22 399**	10 887	7 023	*17 910*	4 489	**690**	236	249	*485*	206
Spain	**1 309**	625	370	*995*	314	**24 848**	12 592	6 789	*19 381*	5 467	**433**	179	119	*298*	135
United Kingdom	**1 219**	481	389	*870*	348	**21 558**	12 370	5 059	*17 430*	4 129	**402**	128	124	*251*	150
Ireland	**495**	304	125	*429*	66	**4 197**	2 622	957	*3 580*	617	**114**	61	29	*90*	24
Poland	**455**	94	260	*355*	101	**18 219**	4 227	10 155	*14 382*	3 838	**149**	25	79	*105*	45
Austria	**436**	219	139	*358*	78	**6 363**	3 595	1 788	*5 383*	980	**160**	72	51	*123*	37
Netherlands	**411**	145	174	*319*	92	**7 755**	4 258	2 278	*6 537*	1 219	**119**	34	49	*83*	36
Czech Republic	**374**	168	135	*303*	72	**13 475**	7 056	4 186	*11 242*	2 233	**121**	46	43	*88*	33
Switzerland	**372**	138	123	*261*	111	**4 747**	2 824	971	*3 795*	952	**70**	22	22	*44*	26
Hungary	**328**	144	122	*266*	61	**17 373**	9 837	4 965	*14 802*	2 571	**120**	42	40	*82*	38
Belg/Lux	**286**	89	127	*216*	71	**3 889**	1 775	1 355	*3 131*	758	**121**	32	53	*85*	36
Romania	**251**	108	82	*190*	60	**14 352**	6 953	4 070	*11 022*	3 329	**62**	21	20	*41*	21
Greece	**213**	100	78	*178*	35	**6 012**	3 125	1 881	*5 006*	1 006	**66**	26	24	*50*	15
Portugal	**195**	92	55	*147*	48	**5 714**	2 831	1 527	*4 358*	1 357	**63**	24	17	*41*	21
Norway	**170**	49	73	*122*	47	**1 593**	765	473	*1 237*	356	**66**	17	26	*43*	23
Denmark	**165**	68	60	*128*	37	**3 067**	1 925	721	*2 646*	421	**66**	22	23	*46*	20
Croatia	**153**	78	40	*119*	34	**6 455**	3 518	1 582	*5 100*	1 355	**50**	19	13	*31*	18
Slovak Republic	**151**	67	52	*119*	32	**7 422**	4 985	1 551	*6 536*	886	**50**	21	15	*36*	14
Sweden	**127**	35	54	*90*	37	**1 658**	722	550	*1 272*	386	**50**	12	20	*32*	17
Bulgaria	**114**	54	33	*87*	27	**12 805**	8 092	2 547	*10 639*	2 166	**32**	11	8	*19*	13
Finland	**108**	38	44	*83*	25	**1 763**	861	577	*1 438*	325	**45**	13	18	*32*	14
Latvia	**60**	23	23	*46*	14	**2 441**	1 087	828	*1 915*	526	**17**	5	6	*11*	6
Slovenia	**42**	16	15	*31*	11	**1 390**	697	390	*1 087*	303	**15**	5	5	*10*	6
Lithuania	**36**	13	14	*28*	8	**1 348**	575	483	*1 058*	290	**9**	3	3	*6*	3
Estonia	**29**	11	12	*23*	6	**1 128**	625	317	*942*	186	**9**	3	3	*6*	3
Cyprus	**25**	13	7	*20*	5	**787**	523	139	*662*	126	**7**	2	2	*4*	2
Malta	**13**	7	4	*11*	2	**316**	186	88	*273*	42	**4**	2	1	*3*	1
EU+	**15 435**	5 934	5 888	*11 823*	3 612	**321 374**	151 942	105 760	*257 701*	63 673	**5 542**	1 814	2 064	*3 878*	1 664

Source: IHS (2021).

7.7 Scotch whisky (GI)

7.7.1 Descriptives about Scotch whisky production and consumption

Scotch whisky is without a doubt one of the most iconic spirits products made in Europe. For this reason, it has been registered as a proteced geographical indication (GI) in 1989 (file number: PGI-GB-01854). Its production requirements are recorded in detail in the related technical file,[67] according to which Scotch whisky…:

- **(a)** …has been distilled at a distillery in Scotland from water and malted barley (to which only whole grains of other cereals may be added) all of which have been

  (i) processed at that distillery into a mash,

  (ii) converted at that distillery into a fermentable substrate only by endogenous enzyme systems, and

  (iii) fermented at that distillery only by the addition of yeast;

- **(b)** …has been distilled at an alcoholic strength by volume of less than 94.8 per cent so that the distillate has an aroma and taste derived from the raw materials used in, and the method of, its production;
- **(c)** …has been matured only in oak casks of a capacity not exceeding 700 litres;
- **(d)** …has been matured only in Scotland;
- **(e)** …has been matured for a period of not less than three years;
- **(f)** …has been matured only in an excise warehouse or a permitted place;
- **(g)** …that retains the colour, aroma and taste derived from the raw materials used in, and the method of, its production and maturation;
- **(h)** …to which no substance has been added, or to which no substance has been added except

  (i) water,

  (ii) plain caramel colouring, or

  (iii) water and plain caramel colouring;

- **(i)** …has a minimum alcoholic strength by volume of 40 %.

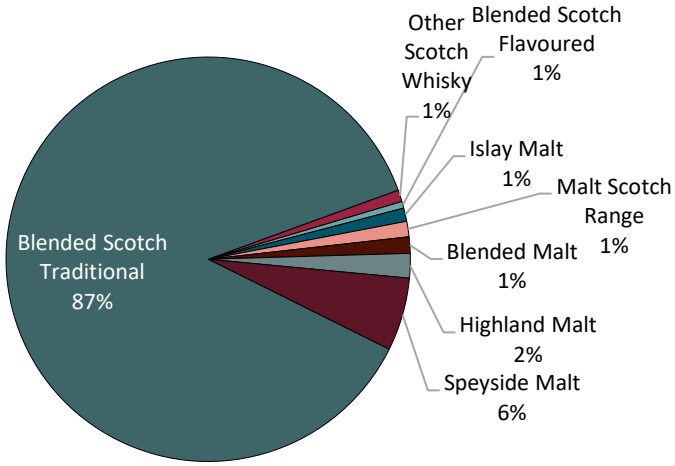
There are five permitted sorts of Scotch whisky. The most prominent is probably *Single Malt Scotch Whisky* that must be produced in still pots at a single distillery only from water, malted barley and yeast. If two or more Single Malts are blended, the resulting product can be labeled *Blended Malt Scotch Whisky*. A whisky produced in a single distillery that is not a Single Malt, is called *Single Grain Scotch Whisky* (which can also be blended and would then become *Blended Grain Scotch Whisky.* Blends of any number of

[67] https://www.gov.uk/government/publications/scotch-whisky-technical-file

Single Malts with any number of Single Grains are labeled *Blended Scotch Whisky*. The distinguishable regions that are protected within the Scotch whisky GI are the Highlands, the Lowlands, Speyside as well as the localities of Campbeltown and Islay.

The Scotch whisky producer's turnover is not published. We conduct an estimation based on IWSR and Eurostat data as described in section 2.2. The estimation yields a production turnover in 2019 of about 6.58 billion Euros;[68] hence, only very little whisky made in the United Kingdom is not Scotch (given the overall UK whisky turnover of 6.6 billion Euros from section 7.1). The figure has increased considerably compared to 2015 (6.07 billion Euros). The decomposition by subcategories is shown in Figure 61 which shows that *Blended Scotch* is by far the most dominant sort.

Figure 61: Sorts of Scotch whisky by produced volume (2019)

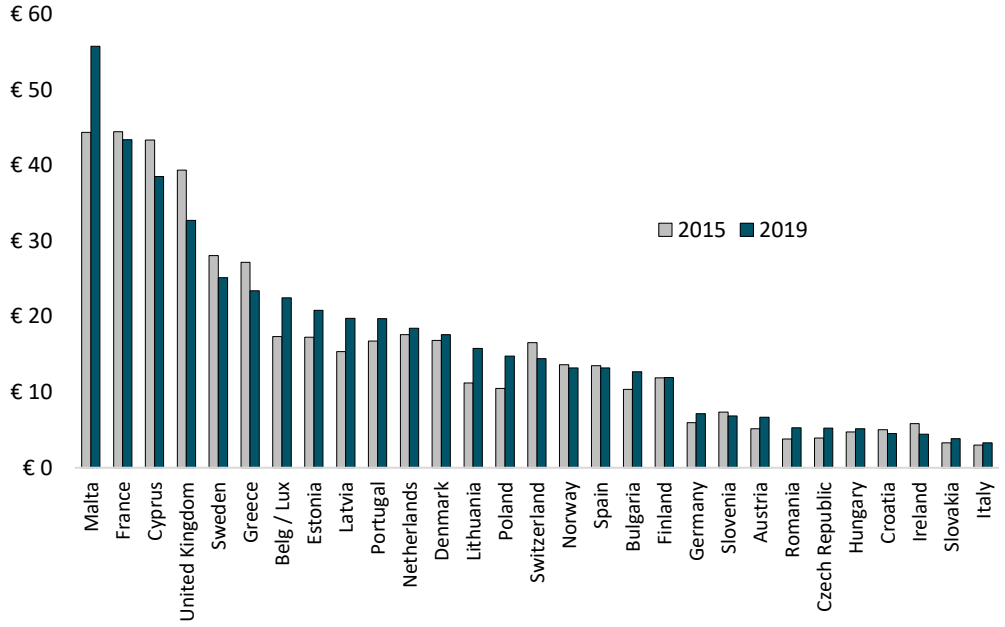


Source: IWSR (2021).

The consumption pattern of Scotch whisky is depicted in Figure 62. Consumers in Malta, France and Cyprus buy more Scotch per capita than those in the United Kingdom. Irish consumers, on the other hand, seem to prefer their own product and spent only 4.42 Euros on Scotch whisky in 2019. The fact that Scotch whisky is mainly produced for foreign markets both inside and outside Europe can also be seen in Figure 63: Obviously, the United Kingdom can be the only exporting country of Scotch whisky. The single largest importer in Europe is France. The lion's share of Scotch whisky exports, however, goes to the rest of the world. More than two thirds of all produced Scotch whisky is sold outside the EU+.

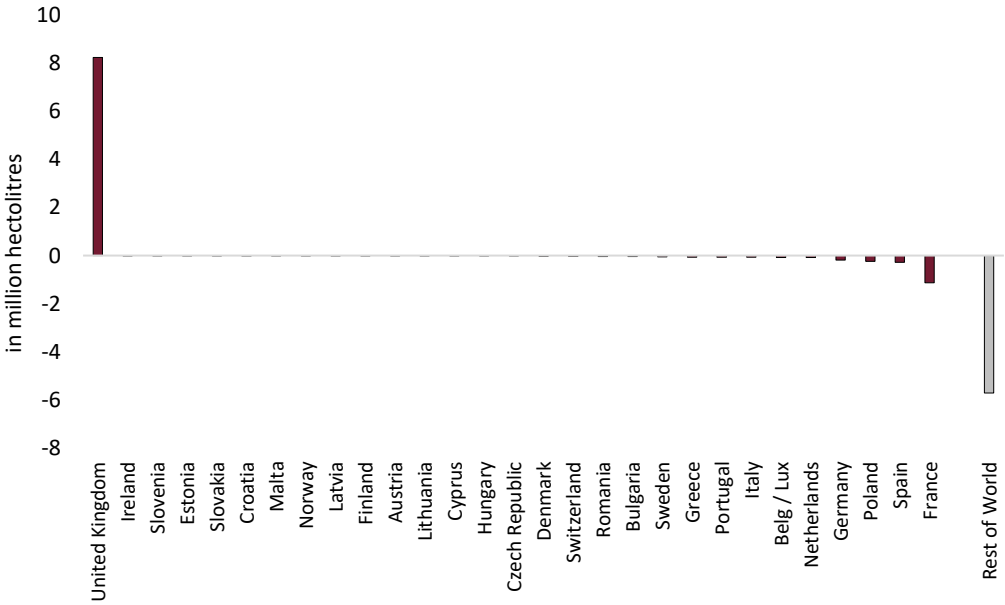
[68] As the United Kingdom is by definition the only producing country, a detailed figure as shown for the entire category of whisky would not be informative and is therefore not provided here.

Figure 62: Annual Scotch whisky consumption per capita (only adults)



Source: IWSR (2021).

Figure 63: Quantity of sold Scotch <u>from country …</u> minus quantity <u>sold in country …</u>



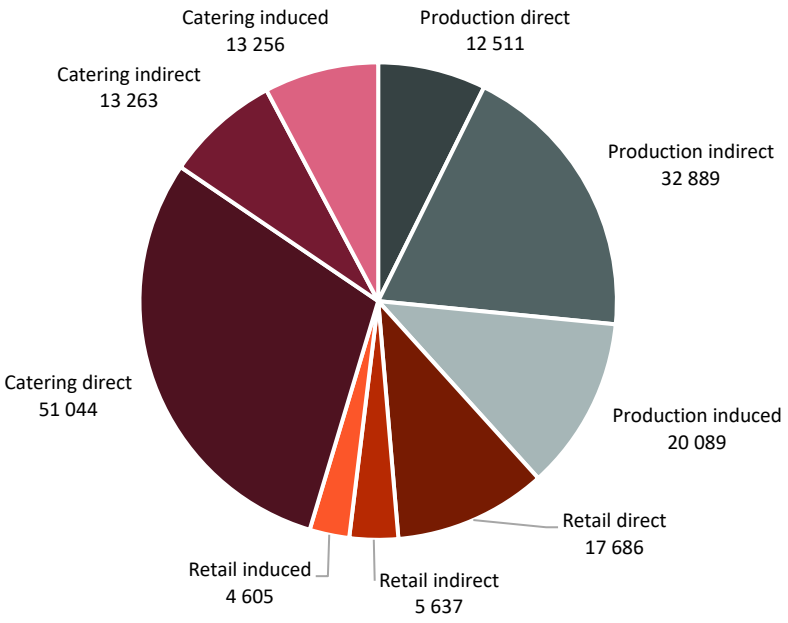
Source: Own calculations on the basis of IWSR (2021).

7.7.2 Results

Scotch whisky production and consumption in the EU+ can be associated with a gross value added (GVA) effect of about 11.7 billion Euros in 2019 which is about three quarters of the overall whisky effect in the EU+ (see section 7.1). The number of jobs supported by Scotch whisky amounts to 171,000 per year. We estimate the fiscal effects from economic activities related to Scotch production and consumption to 4.1 billion Euros. Another 3.9 billion Euros must be added in value added tax (VAT) and excise duties on the actual consumption of Scotch whisky in the EU+.

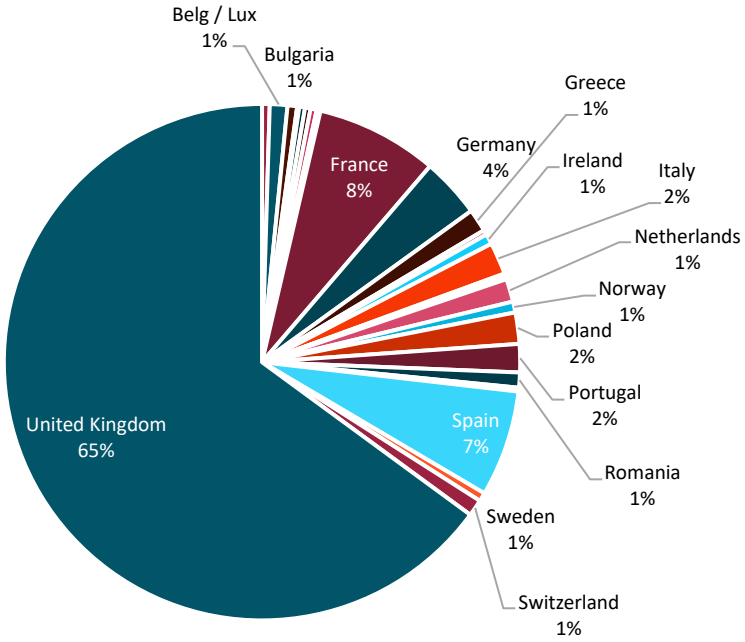
Figure 64 presents how the Scotch whisky employment effects are composed by activities. Unsurprisingly, the chart shows considerable production effects. Note that the chart for whisky in general (see Figure 32 in section 7.1) showed slightly larger shares of consumption effects as they included whiskies from the US, Japan etc. Figure 65 shows the GVA decomposition by country. Interestingly, the United Kingdom accounts for only 65 % of overall GVA related to Scotch whisky; the reason is that all direct production is, of course, taking place in Scotland, but (1) intermediate goods can be delivered from outside the UK and (2) all kinds of consumption-related activities (trading and catering) are taking place in other countries as well. The latter effect pushes France to the second place. Spain makes it to the third rank; Spaniards consume much less Scotch whisky than the French, but their on-premise share is much higher, which increases economic effects in the catering sector (as sales prices are much higher on-premise). The overall economic results for Scotch whisky are summarised in Table 19.

Figure 64: Employment results by type of effect (for Scotch whisky)



Source: IHS (2021).

Figure 65: GVA effects by country (for Scotch whisky)



Source: IHS (2021).

Table 19: Overall economic effects of Scotch whisky in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
United Kingdom	**7 609**	3 818	2 351	6 170	1 440	**68 830**	21 524	30 097	51 621	17 209	**2 623**	1 209	779	1 988	635
France	**895**	394	271	665	230	**15 529**	9 234	3 408	12 642	2 886	**408**	156	120	277	131
Spain	**781**	431	162	594	187	**15 976**	9 707	3 013	12 720	3 256	**256**	123	51	175	81
Germany	**439**	105	160	265	174	**8 558**	3 757	2 328	6 085	2 473	**173**	36	59	95	78
Italy	**235**	77	77	154	81	**4 409**	1 928	1 180	3 108	1 301	**89**	25	28	53	36
Poland	**230**	112	69	182	48	**11 804**	7 609	2 365	9 974	1 830	**72**	30	20	51	22
Portugal	**207**	113	46	159	48	**6 261**	3 741	1 169	4 910	1 351	**65**	30	13	43	22
Netherlands	**169**	60	63	122	47	**3 422**	1 997	817	2 815	608	**49**	14	18	32	17
Greece	**168**	93	49	142	26	**5 155**	3 390	1 024	4 414	741	**49**	24	14	38	11
Belg/Lux	**129**	42	49	92	38	**1 796**	877	516	1 393	402	**55**	15	21	36	19
Switzerland	**122**	42	39	81	41	**1 560**	929	286	1 215	345	**23**	6	7	13	9
Romania	**110**	56	28	85	26	**6 522**	3 743	1 346	5 088	1 433	**26**	10	7	17	9
Norway	**80**	4	44	49	31	**416**	93	136	228	188	**27**	2	13	15	13
Ireland	**76**	6	41	47	29	**830**	200	381	581	249	**20**	2	10	11	9
Bulgaria	**70**	38	15	53	16	**8 174**	5 815	1 072	6 886	1 288	**19**	8	4	11	8
Sweden	**63**	17	26	43	20	**789**	316	262	578	211	**26**	6	10	16	9
Austria	**56**	23	17	41	15	**841**	440	211	651	190	**21**	8	6	14	7
Denmark	**45**	14	18	32	14	**803**	448	202	650	154	**18**	5	7	11	7
Cyprus	**42**	24	10	34	8	**1 389**	989	200	1 189	200	**11**	4	3	7	4
Czech Republic	**40**	14	14	27	13	**1 642**	816	421	1 237	405	**14**	4	4	8	5
Hungary	**35**	14	12	26	10	**2 091**	1 227	467	1 693	397	**14**	4	4	8	6
Finland	**22**	5	10	15	7	**338**	116	128	244	95	**10**	2	5	6	4
Slovak Republic	**18**	7	6	12	6	**866**	529	169	699	167	**6**	2	2	4	2
Lithuania	**16**	8	4	12	4	**709**	459	119	578	131	**4**	2	1	3	1
Croatia	**16**	9	3	12	4	**724**	450	118	568	156	**5**	2	1	3	2
Malta	**15**	9	4	13	2	**378**	238	94	332	46	**4**	2	1	3	1
Latvia	**11**	5	4	8	3	**553**	310	125	435	117	**3**	1	1	2	1
Slovenia	**10**	4	3	7	3	**329**	182	75	257	73	**4**	1	1	2	1
Estonia	**6**	3	2	5	2	**285**	177	62	238	46	**2**	1	1	1	1
EU+	**11 718**	5 548	3 597	9 145	2 574	**170 980**	81 241	51 789	133 030	37 950	**4 097**	1 734	1 211	2 945	1 152

Source: IHS (2021).

7.8 Cognac (GI)

7.8.1 Descriptives about Cognac production and consumption

Cognac is one of the most distinguished products in the spirits sector and, therefore, was among the very first spirits to be registered as geographical indications (GIs) in 1989 (file number: PGI-FR-02043).[69] The three protected labels are "Cognac", "Eau-de-vie de Cognac" or "Eau-de-vie des Charentes". The latter refers to its geographical origin: The regions protected under the Cognac GI are located in the French Departments Charente and Charente-Maritime as well as some areas in Dordogne and Deux-Sèvres. The protected area can be further distinguished into six regions (called *crus*) that produce different qualities: Grande Champagne, Petite Champagne, Borderies, Fins Bois, Bons Bois and Bois Ordinaires.

The related technical file describes in detail how the Cognac production process is to be conducted. Particular emphasis is placed on where the grapes are coming from, when and how they are used for wine production and how the distillation process is carried out. The description mentions eleven requirements. It…

- **(1)** …names the varieties of white grapes to be used for wine production,
- **(2)** …defines how the grapes are to be cultivated (density, space between rows etc.),
- **(3)** …sets limits for the annual yield,
- **(4)** …prohibits centrifugal vane pumps to transfer the grapes,
- **(5)** …prohibits continuous screw presses to produce must,
- **(6)** …prohibits enrichments during the fermentation process,
- **(7)** …defines parameters for the wine to be used for distillation (minimum and maximum alcohol content and maximum acidity content)
- **(8)** …describes in detail how the doublebatch-distillation process is to be carried out and defines the equipment to be used,
- **(9)** …defines that Cognac needs to be matured in the protected area in oak containers for at least two years,
- **(10)** …describes permitted finishing techniques (blending, coloring, decoction of oak chips etc.), and
- **(11)** …names a number of transitional measures to be considered.

The estimated production turnover of Cognac in 2019 was 3.13 billion Euro.[70] Given the estimated turnovers for the entire category of brandy as shown in subsection 7.2, only

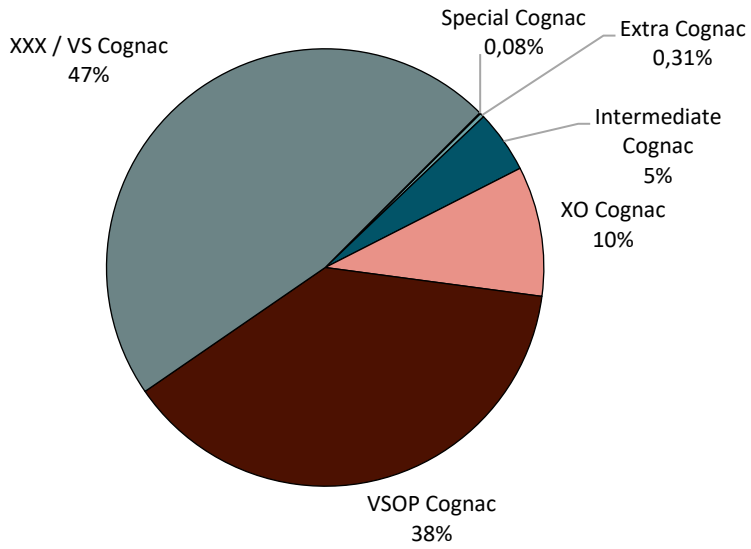
[69] https://p9d8a6h2.stackpathcdn.com/wp-content/uploads/2015_01_07_Cognac_product_specification_controlled_appellation_of_origin.pdf

[70] As France is by definition the only producing country, a detailed figure as shown for the entire category of brandy would not be informative and is therefore not provided here.

about 4 % of brandy production turnover in France does not stem from Cognac. The numbers have increased considerably in recent years (the estimated Cognac production turnover was 2.52 billion Euros in 2015). The validation of those numbers via Eurostat trade data remains the same as in the brandy subsection (7.2) as virtually all French brandy is Cognac.

Cognac production can be further decomposed by quality grades that basically impose regulations in terms of aging durations and blending. The categories *VS* ('Very Superior') and *VSOP* ('Very Superior Old Pale'), that require two resp. four years of aging for the youngest brandy involved in the blend, make up for about 85 % of the overall volume. The even more sophisticated sorts, like XO ('Extra Old'; at least 10 years of aging) and the ones that require 14 or even more years of aging, are smaller in volume (but obviously larger in value).

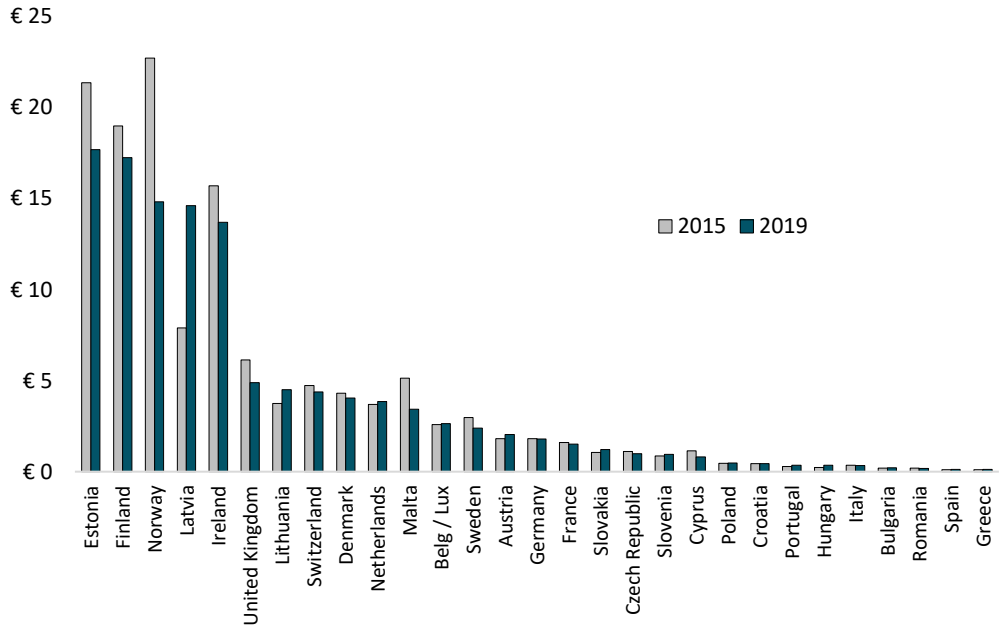
Figure 66: Sorts of Cognac by produced volume (2019)



Source: IWSR (2021).

The Cognac consumption pattern is shown in Figure 67. It turns out that Cognac is particularly popular in Scandinavia and Ireland but – as already observed in the brandy subsection – only little is sold in France. It also seems that almost none is sold in countries that have their own brandy specialties, like in Bulgaria or Spain. If we widen the view to the global perspective as in Figure 68, it becomes obvious that by far most Cognac is sold outside the EU+: The grey column must necessarily indicate that the rest of the world is a net importer of Cognac (as France can be the only exporter). But the interesting fact about the figure is that the share of extra-EU Cognac exports is much larger than, e. g., for Scotch whisky (for which also only one country in the EU+ can be an exporter).

Figure 67: Annual Cognac consumption per capita (only adults)



Source: IWSR (2021).

Figure 68: Quantity of sold Cognac <u>from country …</u> minus quantity <u>sold in country …</u>

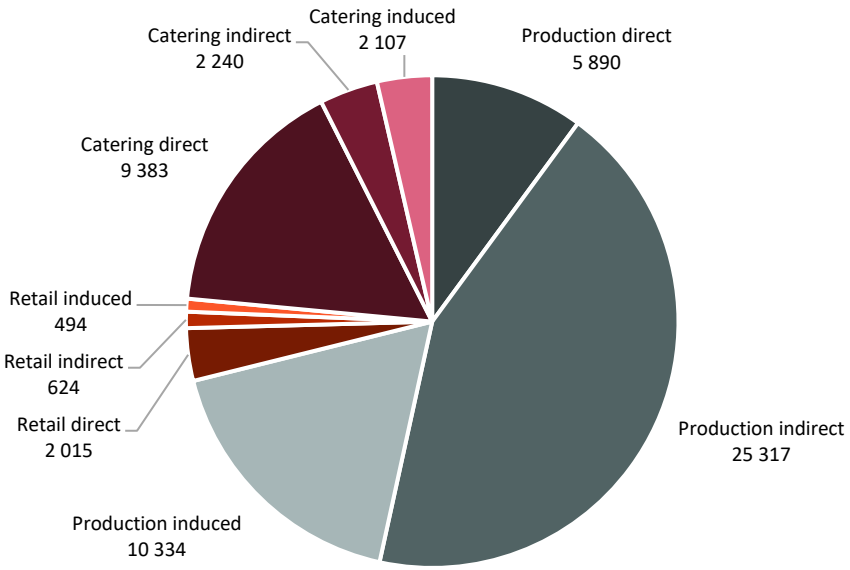
Source: Own calculations on the basis of IWSR (2021).

7.8.2 Results

The production and consumption of Cognac in the EU+ is related to a gross value added (GVA) effect of about 4.2 billion Euros in 2019 which is more than half of the overall brandy effect in the EU+ (see section 7.2). The number of jobs per year supported by Cognac is more than 58,000. The fiscal effects resulting from economic activities around the production and consumption of Cognac are estimated to 1.9 billion Euros. Another 454 million Euros are added in value added tax (VAT) and excise duties on the consumption of Cognac in the EU+. Hence, we see the observation confirmed that, of course, all Cognac is produced in the EU+, resulting in considerable tax flows on employment, profits etc., but as most Cognac is exported to countries outside the EU+, the VAT and excise revenue collected by European authorities is rather low.

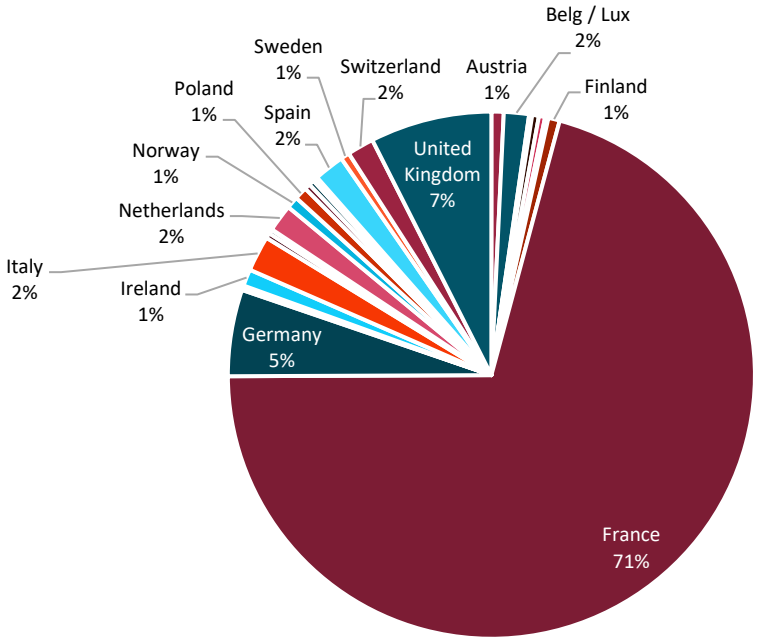
Figure 69 presents how Cognac employment effects are composed by economic activities. The chart shows much larger production shares than the one shown for Scotch whisky (see Figure 64 in section 7.7). Both products should be comparable as they are produced exclusively in the EU+ and consumed all over the world. However, as only very little Cognac is consumed in the EU+, the consumption-related activities only represent a good quarter of the overall employment effects. Figure 70 shows the GVA decomposition by country. Now, France accounts for the lion's share (71 %) as all direct and most indirect Cognac production take place there. Other countries can benefit from consumption-related effects and to some extent from delivering machinery or services. The overall economic results for Cognac are summarised in Table 20.

Figure 69: Employment results by type of effect (for Cognac)



Source: IHS (2021).

Figure 70: GVA effects by country (for Cognac)



Source: IHS (2021).

Table 20: Overall economic effects of Cognac in the EU+ (including production, retail trade and catering) sorted by overall GVA

	Gross value added (GVA, mill. €)					Employment (jobs per year)					Fiscal effects (mill. €, excl. VAT and excise on spirits)				
	overall	direct	indirect	*dir.+ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced	**overall**	direct	indirect	*dir. + ind.*	induced
France	**2 976**	909	1 510	2 419	557	**33 337**	6 414	19 963	26 377	6 960	**1 481**	435	715	1 150	331
United Kingdom	**314**	118	105	223	90	**5 695**	3 223	1 395	4 618	1 078	**103**	31	33	64	39
Germany	**223**	40	106	146	77	**4 164**	1 496	1 552	3 048	1 116	**89**	14	40	54	35
Italy	**92**	11	47	58	34	**1 553**	281	729	1 010	542	**37**	4	18	22	15
Spain	**78**	7	41	48	30	**1 444**	151	758	909	535	**28**	2	14	16	12
Netherlands	**70**	20	32	53	18	**1 330**	680	415	1 095	235	**21**	5	9	14	7
Switzerland	**69**	21	26	47	22	**853**	466	200	666	188	**13**	3	5	8	5
Belg/Lux	**65**	8	38	46	19	**793**	171	416	587	206	**29**	3	17	19	9
Ireland	**43**	19	14	33	10	**872**	669	110	780	92	**12**	5	3	8	4
Poland	**33**	7	16	22	11	**1 445**	474	564	1 038	408	**11**	2	5	7	4
Austria	**32**	14	11	25	7	**463**	241	134	375	88	**12**	4	4	9	3
Norway	**31**	7	14	21	9	**295**	149	78	227	69	**12**	3	5	7	4
Finland	**30**	12	11	23	6	**536**	308	144	452	84	**12**	4	5	9	4
Sweden	**23**	3	12	15	8	**259**	57	124	181	78	**9**	1	5	6	3
Czech Republic	**17**	5	7	12	5	**686**	292	229	521	165	**6**	1	2	4	2
Denmark	**16**	4	7	11	5	**263**	125	85	210	52	**7**	1	3	4	2
Portugal	**15**	2	7	9	5	**445**	82	207	289	155	**5**	1	2	3	2
Romania	**14**	3	6	9	5	**758**	195	311	505	253	**4**	1	2	2	2
Latvia	**13**	7	4	10	3	**680**	440	122	562	117	**4**	1	1	2	1
Lithuania	**11**	6	3	8	2	**500**	337	80	418	83	**3**	1	1	2	1
Slovak Republic	**10**	4	4	7	3	**483**	296	109	405	78	**3**	1	1	2	1
Estonia	**8**	4	3	7	2	**414**	292	73	365	49	**3**	1	1	2	1
Hungary	**8**	1	4	5	3	**376**	133	138	271	105	**3**	0	1	2	1
Greece	**4**	1	2	3	1	**111**	26	50	76	35	**1**	0	1	1	0
Bulgaria	**3**	1	1	2	1	**354**	144	114	259	95	**1**	0	0	1	0
Slovenia	**3**	1	1	2	1	**87**	33	30	63	24	**1**	0	0	1	0
Croatia	**3**	1	1	2	1	**126**	65	30	95	31	**1**	0	0	1	0
Cyprus	**2**	1	0	1	0	**49**	29	10	39	9	**0**	0	0	0	0
Malta	**1**	1	0	1	0	**31**	18	9	26	5	**0**	0	0	0	0
EU+	**4 206**	1 236	2 034	3 270	937	**58 404**	17 288	28 181	45 468	12 935	**1 911**	525	893	1 418	493

Source: IHS (2021).

Table 21: Summary – Economic effects by category (including production, retail trade and catering) for the year 2019

	Overall GVA		Overall employment		Overall fiscal effects	
	billion € p.a.	share of EU+ total	jobs p.a.	share of EU+ total	billion € p.a.	share of EU+ total
Category						
Whisky	15.7	26.2 %	263,720	21.5 %	5.4	25.1 %
…of which Scotch whisky	*11.7*	*19.5 %*	*170,980*	*13.9 %*	*4.1*	*19.1 %*
Brandy	7.6	12.7 %	145,415	11.8 %	3.1	14.6 %
…of which Cognac	*4.2*	*7.0 %*	*58,404*	*4.8 %*	*1.9*	*8.9 %*
Vodka	10.3	17.1 %	264,826	21.6 %	3.6	17.0 %
Gin	6.4	10.6 %	122,097	9.9 %	2.1	10.0 %
Rum	3.7	6.2 %	89,286	7.3 %	1.3	6.0 %
FlavNat	15.4	25.7 %	321,374	26.2 %	5.5	25.9 %
Others	0.9	1.5 %	21,082	1.7 %	0.3	1.4 %
Total	**60.0**	**100.0 %**	**1,227,800**	**100.0 %**	**21.4**	**100.0 %**

Source: IHS (2021).

8 Appendix B: Data sheets by country

The tables on the following pages display detailed results for the 30 countries in the EU+ (i. e. EU27 + United Kingdom + Norway + Switzerland. Belgium and Luxembourg are considered as one country (like in IWSR)). Each table consists of four parts. In the following, we will explain the tables step by step using Austria as an example:

A – Production: The upper array displays some basic information about the particular country[71] and about spirits production in that country. We show the volume of spirits from that country being sold worldwide in 2019 (first line, in hectolitres, see IWSR); this volume can roughly be interpreted as that country's production volume. We also show how this figure has developed between 2015 and 2019 (second line). The third line displays that country's spirits production turnover as reported by Eurostat for 2018 and predicted for 2019 using IWSR data. The remaining lines show the country's top-selling spirits products and its largest export destination (see IWSR).

The table below shows the economic effects of spirits production. In the case of Austria: The overall GVA effect in 2019 was 307.7 million Euros; most of this was indirect at producers of intermediate goods. This number can be decomposed into production activities *in* Austria due to domestic spirits products (160.5 mill. €) and indirect/induced production activities taking place *in* Austria that are actually due to *other* countries' spirits companies (147.2 mill. €; e. g. when Austria delivers intermediate products to the spirits sector in France). This is why countries without a spirits sector of their own may nonetheless report production effects. The table also shows the opposite effect; i. e. the effects triggered by Austrian spirits producers in other EU+ countries (57.7 mill. €). We also report the employment effects (in jobs per year) and relate them to that country's overall employment. The final line shows the fiscal effects.

B – Consumption: The table shows some basic information about spirits consumption in the shaded array (all of this stems from the IWSR database). We show the volume of spirits sold in that country and how this number has developed between 2015 and 2019. It also shows the on-premise share; i. e. how much of it has been consumed in bars, restaurants etc. The next lines show the per-adult sales (in Euros) and the growth rate between 2015 and 2019. The final two lines name that country's most favoured products and the largest import country. An *(I)* indicates that most spirits consumed in that country are made by international brands that produce in many countries so that the actual country of origin cannot be determined. The country behind the *(I)* would then name the second largest country of origin.

[71] We show population figures (in 2019, see Eurostat 2021e) and the annual final consumption expenditure per capita (in 2019, see Eurostat 2021g). This gives an idea of the particular country's size and development stage.

The table below shows the economic effects of consumption (i. e. on- and off-premise sales). Again, the first line shows the effect that stems from spirits being consumed in Austria; the second line shows the effect that Austria experiences when spirits are sold in other countries. The third line displays the opposite effect (effects to other countries when spirits are sold in Austria). Again, we show employment effects and fiscal effects. Note that the fiscal effects consist of income taxes, profit taxes etc. generated by all kinds of economic activities related to spirits, and VAT/excise duties paid for the actual spirits products.

C – Environmental aspects: The shaded array gives some basic information about ecological aspects. We report the share of spirits related CO_2 equivalents (in 1,000 tonnes) that this country is accountable for (only 0.6 % for Austria as only little production is taking place here and consumption activities do not emit that much GHG). We also show the amount of land used for spirits related agricultural activities (in hectares).

The table below shows the ecological effects in terms of CO_2 eq. emissions. Again, the table consists of production and consumption activities (the latter is further decomposed into on- and off-premise, i. e. catering und retail). We also present the usual decomposition into a) in Austria due to Austrian spirits production/ consumption, b) in Austria due to other countries' spirits production/consumption and c) in other countries due to Austrian spirits production/consumption.

TOTAL: We present the key numbers at the bottom of the table. We show the overall GVA effect (in million Euros) alongside with the EU+ share and that country's rank among EU+ countries. The tables also show the employment, fiscal effects and CO_2 eq. emissions in the same manner.

8.1 Austria

A. Production

Population:	*8.8 mill.*
Annual final consumption expenditure per capita:	*€ 31,854*
Spirits from Austria sold worldwide (in 1,000 hectolitres):	*95.1*
Δ 2015-2019 (in %):	*-7.1*
Austrian spirits production turnover (in mill. €):	*198.6*
Top-selling Austrian spirits products:	*Rum, Liqueurs, Fruit Eaux de Vie*
Largest export country:	*Germany*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Austria	**307.7**	**72.6**	**160.4**	**232.9**	**74.8**
due to Austrian activities in Austria	160.5	72.6	65.7	138.3	22.2
due to other EU+ countries in Austria	147.2	0.0	94.7	94.7	52.5
due to Austria in other EU+ countries	*57.7*	*0.0*	*36.2*	*36.2*	*21.5*
Employment effect *(jobs per year)*	**3,824**	**799**	**2,094**	**2,892**	**931**
(in % of total Austrian employment)	0.09%	0.02%	0.05%	0.07%	0.02%
Fiscal returns (in mill. €)	**119.4**	**24.7**	**61.0**	**85.7**	**33.8**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Austria (in 1,000 hectolitres):	*285.8*
Δ 2015-2019 (in %):	*+2.2*
On-premise share (of volume):	*46 %*
Spirits sold in Austria (in € per adult):	*€ 83.9*
Δ 2015-2019 (in %):	*+13.0*
Most favoured products:	*Bitters/Spirit Aperitifs, Vodka, Rum*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Austria	**695.8**	**419.2**	**155.4**	**574.6**	**121.2**
due to Austrian activities in Austria	601.3	419.2	114.1	533.3	68.0
due to other EU+ countries in Austria	94.5	0.0	41.3	41.3	53.3
due to Austria in other EU+ countries	*71.9*	*0.0*	*30.8*	*30.8*	*41.1*
Employment effect *(jobs per year)*	**10,926**	**7,509**	**1,901**	**9,410**	**1,516**
(in % of total employment)	0.26%	0.18%	0.04%	0.22%	0.04%
Fiscal returns (in mill. €)	**570.9**	**137.1**	**54.2**	**191.3**	**57.1**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.6 %*
indirect land use:	*3,727 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**89.3**	**13.3**	**58.7**	**72.0**	**17.3**
due to Austrian activities in Austria	40.3	13.3	23.4	36.7	3.6
due to other EU+ countries in Austria	49.0	0.0	35.3	35.3	13.7
due to Austria in other EU+ countries	*68.3*	*13.3*	*43.8*	*57.1*	*11.3*
Retail (off-premise)	**11.2**	**1.4**	**5.3**	**6.7**	**4.5**
due to Austrian activities in Austria	5.0	1.4	2.3	3.7	1.3
due to other EU+ countries in Austria	6.2	0.0	3.0	3.0	3.1
due to Austria in other EU+ countries	*9.1*	*1.4*	*4.4*	*5.8*	*3.3*
Catering (on-premise)	**51.8**	**8.5**	**22.4**	**31.0**	**20.8**
due to Austrian activities in Austria	32.9	8.5	14.9	23.4	9.5
due to other EU+ countries in Austria	18.9	0.0	7.6	7.6	11.3
due to Austria in other EU+ countries	*56.1*	*8.5*	*24.7*	*33.2*	*22.9*

TOTAL

	Value *(%)*	***in % of EU+ effects***	***= Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Austrian GVA)*	1,003.5 *(0.28 %)*	*1.7 %*	*11.*
Employment (in jobs per year): *(in % of Austrian employment)*	14,750 *(0.34 %)*	*1.2 %*	*16.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Austrian government revenue)*	690.3 *(0.35 %)*	*1.5 %*	*14.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Austrian total CO_2 eq. emissions)*	152.3 *(0.25 %)*	*0.8 %*	*19.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.2 Belgium and Luxembourg (Belg/Lux)

A. Production

Population:	*11.9 mill.*
Annual final consumption expenditure per capita:	*€ 31,713*
Spirits from Belg/Lux sold worldwide (in 1,000 hectolitres):	*50.9*
Δ 2015-2019 (in %):	*- 22.5*
Belg/Lux spirits production turnover (in mill. €):	*85.6*
Top-selling Belg/Lux spirits products:	*Liqueurs, Genever, Gin*
Largest export country:	*United Kingdom (duty free)*

Economic Effects from production:

		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Belg/Lux	**325.6**	**12.5**	**213.7**	**226.2**	**99.4**
due to Belg/Lux activities in Belg/Lux	52.3	12.5	31.8	44.3	8.0
due to other EU+ countries in Belg/Lux	273.3	0.0	181.9	181.9	91.4
due to Belg/Lux in other EU+ countries	*34.2*	*0.0*	*23.3*	*23.3*	*10.8*
Employment effect *(jobs per year)*	**3,522**	**191**	**2,276**	**2,467**	**1,055**
(in % of total *Belg/Lux* employment)	0.07%	0.00%	0.04%	0.05%	0.02%
Fiscal returns (in mill. €)	**146.4**	**5.1**	**92.0**	**97.1**	**49.3**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Belg/Lux (in 1,000 hectolitres):	*388.1*
Δ 2015-2019 (in %):	*-3.4*
On-premise share (of volume):	*30 %*
Spirits sold in Belg/Lux (in € per adult):	*€ 104.02*
Δ 2015-2019 (in %):	*+25.0*
Most favoured products:	*Scotch Whisky, Liqueurs, Gin*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:

		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in *Belg/Lux*	**606.8**	**269.7**	**190.8**	**460.5**	**146.3**
due to Belg/Lux activities in Belg/Lux	453.9	269.7	116.4	386.1	67.8
due to other EU+ countries in Belg/Lux	152.9	0.0	74.4	74.4	78.5
due to Belg/Lux in other EU+ countries	*111.5*	*0.0*	*57.3*	*57.3*	*54.3*
Employment effect *(jobs per year)*	**9,179**	**5,529**	**2,067**	**7,596**	**1,583**
(in % of total employment)	0.18%	0.11%	0.04%	0.15%	0.03%
Fiscal returns (in mill. €)	**873.6**	**95.1**	**77.4**	**172.5**	**75.7**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.4%*
indirect land use:	*2,601 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**113.8**	**3.8**	**84.8**	**88.5**	**25.2**
due to Belg/Lux activities in Belg/Lux	23.3	3.8	17.9	21.7	1.6
due to other EU+ countries in Belg/Lux	90.5	0.0	66.9	66.9	23.6
due to Belg/Lux in other EU+ countries	*37.8*	*3.8*	*29.2*	*33.0*	*4.8*
Retail (off-premise)	**17.8**	**1.9**	**8.8**	**10.7**	**7.2**
due to Belg/Lux activities in Belg/Lux	8.5	1.9	4.2	6.1	2.4
due to other EU+ countries in Belg/Lux	9.3	0.0	4.6	4.6	4.8
due to Belg/Lux in other EU+ countries	*15.8*	*1.9*	*8.4*	*10.3*	*5.5*
Catering (on-premise)	**77.2**	**22.9**	**26.7**	**49.6**	**27.6**
due to Belg/Lux activities in Belg/Lux	50.6	22.9	16.4	39.2	11.3
due to other EU+ countries in Belg/Lux	26.7	0.0	10.4	10.4	16.3
due to Belg/Lux in other EU+ countries	*77.0*	*22.8*	*29.2*	*52.0*	*25.0*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Belg/Lux GVA)*	932.4 *(0.19 %)*	1.6%	*13.*
Employment (in jobs per year): *(in % of Belg/Lux employment)*	12,701 *(0.25 %)*	1.0%	*19.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Belg/Lux government revenue)*	1,020.1 *(0.38 %)*	2.2%	*9.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Belg/Lux total CO_2 eq. emissions)*	208.8 *(0.20 %)*	1.1%	*16.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

Note: IWSR considers Belgium and Luxembourg as one entity; we have followed this approach throughout this study. According to the official spirits production data released by Eurostat (2021a), spirits producers' turnovers in Luxembourg in 2018 have amounted to 0.6 million Euros; Belgium reports 100.1 million Euros. Hence, it seems safe to say that the lion's share (probably around 99 %) of the results reported in the table above will apply to Belgium.

8.3 Bulgaria

A. Production

Population:	*7.1 mill.*
Annual final consumption expenditure per capita:	*€ 6,644*
Spirits from Bulgaria sold worldwide (in 1,000 hectolitres):	*620.4*
Δ 2015-2019 (in %):	*-0.6*
Bulgarian spirits production turnover (in mill. €):	*226.7*
Top-selling Bulgarian spirits products:	*Brandy, Vodka, Whisky*
Largest export country:	*Poland*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Bulgaria	**172.7**	**23.0**	**113.8**	**136.7**	**36.0**
due to Bulgarian activities in Bulgaria	154.1	23.0	102.6	125.5	28.6
due to other EU+ countries in Bulgaria	18.6	0.0	11.2	11.2	7.4
due to Bulgarian in other EU+ countries	*81.6*	*0.0*	*50.1*	*50.1*	*31.5*
Employment effect *(jobs per year)*	**14,616**	**2,293**	**9,485**	**11,778**	**2,839**
(in % of total *Bulgarian* employment)	0.47%	0.07%	0.30%	0.38%	0.09%
Fiscal returns (in mill. €)	**51.2**	**4.8**	**29.6**	**34.4**	**16.8**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Bulgaria (in 1,000 hectolitres):	*754.9*
Δ 2015-2019 (in %):	*+4.2*
On-premise share (of volume):	*29 %*
Spirits sold in Bulgaria (in € per adult):	*€ 116.80*
Δ 2015-2019 (in %):	*+21*
Most favoured products:	*Brandy, Vodka, Scotch Whisky*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Bulgaria	**514.4**	**288.1**	**110.0**	**398.1**	**116.3**
due to Bulgarian activities in Bulgaria	499.9	288.1	104.1	392.2	107.7
due to other EU+ countries in Bulgaria	14.5	0.0	5.9	5.9	8.7
due to Bulgaria in other EU+ countries	*104.6*	*0.0*	*31.7*	*31.7*	*72.8*
Employment effect *(jobs per year)*	**60,618**	**43,948**	**7,592**	**51,540**	**9,078**
(in % of total employment)	1.93%	1.40%	0.24%	1.64%	0.29%
Fiscal returns (in mill. €)	**465.0**	**57.1**	**25.0**	**82.1**	**57.1**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*2.7%*
indirect land use:	*16,019 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**290.7**	**12.2**	**236.5**	**248.7**	**41.9**
due to Bulgarian activities in Bulgaria	260.0	12.2	215.4	227.5	32.5
due to other EU+ countries in Bulgaria	30.6	0.0	21.2	21.2	9.5
due to Bulgaria in other EU+ countries	*303.1*	*12.2*	*245.3*	*257.4*	*45.6*
Retail (off-premise)	**52.2**	**3.8**	**30.7**	**34.5**	**17.7**
due to Bulgarian activities in Bulgaria	47.8	3.8	28.5	32.4	15.4
due to other EU+ countries in Bulgaria	4.4	0.0	2.1	2.1	2.3
due to Bulgaria in other EU+ countries	*56.4*	*3.8*	*32.7*	*36.5*	*19.9*
Catering (on-premise)	**243.1**	**18.7**	**106.8**	**125.5**	**117.6**
due to Bulgarian activities in Bulgaria	223.8	18.7	97.6	116.3	107.5
due to other EU+ countries in Bulgaria	19.2	0.0	9.2	9.2	10.0
due to Bulgaria in other EU+ countries	261.7	18.7	107.4	126.1	135.6

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Bulgarian GVA)*	687.1 *(1.30 %)*	*1.1%*	*17.*
Employment (in jobs per year): *(in % of Bulgarian employment)*	75,234 *(2.40 %)*	*6.1%*	*7.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Bulgarian government revenue)*	516.2 *(2.19 %)*	*1.1%*	*20.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Bulg. total CO_2 eq. emissions)*	585.9 *(1.27 %)*	*3.0%*	*8.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.4 Croatia

A. Production

Population:	*4.2 mill.*
Annual final consumption expenditure per capita:	*€ 10,348*
Spirits from Croatia sold worldwide (in 1,000 hectolitres):	*153.1*
Δ 2015-2019 (in %):	*+ 0.7*
Croatian spirits production turnover (in mill. €):	*83.1*
Top-selling Croatian spirits products:	*Bitters/Spirit Aperitifs, Brandy, Liqueurs*
Largest export country:	*North Macedonia*

Economic Effects from production:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Croatia	**85.5**	**33.0**	**33.7**	**66.7**	**18.8**
due to Croatian activities in Croatia	75.4	33.0	27.7	60.6	14.8
due to other EU+ countries in Croatia	10.1	0.0	6.0	6.0	4.0
due to Croatia in other EU+ countries	*22.2*	*0.0*	*12.1*	*12.1*	*10.1*
Employment effect *(jobs per year)*	**2,823**	**702**	**1367**	**2,069**	**754**
(in % of total *Croatian* employment)	0.17%	0.04%	0.08%	0.13%	0.05%
Fiscal returns (in mill. €)	**28.4**	**7.7**	**10.8**	**18.5**	**9.9**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Croatia (in 1,000 hectolitres):	*177.4*
Δ 2015-2019 (in %):	*+ 6.2*
On-premise share (of volume):	*35 %*
Spirits sold in Croatia (in € per adult):	*€ 73.67*
Δ 2015-2019 (in %):	*+ 12*
Most favoured products:	*Fruit Eaux de Vie, Bitters/Spirit Aperitifs, Brandy*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Croatia	**227.3**	**132.7**	**41.4**	**174.2**	**53.1**
due to Croatian activities in Croatia	220.4	132.7	38.5	171.3	49.1
due to other EU+ countries in Croatia	6.9	0.0	2.9	2.9	4.0
due to Croatia in other EU+ countries	*37.3*	*0.0*	*11.8*	*11.8*	*25.5*
Employment effect *(jobs per year)*	**10,624**	**6,971**	**1,547**	**8,518**	**2,105**
(in % of total employment)	0.64%	0.42%	0.09%	0.52%	0.13%
Fiscal returns (in mill. €)	**210.9**	**31.2**	**13.0**	**44.2**	**28.7**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.3%*
indirect land use:	*1,931 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**48.4**	**6.7**	**30.5**	**37.2**	**11.2**
due to Croatian activities in Croatia	39.5	6.7	24.2	30.9	8.5
due to other EU+ countries in Croatia	8.9	0.0	6.3	6.3	2.6
due to Croatia in other EU+ countries	*51.5*	*6.7*	*32.1*	*38.8*	*12.7*
Retail (off-premise)	**11.2**	**1.7**	**4.9**	**6.7**	**4.5**
due to Croatian activities in Croatia	10.3	1.7	4.5	6.2	4.0
due to other EU+ countries in Croatia	0.9	0.0	0.4	0.4	0.5
due to Croatia other EU+ countries	*13.1*	*1.7*	*5.7*	*7.4*	*5.7*
Catering (on-premise)	**56.5**	**2.4**	**27.6**	**30.0**	**26.5**
due to Croatian activities in Croatia	52.6	2.4	26.0	28.4	24.2
due to other EU+ countries in Croatia	3.9	0.0	1.6	1.6	2.3
due to Croatian other EU+ countries	*67.5*	*2.4*	*31.4*	*33.8*	*33.7*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Croatian GVA)*	312.7 *(0.70 %)*	*0.5%*	*23*
Employment (in jobs per year): *(in % of Croatian employment)*	13,447 *(0.81 %)*	*1.1%*	*17.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Croatian government revenue)*	239.3 *(0.93 %)*	*0.5%*	*25.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Croatian total CO_2 eq. emissions)*	116.1 *(0.63 %)*	*0.6%*	*21.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.5 Cyprus

A. Production

Population:	*0.9 mill.*
Annual final consumption expenditure per capita:	*€ 20,546*
Spirits from Cyprus sold worldwide (in 1,000 hectolitres):	*12.6*
Δ 2015-2019 (in %):	*+ 6.8*
Cypriot spirits production turnover (in mill. €):	*10.5*
Top-selling Cypriot spirits products:	*Brandy, Aniseed, Vodka*
Largest export country:	*St. Kitts (duty free)*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Cyprus	**13.1**	**2.1**	**7.3**	**9.4**	**3.6**
due to Cypriot activities in Cyprus	6.7	2.1	3.2	5.3	1.4
due to other EU+ countries in Cyprus	6.4	0.0	4.1	4.1	2.3
due to Cyprus in other EU+ countries	*4.0*	*0.0*	*2.5*	*2.5*	*1.4*
Employment effect *(jobs per year)*	**316**	**66**	**162**	**228**	**88**
(in % of total Cypriot employment)	0.08%	0.02%	0.04%	0.06%	0.02%
Fiscal returns (in mill. €)	**4.3**	**0.4**	**2.3**	**2.7**	**1.6**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Cyprus (in 1,000 hectolitres):	*55.9*
Δ 2015-2019 (in %):	*+ 7.3*
On-premise share (of volume):	*56 %*
Spirits sold in Cyprus (in € per adult):	*€ 119.82*
Δ 2015-2019 (in %):	*+ 7.0*
Most favoured products:	*Scotch Whisky, Vodka, Brandy*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Cyprus	**146.3**	**85.4**	**33.1**	**118.5**	**27.8**
due to Cypriot activities in Cyprus	141.4	85.4	30.6	116.0	25.4
due to other EU+ countries in Cyprus	4.9	0.0	2.5	2.5	2.3
due to Cyprus in other EU+ countries	*27.2*	*0.0*	*11.3*	*11.3*	*16.0*
Employment effect *(jobs per year)*	**4,833**	**3,448**	**691**	**4,139**	**693**
(in % of total employment)	1.20%	0.86%	0.17%	1.03%	0.17%
Fiscal returns (in mill. €)	**102.8**	**14.9**	**10.2**	**25.1**	**13.7**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.1 %*
indirect land use:	*310 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**12.2**	**0.7**	**9.5**	**10.2**	**2.0**
due to Cypriot activities in Cyprus	9.5	0.7	8.0	8.7	0.8
due to other EU+ countries in Cyprus	2.7	0.0	1.6	1.6	1.1
due to Cyprus in other EU+ countries	*11.5*	*0.7*	*9.4*	*10.1*	*1.4*
Retail (off-premise)	**3.7**	**0.5**	**1.8**	**2.3**	**1.4**
due to Cypriot activities in Cyprus	3.3	0.5	1.6	2.2	1.2
due to other EU+ countries in Cyprus	0.4	0.0	0.2	0.2	0.2
due to Cyprus in other EU+ countries	*4.1*	*0.5*	*1.9*	*2.5*	*1.7*
Catering (on-premise)	**38.9**	**4.8**	**19.1**	**23.9**	**15.0**
due to Cypriot activities in Cyprus	37.6	4.8	18.7	23.5	14.1
due to other EU+ countries in Cyprus	1.3	0.0	0.5	0.5	0.9
due to Cyprus in other EU+ countries	*46.8*	*4.8*	*21.8*	*26.6*	*20.2*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Cypriot GVA)*	159.4 *(0.82 %)*	*0.3%*	*26.*
Employment (in jobs per year): *(in % of Cypriot employment)*	5,149 *(1.28 %)*	*0.4%*	*25.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Cypriot government revenue)*	107.2 *(1.17 %)*	*0.2%*	*27.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Cypriot total CO_2 eq. emissions)*	54.9 *(0.76 %)*	*0.3%*	*27.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.6 Czech Republic

A. Production

Population:	*10.6 mill.*
Annual final consumption expenditure per capita:	*€ 14,068*
Spirits from Czechia sold worldwide (in 1,000 hectolitres):	*653.3*
Δ 2015-2019 (in %):	*+8.1*
Czech spirits production turnover (in mill. €):	*432.3*
Top-selling Czech spirits products:	*Rum, Bitters/Spirit Aperitifs, Vodka*
Largest export country:	*Slovakia*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Czechia	**460.6**	**157.0**	**207.3**	**364.4**	**96.2**
due to Czech activities in Czechia	345.0	157.0	135.4	292.4	52.6
due to other EU+ countries in Czechia	115.6	0.0	72.0	72.0	43.6
due to Czechia in other EU+ countries	*138.4*	*0.0*	*83.2*	*83.2*	*55.2*
Employment effect *(jobs per year)*	**11,918**	**2,421**	**6,505**	**8,925**	**2,993**
(in % of total Czech employment)	0.23%	0.05%	0.13%	0.17%	0.06%
Fiscal returns (in mill. €)	**152.1**	**42.0**	**67.3**	**109.3**	**42.8**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Czechia (in 1,000 hectolitres):	*728.2*
Δ 2015-2019 (in %):	*+ 11.03*
On-premise share (of volume):	*33 %*
Spirits sold in Czechia (in € per adult):	*122.49*
Δ 2015-2019 (in %):	*+ 23.0*
Most favoured products:	*Rum, Vodka, Bitters/Spirit Aperitifs*
Largest import country:	*(I) Irish*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Czechia	**745.4**	**395.5**	**212.7**	**608.3**	**137.1**
due to Czech activities in Czechia	679.9	395.5	186.9	582.4	97.4
due to other EU+ countries in Czechia	65.5	0.0	25.9	25.9	39.7
due to Czechia in other EU+ countries	*152.6*	*0.0*	*74.2*	*74.2*	*78.4*
Employment effect *(jobs per year)*	**34,511**	**23,904**	**6,356**	**30,260**	**4,251**
(in % of total employment)	0.67%	0.46%	0.12%	0.59%	0.08%
Fiscal returns (in mill. €)	**808.4**	**109.3**	**63.4**	**172.7**	**64.7**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*3.0%*
indirect land use:	*17,507 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**358.7**	**46.7**	**243.7**	**290.4**	**68.3**
due to Czech activities in Czechia	230.8	46.7	149.9	196.6	34.3
due to other EU+ countries in Czechia	127.9	0.0	93.9	93.9	34.0
due to Czechia in other EU+ countries	*306.8*	*46.6*	*203.5*	*250.1*	*56.7*
Retail (off-premise)	**44.7**	**3.3**	**22.6**	**25.9**	**18.8**
due to Czech activities in Czechia	30.9	3.3	16.1	19.4	11.6
due to other EU+ countries in Czechia	13.8	0.0	6.6	6.6	7.2
due to Czechia in other EU+ countries	*42.4*	*3.3*	*21.7*	*25.0*	*17.5*
Catering (on-premise)	**221.0**	**4.1**	**138.7**	**142.7**	**78.3**
due to Czech activities in Czechia	183.5	4.1	123.5	127.5	56.0
due to other EU+ countries in Czechia	37.5	0.0	15.2	15.2	22.3
due to Czechia in other EU+ countries	*237.2*	*4.0*	*149.7*	*153.8*	*83.4*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Czech GVA)*	1,206.0 *(0.60 %)*	2.0%	9.
Employment (in jobs per year): *(in % of Czech employment)*	46,429 *(0.90 %)*	3.8%	8.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Czech government revenue)*	960.4 *(1.03 %)*	2.0%	10.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Czech total CO_2 eq. emissions)*	624.4 *(0.57 %)*	3.2%	7.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.7 Denmark

A. Production

Population:	*5.7 mill.*
Annual final consumption expenditure per capita:	*€ 37,619*
Spirits from Denmark sold worldwide (in 1,000 hectolitres):	*87.7*
Δ 2015-2019 (in %):	*+ 4.1*
Danish spirits production turnover (in mill. €):	*32.9*
Top-selling Danish spirits products:	*Aquavit, Liqueurs, Bitters/Spirit Aperitifs*
Largest export country:	*Norway*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Denmark	**127.0**	**13.1**	**72.7**	**85.8**	**41.2**
due to Danish activities in Denmark	27.4	13.1	9.3	22.4	4.9
due to other EU+ countries in Denmark	99.6	0.0	63.3	63.3	36.3
due to Denmark in other EU+ countries	*9.4*	*0.0*	*5.8*	*5.8*	*3.5*
Employment effect *(jobs per year)*	**1,473**	**151**	**852**	**1,003**	**469**
(in % of total Danish employment)	0.05%	0.01%	0.03%	0.04%	0.02%
Fiscal returns (in mill. €)	**56.1**	**4.4**	**31.2**	**35.6**	**20.5**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Denmark (in 1,000 hectolitres):	*225.2*
Δ 2015-2019 (in %):	*+ 7.2*
On-premise share (of volume):	*21 %*
Spirits sold in Denmark (in € per adult):	*€ 141.06*
Δ 2015-2019 (in %):	*+ 13.0*
Most favoured products:	*Vodka, Aquavit, Liqueurs*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Denmark	**346.9**	**163.7**	**108.4**	**272.1**	**74.9**
due to Danish activities in Denmark	295.1	163.7	84.3	247.9	47.1
due to other EU+ countries in Denmark	51.9	0.0	24.1	24.1	27.7
due to Denmark in other EU+ countries	*44.2*	*0.0*	*21.7*	*21.7*	*22.5*
Employment effect *(jobs per year)*	**7,383**	**5,226**	**1,302**	**6,528**	**855**
(in % of total employment)	0.27%	0.19%	0.05%	0.23%	0.03%
Fiscal returns (in mill. €)	**466.1**	**53.1**	**39.2**	**92.4**	**41.9**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*1.2%*
indirect land use:	*6,935 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**66.9**	**4.0**	**50.8**	**54.8**	**12.1**
due to Danish activities in Denmark	10.0	4.0	5.2	9.2	0.8
due to other EU+ countries in Denmark	56.9	0.0	45.6	45.6	11.3
due to Denmark in other EU+ countries	*14.5*	*4.0*	*8.6*	*12.5*	*2.0*
Retail (off-premise)	**12.9**	**1.7**	**6.4**	**8.1**	**4.8**
due to Danish activities in Denmark	7.3	1.7	3.1	4.8	2.4
due to other EU+ countries in Denmark	5.6	0.0	3.3	3.3	2.3
due to Denmark in other EU+ countries	*12.0*	*1.7*	*5.6*	*7.3*	*4.7*
Catering (on-premise)	**31.5**	**4.0**	**13.8**	**17.8**	**13.7**
due to Danish activities in Denmark	18.8	4.0	8.7	12.7	6.1
due to other EU+ countries in Denmark	12.7	0.0	5.1	5.1	7.6
due to Denmark in other EU+ countries	*30.0*	*4.0*	*14.1*	*18.1*	*11.9*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Danish GVA)*	473.9 *(0.17 %)*	0.8%	20.
Employment (in jobs per year): *(in % of Danish employment)*	8,856 *(0.32 %)*	0.7%	22.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Danish government revenue)*	522.2 *(0.31 %)*	1.1%	19.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Danish total CO_2 eq. emissions)*	111.3 *(0.14 %)*	0.6%	23.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.8 Estonia

A. Production

Population:	*1.3 mill.*
Annual final consumption expenditure per capita:	*€ 14,590*
Spirits from Estonia sold worldwide (in 1,000 hectolitres):	*90.1*
Δ 2015-2019 (in %):	*-22.9*
Estonian spirits production turnover (in mill. €):	*42.8*
Top-selling Estonian spirits products:	*Vodka, Bitters/Spirit Aperitifs, Liqueurs*
Largest export country:	*Latvia (duty free)*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Estonia	**43.1**	**11.7**	**21.2**	**32.9**	**10.2**
due to Estonian activities in Estonia	31.0	11.7	13.4	25.1	5.9
due to other EU+ countries in Estonia	12.1	0.0	7.8	7.8	4.3
due to Estonia in other EU+ countries	*16.6*	*0.0*	*10.0*	*10.0*	*6.6*
Employment effect *(jobs per year)*	**1,245**	**358**	**583**	**941**	**305**
(in % of total Estonian employment)	0.20%	0.06%	0.09%	0.15%	0.05%
Fiscal returns (in mill. €)	**14.9**	**3.7**	**6.1**	**9.9**	**5.0**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Estonia (in 1,000 hectolitres):	*128.5*
Δ 2015-2019 (in %):	*-23.7*
On-premise share (of volume):	*8 %*
Spirits sold in Estonia (in € per adult):	*€ 287.92*
Δ 2015-2019 (in %):	*-8.0*
Most favoured products:	*Vodka, Brandy, Rum*
Largest import country:	*(I) French*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Estonia	**74.3**	**36.9**	**23.0**	**59.9**	**14.5**
due to Estonian activities in Estonia	67.0	36.9	19.6	56.5	10.5
due to other EU+ countries in Estonia	7.4	0.0	3.4	3.4	4.0
due to Estonia in other EU+ countries	*16.1*	*0.0*	*7.3*	*7.3*	*8.8*
Employment effect *(jobs per year)*	**3,659**	**2,607**	**621**	**3,228**	**431**
(in % of total employment)	0.58%	0.41%	0.10%	0.51%	0.07%
Fiscal returns (in mill. €)	**184.4**	**9.3**	**5.7**	**15.0**	**7.3**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.9 %*
indirect land use:	*5,485 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**65.9**	**7.3**	**46.9**	**54.2**	**11.8**
due to Estonian activities in Estonia	48.2	7.3	34.3	41.6	6.7
due to other EU+ countries in Estonia	17.7	0.0	12.6	12.6	5.1
due to Estonia in other EU+ countries	*57.1*	*7.3*	*40.5*	*47.8*	*9.3*
Retail (off-premise)	**18.5**	**1.3**	**9.9**	**11.3**	**7.3**
due to Estonian activities in Estonia	15.1	1.3	8.3	9.7	5.5
due to other EU+ countries in Estonia	3.4	0.0	1.6	1.6	1.8
due to Estonia in other EU+ countries	*18.0*	*1.3*	*9.6*	*10.9*	*7.1*
Catering (on-premise)	**27.7**	**2.8**	**15.0**	**17.7**	**9.9**
due to Estonian activities in Estonia	21.8	2.8	12.4	15.2	6.6
due to other EU+ countries in Estonia	5.9	0.0	2.5	2.5	3.4
due to Estonia in other EU+ countries	*25.0*	*2.8*	*13.7*	*16.5*	*8.5*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Estonian GVA)*	117.4 *(0.48 %)*	0.2%	27.
Employment (in jobs per year): *(in % of Estonian employment)*	4,904 *(0.77 %)*	0.4%	26.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Estonian government revenue)*	199.3 *(1.82 %)*	0.4%	26.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Estonian total CO_2 eq. emissions)*	112.1 *(0.80 %)*	0.6%	22.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.9 Finland

A. Production

Population:	*5.5 mill.*
Annual final consumption expenditure per capita:	*€ 32,907*
Spirits from Finland sold worldwide (in 1,000 hectolitres):	*453.5*
Δ 2015-2019 (in %):	*-3.0*
Finnish spirits production turnover (in mill. €):	*234.4*
Top-selling Finish spirits products:	*Vodka, Liqueurs, White Spirits*
Largest export country:	*Poland (duty free)*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Finland	**261.5**	**63.8**	**138.0**	**201.8**	**59.7**
due to Finnish activities in Finland	194.2	63.8	94.7	158.5	35.8
due to other EU+ countries in Finland	67.2	0.0	43.3	43.3	23.9
due to Finland in other EU+ countries	*60.4*	*0.0*	*37.8*	*37.8*	*22.5*
Employment effect *(jobs per year)*	**3,261**	**649**	**1,833**	**2,481**	**779**
(in % of total Finish employment)	0.13%	0.03%	0.07%	0.10%	0.03%
Fiscal returns (in mill. €)	**114.3**	**21.9**	**60.2**	**82.1**	**32.2**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Finland (in 1,000 hectolitres):	*226.1*
Δ 2015-2019 (in %):	*- 5.0*
On-premise share (of volume):	*12 %*
Spirits sold in Finland (in € per adult):	*170.57*
Δ 2015-2019 (in %):	*+ 3.0*
Most favoured products:	*Vodka, Liqueurs, Cognac/Armagnac*
Largest import country:	*French*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Finland	**179.4**	**78.3**	**57.8**	**136.1**	**43.2**
due to Finnish activities in Finland	148.6	78.3	44.6	122.9	25.7
due to other EU+ countries in Finland	30.8	0.0	13.2	13.2	17.6
due to Finland in other EU+ countries	*23.3*	*0.0*	*11.8*	*11.8*	*11.6*
Employment effect *(jobs per year)*	**3,347**	**2,037**	**751**	**2,788**	**558**
(in % of total employment)	0.13%	0.08%	0.03%	0.11%	0.02%
Fiscal returns (in mill. €)	**616.1**	**27.8**	**22.4**	**50.2**	**23.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*4.0%*
indirect land use:	*23,542 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**173.1**	**5.2**	**145.3**	**150.5**	**22.6**
due to Finnish activities in Finland	117.6	5.2	100.5	105.7	11.9
due to other EU+ countries in Finland	55.5	0.0	44.8	44.8	10.7
due to Finland in other EU+ countries	*143.5*	*5.2*	*119.2*	*124.4*	*19.1*
Retail (off-premise)	**14.2**	**0.8**	**8.0**	**8.9**	**5.4**
due to Finnish activities in Finland	9.8	0.8	5.8	6.6	3.2
due to other EU+ countries in Finland	4.4	0.0	2.3	2.3	2.2
due to Finland in other EU+ countries	*12.7*	*0.8*	*7.2*	*8.0*	*4.6*
Catering (on-premise)	**31.8**	**2.9**	**16.7**	**19.6**	**12.2**
due to Finnish activities in Finland	19.2	2.9	10.8	13.7	5.5
due to other EU+ countries in Finland	12.6	0.0	5.9	5.9	6.7
due to Finland in other EU+ countries	*23.7*	*2.9*	*12.9*	*15.8*	*7.9*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Finnish GVA)*	440.8 *(0.21 %)*	*0.7%*	*22.*
Employment (in jobs per year): *(in % of Finnish employment)*	6,607 *(0.27 %)*	*0.5%*	*24.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Finnish government revenue)*	730.4 *(0.58 %)*	*1.6%*	*13.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Finnish total CO_2 eq. emissions)*	219.1 *(0.43 %)*	*1.1%*	*15.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.10 France

A. Production

Population:	*66.8 mill.*
Annual final consumption expenditure per capita:	*€ 27,710*
Spirits from France sold worldwide (in 1,000 hectolitres):	*4,090.5*
Δ 2015-2019 (in %):	*+1.2*
French spirits production turnover (in mill. €):	*4,419.7*
Top-selling French spirits products:	*Cognac/Armagnac, Vodka, Other Brandy*
Largest export country:	*United States*

Economic Effects from production:				**…of which**	
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in France	**4,600.0**	**1,250.8**	**2,384.3**	**3,635.0**	**965.0**
due to French activities in France	4,131.2	1,250.8	2,112.4	3,363.2	768.0
due to other EU+ countries in France	468.8	0.0	271.8	271.8	197.0
due to France in other EU+ countries	*806.9*	*0.0*	*495.4*	*495.4*	*311.5*
Employment effect *(jobs per year)*	**5,1928**	**8,320**	**31,558**	**39,878**	**12,050**
(in % of total French employment)	0.19%	0.03%	0.12%	0.15%	0.05%
Fiscal returns (in mill. €)	**2,293.9**	**600.8**	**1,130.1**	**1,730.9**	**563.0**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in France (in 1,000 hectolitres):	*3,370.6*
Δ 2015-2019 (in %):	*-3.5*
On-premise share (of volume):	*17 %*
Spirits sold in France (in € per adult):	*121.51*
Δ 2015-2019 (in %):	*+ 7.0*
Most favoured products:	*Scotch Whisky, Aniseed, Rum*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:				**…of which**	
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in France	**2,980.1**	**1,404.9**	**829.0**	**2,233.9**	**746.2**
due to French activities in France	2,637.0	1,404.9	686.7	2,091.6	545.3
due to other EU+ countries in France	343.1	0.0	142.3	142.3	200.9
due to France in other EU+ countries	*263.2*	*0.0*	*109.8*	*109.8*	*153.4*
Employment effect *(jobs per year)*	**51,852**	**32,065**	**10,426**	**42,491**	**9,361**
(in % of total employment)	0.19%	0.12%	0.04%	0.16%	0.04%
Fiscal returns (in mill. €)	**4,855.9**	**562.5**	**365.2**	**927.7**	**427.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*1.5%*
indirect land use:	*102,627 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**1,439.7**	**304.5**	**963.7**	**1,268.2**	**171.5**
due to French activities in France	1,296.3	304.5	865.4	1,169.9	126.4
due to other EU+ countries in France	143.3	0.0	98.3	98.3	45.0
due to France in other EU+ countries	*1,647.6*	*304.2*	*1,118.5*	*1,422.7*	*224.9*
Retail (off-premise)	**118.3**	**30.2**	**44.9**	**75.1**	**43.2**
due to French activities in France	103.6	30.2	38.6	68.7	34.9
due to other EU+ countries in France	14.7	0.0	6.3	6.3	8.4
due to France in other EU+ countries	*139.6*	*30.2*	*53.6*	*83.8*	*55.8*
Catering (on-premise)	**233.8**	**56.6**	**81.1**	**137.7**	**96.1**
due to French activities in France	169.2	56.6	58.5	115.1	54.1
due to other EU+ countries in France	64.7	0.0	22.6	22.6	42.1
due to France in other EU+ countries	*216.2*	*56.5*	*75.9*	*132.4*	*83.8*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of French GVA)*	7,580.1 *(0.35 %)*	*12.6%*	*2.*
Employment (in jobs per year): *(in % of French employment)*	103,781 *(0.39 %)*	*8.5%*	*5.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of French government revenue)*	7,149.8 *(0.56 %)*	*15.3%*	*2.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of French total CO_2 eq. emissions)*	1,791.8 *(0.54 %)*	*9.1%*	*4.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.11 Germany

A. Production

Population:	*82.5 mill.*
Annual final consumption expenditure per capita:	*€ 30,224*
Spirits from Germany sold worldwide (in 1,000 hectolitres):	*2,510.1*
Δ 2015-2019 (in %):	*- 3.0*
German spirits production turnover (in mill. €):	*2,711.7*
Top-selling German spirits products:	*Liqueurs, Brandy, Bitters/Spirit Aperitifs*
Largest export country:	*United States*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Germany	**3,387.0**	**580.4**	**1,927.3**	**2,507.8**	**879.3**
due to German activities in Germany	2,355.9	580.4	1,333.0	1,913.4	442.5
due to other EU+ countries in Germany	1,031.1	0.0	594.3	594.3	436.8
due to Germany in other EU+ countries	*593.6*	*0.0*	*390.1*	*390.1*	*203.6*
Employment effect *(jobs per year)*	**4,7620**	**4,934**	**29,848**	**34,782**	**12,838**
(in % of total German employment)	0.12%	0.01%	0.07%	0.08%	0.03%
Fiscal returns (in mill. €)	**1,345.9**	**194.0**	**746.7**	**940.7**	**405.1**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Germany (in 1,000 hectolitres):	*4,148.0*
Δ 2015-2019 (in %):	*- 0.9*
On-premise share (of volume):	*14 %*
Spirits sold in Germany (in € per adult):	*91.50*
Δ 2015-2019 (in %):	*+ 9.0*
Most favoured products:	*Vodka, Bitters/Spirit Aperitifs, Liqueurs*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
Gross value added (GVA) in Germany	**3,307.8**	**1,467.4**	**907.3**	**2374.6**	**933.2**
due to German activities in Germany	2,647.8	1,467.4	650.5	2,117.9	529.9
due to other EU+ countries in Germany	660.1	0.0	256.8	256.8	403.3
due to Germany in other EU+ countries	*256.5*	*0.0*	*107.2*	*107.2*	*149.3*
Employment effect *(jobs per year)*	**81,208**	**54,162**	**13,427**	**67,589**	**13,619**
(in % of total employment)	0.20%	0.13%	0.03%	0.16%	0.03%
Fiscal returns (in mill. €)	**4,092.9**	**497.1**	**314.4**	**811.6**	**432.6**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*6.3%*
indirect land use:	*36,785 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**1,430.2**	**130.1**	**1,072.1**	**1,202.2**	**227.9**
due to German activities in Germany	1,058.4	130.1	819.6	949.7	108.7
due to other EU+ countries in Germany	371.8	0.0	252.6	252.6	119.2
due to Germany in other EU+ countries	*1,354.9*	*130.0*	*1,044.9*	*1,174.8*	*180.1*
Retail (off-premise)	**181.9**	**32.9**	**78.7**	**111.7**	**70.2**
due to German activities in Germany	141.5	32.9	60.8	93.8	47.8
due to other EU+ countries in Germany	40.3	0.0	17.9	17.9	22.4
due to Germany in other EU+ countries	*179.7*	*32.9*	*77.7*	*110.6*	*69.1*
Catering (on-premise)	**403.3**	**76.1**	**153.0**	**229.1**	**174.2**
due to German activities in Germany	256.1	76.1	96.6	172.7	83.4
due to other EU+ countries in Germany	147.2	0.0	56.4	56.4	90.8
due to Germany in other EU+ countries	*312.6*	*76.0*	*117.4*	*193.4*	*119.2*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of German GVA)*	6,694.9 *(0.22 %)*	*11.2%*	*3.*
Employment (in jobs per year): *(in % of German employment)*	128,828 *(0.31 %)*	*10.5%*	*3.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of German government revenue)*	5,438.8 *(0.34 %)*	*11.6%*	*3.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of German total CO_2 eq. emissions)*	2,015.4 *(0.30 %)*	*10.3%*	*3.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.12 Greece

A. Production

Population:	*10.8 mill.*
Annual final consumption expenditure per capita:	*€ 15,220*
Spirits from Greece sold worldwide (in 1,000 hectolitres):	*298.2*
Δ 2015-2019 (in %):	*+ 3.2*
Greek spirits production turnover (in mill. €):	*136.8*
Top-selling Greek spirits products:	*Aniseed, Brandy, Liqueurs*
Largest export country:	*Germany*

Economic Effects from production:

		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Greece	**153.7**	**39.6**	**82.1**	**121.7**	**32.0**
due to Greek activities in Greece	120.5	39.6	60.9	100.4	20.1
due to other EU+ countries in Greece	33.1	0.0	21.2	21.2	11.9
due to Greece in other EU+ countries	*26.9*	*0.0*	*16.8*	*16.8*	*10.1*
Employment effect *(jobs per year)*	**3,887**	**710**	**2,280**	**2,990**	**897**
(in % of total Greek employment)	0.10%	0.02%	0.06%	0.08%	0.02%
Fiscal returns (in mill. €)	**53.6**	**12.0**	**27.6**	**39.6**	**14.0**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Greece (in 1,000 hectolitres):	*349.8*
Δ 2015-2019 (in %):	*-2.6*
On-premise share (of volume):	*62 %*
Spirits sold in Greece (in € per adult):	*91.00*
Δ 2015-2019 (in %):	*+ 1.0*
Most favoured products:	*Scotch Whisky, Aniseed, Vodka*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:

		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Greece	**693.7**	**388.7**	**200.5**	**589.2**	**104.5**
due to Greek activities in Greece	669.4	388.7	191.5	580.3	89.1
due to other EU+ countries in Greece	24.3	0.0	9.0	9.0	15.3
due to Greece in other EU+ countries	*58.8*	*0.0*	*26.4*	*26.4*	*32.3*
Employment effect *(jobs per year)*	**20,656**	**1,3474**	**4,173**	**17,647**	**3,009**
(in % of total employment)	0.54%	0.35%	0.11%	0.46%	0.08%
Fiscal returns (in mill. €)	**787.9**	**98.6**	**56.2**	**154.7**	**45.7**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.5%*
indirect land use:	*2,860 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**116.1**	**4.5**	**92.5**	**97.0**	**19.1**
due to Greek activities in Greece	91.6	4.5	76.4	80.9	10.7
due to other EU+ countries in Greece	24.4	0.0	16.1	16.1	8.3
due to Greece in other EU+ countries	*105.6*	*4.5*	*86.6*	*91.1*	*14.5*
Retail (off-premise)	**17.1**	**0.0**	**11.0**	**11.0**	**6.1**
due to Greek activities in Greece	13.6	0.0	9.4	9.4	4.2
due to other EU+ countries in Greece	3.4	0.0	1.6	1.6	1.8
due to Greece in other EU+ countries	*15.7*	*0.0*	*10.4*	*10.4*	*5.3*
Catering (on-premise)	**221.3**	**16.3**	**151.4**	**167.7**	**53.6**
due to Greek activities in Greece	207.3	16.3	147.1	163.4	43.9
due to other EU+ countries in Greece	14.0	0.0	4.3	4.3	9.7
due to Greece in other EU+ countries	*230.2*	*16.3*	*158.8*	*175.1*	*55.2*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Greek GVA)*	847.4 *(0.53 %)*	*1.4%*	*14.*
Employment (in jobs per year): *(in % of Greek employment)*	24,543 *(0.64 %)*	*2.0%*	*12.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Greek government revenue)*	841.5 *(0.94 %)*	*1.8%*	*12.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Greek total CO_2 eq. emissions)*	354.4 *(0.48 %)*	*1.8%*	*11.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.13 Hungary

A. Production

Population:	*9.8 mill.*
Annual final consumption expenditure per capita:	*€ 10,339*
Spirits from Hungary sold worldwide (in 1,000 hectolitres):	*437.0*
Δ 2015-2019 (in %):	*-7.2*
Hungarian spirits production turnover (in mill. €):	*235.1*
Top-selling Hungarian spirits products:	*Vodka, Bitters/Spirit Aperitifs, Brandy*
Largest export country:	*Poland*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Hungary	**220.4**	**62.6**	**110.7**	**173.4**	**47.0**
due to Hungarian activities in Hungary	160.8	62.6	73.9	136.5	24.3
due to other EU+ countries in Hungary	59.6	0.0	36.9	36.9	22.8
due to Hungary in other EU+ countries	*99.0*	*0.0*	*60.9*	*60.9*	*38.1*
Employment effect *(jobs per year)*	**8,151**	**1,595**	**4,601**	**6,196**	**1,955**
(in % of total Hungarian employment)	0.18%	0.04%	0.10%	0.14%	0.04%
Fiscal returns (in mill. €)	**80.3**	**14.8**	**38.7**	**53.4**	**26.9**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Hungary (in 1,000 hectolitres):	*538.0*
Δ 2015-2019 (in %):	*- 4.5*
On-premise share (of volume):	*21 %*
Spirits sold in Hungary (in € per adult):	*102.21*
Δ 2015-2019 (in %):	*+ 4.0*
Most favoured products:	*Fruit Eaux de Vie, Vodka, Bitters/Spirit Aperitifs*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Hungary	**401.6**	**198.5**	**118.9**	**317.5**	**84.1**
due to Hungarian activities in Hungary	361.4	198.5	103.1	301.6	59.8
due to other EU+ countries in Hungary	*40.2*	*0.0*	*15.9*	*15.9*	*24.3*
due to Hungary in other EU+ countries	121.4	0.0	59.0	59.0	62.4
Employment effect *(jobs per year)*	**25,880**	**17,749**	**4,652**	**22,401**	**3,479**
(in % of total employment)	0.58%	0.40%	0.10%	0.50%	0.08%
Fiscal returns (in mill. €)	**587.7**	**63.4**	**36.9**	**100.3**	**52.9**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*2.7%*
indirect land use:	*16,016 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**157.3**	**24.3**	**108.1**	**132.4**	**24.9**
due to Hungarian activities in Hungary	117.1	24.3	80.1	104.4	12.7
due to other EU+ countries in Hungary	40.3	0.0	28.0	28.0	12.2
due to Hungary in other EU+ countries	*165.4*	*24.3*	*113.8*	*138.2*	*27.2*
Retail (off-premise)	**34.8**	**10.4**	**13.8**	**24.2**	**10.6**
due to Hungarian activities in Hungary	29.6	10.4	11.5	21.9	7.7
due to other EU+ countries in Hungary	5.2	0.0	2.3	2.3	2.9
due to Hungary in other EU+ countries	*41.3*	*10.4*	*17.1*	*27.5*	*13.8*
Catering (on-premise)	**102.4**	**13.6**	**52.6**	**66.1**	**36.2**
due to Hungarian activities in Hungary	85.5	13.6	46.7	60.3	25.3
due to other EU+ countries in Hungary	16.8	0.0	5.8	5.8	11.0
due to Hungary in other EU+ countries	*119.5*	*13.5*	*62.0*	*75.5*	*44.0*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Hungarian GVA)*	622.0 *(0.50 %)*	*1.0%*	*18.*
Employment (in jobs per year): *(in % of Hungarian employment)*	34,032 *(0.77 %)*	*2.8%*	*10.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Hungarian government revenue)*	668.0 *(1.05 %)*	*1.4%*	*15.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Hung. total CO_2 eq. emissions)*	294.5 *(0.59 %)*	*1.5%*	*13.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.14 Ireland

A. Production

Population:	*4.8 mill.*
Annual final consumption expenditure per capita:	*€ 29,682*
Spirits from Ireland sold worldwide (in 1,000 hectolitres):	*1,924.7*
Δ 2015-2019 (in %):	*+ 34.6*
Irish spirits production turnover (in mill. €):	*1,451.5*
Top-selling Irish spirits products:	*Irish Whiskey, Liqueurs, Gin*
Largest export country:	*United States*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Ireland	**1,257.9**	**767.1**	**346.6**	**1,113.7**	**144.2**
due to Irish activities in Ireland	1,096.1	767.1	244.5	1,011.6	84.5
due to other EU+ countries in Ireland	161.7	0.0	102.0	102.0	59.7
due to Ireland in other EU+ countries	*386.0*	*0.0*	*248.3*	*248.3*	*137.7*
Employment effect *(jobs per year)*	**6,808**	**2,758**	**2652**	**5411**	**1397**
(in % of total Irish employment)	0.30%	0.12%	0.12%	0.24%	0.06%
Fiscal returns (in mill. €)	**277.4**	**144.0**	**81.0**	**225.0**	**52.4**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Ireland (in 1,000 hectolitres):	*217.7*
Δ 2015-2019 (in %):	*+ 17.1*
On-premise share (of volume):	*41 %*
Spirits sold in Ireland (in € per adult):	*€ 238.37*
Δ 2015-2019 (in %):	*+ 23.0*
Most favoured products:	*Vodka, Irish Whiskey, Gin*
Largest import country:	*(I) French*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Ireland	**591.7**	**362.8**	**102.8**	**465.6**	**126.1**
due to Irish activities in Ireland	486.3	362.8	55.0	417.8	68.5
due to other EU+ countries in Ireland	105.4	0.0	47.8	47.8	57.6
due to Ireland in other EU+ countries	*112.9*	*0.0*	*52.6*	*52.6*	*60.3*
Employment effect *(jobs per year)*	**14,888**	**12,814**	**925**	**13,739**	**1,149**
(in % of total employment)	0.67%	0.57%	0.04%	0.61%	0.05%
Fiscal returns (in mill. €)	**779.4**	**98.5**	**22.0**	**120.5**	**47.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.7 %*
indirect land use:	*4,019 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**478.9**	**107.0**	**334.5**	**441.5**	**37.4**
due to Irish activities in Ireland	402.2	107.0	275.5	382.5	19.7
due to other EU+ countries in Ireland	76.7	0.0	59.0	59.0	17.7
due to Ireland in other EU+ countries	*517.4*	*106.9*	*359.1*	*466.0*	*51.4*
Retail (off-premise)	**10.5**	**2.1**	**4.0**	**6.1**	**4.4**
due to Irish activities in Ireland	4.6	2.1	1.3	3.4	1.2
due to other EU+ countries in Ireland	5.9	0.0	2.7	2.7	3.2
due to Ireland in other EU+ countries	*7.6*	*2.1*	*2.9*	*5.0*	*2.7*
Catering (on-premise)	**76.6**	**24.8**	**22.0**	**46.8**	**29.8**
due to Irish activities in Ireland	55.6	24.8	15.2	39.9	15.7
due to other EU+ countries in Ireland	21.0	0.0	6.9	6.9	14.1
due to Ireland in other EU+ countries	*75.1*	*24.8*	*22.1*	*46.8*	*28.3*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Irish GVA)*	1,849.6 *(0.55 %)*	3.1%	7.
Employment (in jobs per year): *(in % of Irish employment)*	21,695 *(0.97 %)*	1.8%	15.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Irish government revenue)*	1,056.8 *(1.18 %)*	2.3%	8.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Irish total CO_2 eq. emissions)*	566.1 *(0.89 %)*	2.9%	9.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.15 Italy

A. Production

Population:	*60.6 mill.*
Annual final consumption expenditure per capita:	*€ 23,600*
Spirits from Italy sold worldwide (in 1,000 hectolitres):	*1,530.3*
Δ 2015-2019 (in %):	*+ 17.2*
Italian spirits production turnover (in mill. €):	*2,953.0*
Top-selling Italian spirits products:	*Bitters/Spirit Aperitifs, Brandy, Aniseed*
Largest export country:	*Germany*

Economic Effects from production:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Italy	**3,357.8**	**865.0**	**1656.1**	**2521.1**	**836.7**
due to Italian activities in Italy	2,972.1	865.0	1,436.1	2,301.1	671.0
due to other EU+ countries in Italy	385.8	0.0	220.0	220.0	165.7
due to Italy in other EU+ countries	*491.9*	*0.0*	*274.7*	*274.7*	*217.2*
Employment effect *(jobs per year)*	**44,806**	**5,015**	**26,348**	**31,362**	**13,443**
(in % of total Italian employment)	0.20%	0.02%	0.12%	0.14%	0.06%
Fiscal returns (in mill. €)	**1,276.1**	**288.1**	**608.4**	**896.5**	**379.6**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Italy (in 1,000 hectolitres):	*1,291.1*
Δ 2015-2019 (in %):	*+3.7*
On-premise share (of volume):	*53 %*
Spirits sold in Italy (in € per adult):	*€ 40.32*
Δ 2015-2019 (in %):	*+ 13.0*
Most favoured products:	*Bitters/Spirit Aperitifs, Brandy, Liqueurs*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Italy	**2,704.3**	**1,344.6**	**698.5**	**2,043.1**	**661.1**
due to Italian activities in Italy	2,452.1	1,344.6	605.6	1950.2	501.8
due to other EU+ countries in Italy	252.2	0.0	92.9	92.9	159.3
due to Italy in other EU+ countries	*197.1*	*0.0*	*75.0*	*75.0*	*122.1*
Employment effect *(jobs per year)*	**55,209**	**34,394**	**10,258**	**44,652**	**10,558**
(in % of total employment)	0.24%	0.15%	0.05%	0.20%	0.05%
Fiscal returns (in mill. €)	**2,209.0**	**442.2**	**236.1**	**678.3**	**306.6**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*4.7 %*
indirect land use:	*27,726 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**1,066.6**	**175.9**	**719.5**	**895.3**	**171.2**
due to Italian activities in Italy	935.7	175.9	628.5	804.4	131.4
due to other EU+ countries in Italy	130.8	0.0	91.0	91.0	39.8
due to Italy in other EU+ countries	*1,144.8*	*175.7*	*764.0*	*939.7*	*205.1*
Retail (off-premise)	**44.0**	**8.2**	**19.6**	**27.8**	**16.2**
due to Italian activities in Italy	29.1	8.2	13.4	21.6	7.5
due to other EU+ countries in Italy	14.9	0.0	6.2	6.2	8.7
due to Italy in other EU+ countries	*35.5*	*8.2*	*16.3*	*24.5*	*11.0*
Catering (on-premise)	**335.4**	**61.1**	**149.6**	**210.7**	**124.7**
due to Italian activities in Italy	284.1	61.1	131.2	192.2	91.8
due to other EU+ countries in Italy	51.3	0.0	18.5	18.5	32.8
due to Italy in other EU+ countries	*344.5*	*61.0*	*152.0*	*213.0*	*131.5*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Italian GVA)*	6,062.1 *(0.38 %)*	10.1%	4.
Employment (in jobs per year): *(in % of Italian employment)*	100,015 *(0.44 %)*	8.1%	6.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Italian government revenue)*	3,485.1 *(0.41 %)*	7.4%	6.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Italian total CO_2 eq. emissions)*	1,445.9 *(0.45 %)*	7.4%	5.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.16 Latvia

A. Production

Population:	*2.0 mill.*
Annual final consumption expenditure per capita:	*€ 12,470*
Spirits from Latvia sold worldwide (in 1,000 hectolitres):	*90.9*
Δ 2015-2019 (in %):	*- 7.4*
Latvian spirits production turnover (in mill. €):	*83.1*
Top-selling Latvian spirits products:	*Bitters/Spirit Aperitifs, Vodka, Brandy*
Largest export country:	*Lithuania (duty free)*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Latvia	**81.5**	**24.3**	**36.5**	**60.9**	**20.6**
due to Latvian activities in Latvia	68.5	24.3	28.8	53.1	15.4
due to other EU+ countries in Latvia	12.9	0.0	7.7	7.7	5.2
due to Latvia in other EU+ countries	*29.9*	*0.0*	*17.2*	*17.2*	*12.7*
Employment effect *(jobs per year)*	**2876**	**739**	**1,383**	**2,122**	**754**
(in % of total Latvian employment)	0.33%	0.08%	0.16%	0.24%	0.09%
Fiscal returns (in mill. €)	**23.8**	**5.2**	**9.9**	**15.1**	**8.7**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Latvia (in 1,000 hectolitres):	*219.4*
Δ 2015-2019 (in %):	*+ 18.8*
On-premise share (of volume):	*9 %*
Spirits sold in Latvia (in € per adult):	*€ 281.16*
Δ 2015-2019 (in %):	*+ 44.0*
Most favoured products:	*Vodka, Brandy, Bitters/Spirit Aperitifs*
Largest import country:	*(I) French*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Latvia	**149.5**	**74.5**	**39.9**	**114.3**	**35.2**
due to Latvian activities in Latvia	142.6	74.5	37.1	111.6	31.0
due to other EU+ countries in Latvia	7.0	0.0	2.7	2.7	4.2
due to Latvia in other EU+ countries	*28.8*	*0.0*	*10.1*	*10.1*	*18.6*
Employment effect *(jobs per year)*	**7,663**	**5,061**	**1,321**	**6,382**	**1,281**
(in % of total employment)	0.88%	0.58%	0.15%	0.73%	0.15%
Fiscal returns (in mill. €)	**239.7**	**16.4**	**9.5**	**25.9**	**15.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.9%*
indirect land use:	*5,443 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**52.0**	**7.4**	**34.1**	**41.5**	**10.5**
due to Latvian activities in Latvia	40.0	7.4	25.4	32.8	7.2
due to other EU+ countries in Latvia	12.0	0.0	8.6	8.6	3.4
due to Latvia in other EU+ countries	*60.8*	*7.4*	*39.7*	*47.1*	*13.7*
Retail (off-premise)	**20.4**	**3.7**	**9.1**	**12.7**	**7.7**
due to Latvian activities in Latvia	19.0	3.7	8.5	12.2	6.8
due to other EU+ countries in Latvia	1.4	0.0	0.6	0.6	0.9
due to Latvia in other EU+ countries	*26.7*	*3.7*	*11.4*	*15.1*	*11.6*
Catering (on-premise)	**19.4**	**1.6**	**7.5**	**9.2**	**10.2**
due to Latvian activities in Latvia	16.1	1.6	6.5	8.1	8.0
due to other EU+ countries in Latvia	3.3	0.0	1.0	1.0	2.2
due to Latvia in other EU+ countries	*24.6*	*1.6*	*9.4*	*11.0*	*13.6*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Latvian GVA)*	231.0 *(0.87 %)*	0.4%	24.
Employment (in jobs per year): *(in % of Latvian employment)*	10,539 *(1.21 %)*	0.9%	20.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Latvian government revenue)*	263.5 *(2.29 %)*	0.6%	24.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Latvian total CO_2 eq. emissions)*	91.8 *(0.75 %)*	0.5%	25.

Source: *Own calculations on the basis of IWSR and Eurostat*.

Note: The Latvian Alcohol Industry Association has deposed that those figures based on IWSR and Eurostat seem to deviate from national data sources, especially with regard to production figures. Latvia is an interesting case as we had to estimate missing production turnovers based on available Eurostat employment figures. This underlines the need to further improve and coordinate industry statistics in Europe. We must leave the mismatch to future investigations.

8.17 Lithuania

A. Production

Population:	*2.8 mill.*
Annual final consumption expenditure per capita:	*€ 13,508*
Spirits from Lithuania sold worldwide (in 1,000 hectolitres):	*170.9*
Δ 2015-2019 (in %):	*-22.1*
Lithuanian spirits production turnover (in mill. €):	*70.3*
Top-selling Lithuanian spirits products:	*Vodka, Bitters/Spirit Aperitifs, Liqueurs*
Largest export country:	*Poland*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Lithuania	**80.8**	**22.6**	**40.7**	**63.3**	**17.5**
due to Lithuanian activities in Lithuania	55.2	22.6	23.7	46.3	9.0
due to other EU+ countries in Lithuania	25.5	0.0	17.0	17.0	8.5
due to Lithuania in other EU+ countries	*21.5*	*0.0*	*12.9*	*12.9*	*8.6*
Employment effect *(jobs per year)*	**2,628**	**641**	**1,377**	**2,018**	**610**
(in % of total Lithuanian employment)	0.20%	0.05%	0.10%	0.15%	0.05%
Fiscal returns (in mill. €)	**20.4**	**4.6**	**9.4**	**14.0**	**6.4**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Lithuania (in 1,000 hectolitres):	*264.7*
Δ 2015-2019 (in %):	*-25.3*
On-premise share (of volume):	*8 %*
Spirits sold in Lithuania (in € per adult):	*€ 184.70*
Δ 2015-2019 (in %):	*-3.0*
Most favoured products:	*Vodka, Brandy, Bitters/Spirit Aperitifs*
Largest import country:	*French*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Lithuania	**118.7**	**70.4**	**23.5**	**93.9**	**24.8**
due to Lithuanian activities in Lithuania	104.9	70.4	17.6	88.0	16.9
due to other EU+ countries in Lithuania	13.8	0.0	5.9	5.9	7.9
due to Lithuania in other EU+ countries	*15.9*	*0.0*	*5.3*	*5.3*	*10.6*
Employment effect *(jobs per year)*	**5,459**	**3,855**	**734**	**4,589**	**870**
(in % of total employment)	0.41%	0.29%	0.06%	0.35%	0.07%
Fiscal returns (in mill. €)	**283.9**	**14.9**	**4.9**	**19.8**	**9.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*1.0 %*
indirect land use:	*6,057 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**48.3**	**5.7**	**33.9**	**39.5**	**8.8**
due to Lithuanian activities in Lithuania	27.3	5.7	17.8	23.4	3.8
due to other EU+ countries in Lithuania	21.1	0.0	16.1	16.1	5.0
due to Lithuania in other EU+ countries	*41.2*	*5.6*	*27.5*	*33.2*	*8.0*
Retail (off-premise)	**10.1**	**1.8**	**3.8**	**5.6**	**4.4**
due to Lithuanian activities in Lithuania	7.0	1.8	2.3	4.1	2.9
due to other EU+ countries in Lithuania	3.1	0.0	1.6	1.6	1.6
due to Lithuania in other EU+ countries	*10.5*	*1.8*	*3.6*	*5.4*	*5.1*
Catering (on-premise)	**13.7**	**0.8**	**4.7**	**5.5**	**8.2**
due to Lithuanian activities in Lithuania	8.1	0.8	2.6	3.4	4.7
due to other EU+ countries in Lithuania	5.6	0.0	2.1	2.1	3.5
due to Lithuania in other EU+ countries	*12.7*	*0.8*	*3.8*	*4.6*	*8.1*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Lithuanian GVA)*	199.4 *(0.45 %)*	0.3%	25.
Employment (in jobs per year): *(in % of Lithuanian employment)*	8,087 *(0.61 %)*	0.7%	23.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Lithuanian government revenue)*	304.3 *(1.78 %)*	0.6%	23.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Lithuanian total CO_2 eq. emissions)*	72.1 *(0.35 %)*	0.4%	26.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.18 Malta

A. Production

Population:	*0.5 mill.*
Annual final consumption expenditure per capita:	*€ 16,999*
Spirits from Malta sold worldwide (in 1,000 hectolitres):	*0.6*
Δ 2015-2019 (in %):	*-1.4*
Maltese spirits production turnover (in mill. €):	*0.8*
Top-selling Maltese spirits products:	*Liqueurs*
Largest export country:	*-*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Malta	**4.5**	**0.4**	**2.6**	**2.9**	**1.6**
due to Maltese activities in Malta	0.6	0.4	0.1	0.5	0.1
due to other EU+ countries in Malta	3.9	0.0	2.4	2.4	1.5
due to Malta in other EU+ countries	*0.3*	*0.0*	*0.2*	*0.2*	*0.1*
Employment effect *(jobs per year)*	**93**	**8**	**53**	**61**	**32**
(in % of total Maltese employment)	0.04%	0.00%	0.02%	0.02%	0.01%
Fiscal returns (in mill. €)	**1.4**	**0.1**	**0.8**	**0.8**	**0.6**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Malta (in 1,000 hectolitres):	*29.1*
Δ 2015-2019 (in %):	*+ 21.3*
On-premise share (of volume):	*46 %*
Spirits sold in Malta (in € per adult):	*€ 169.1*
Δ 2015-2019 (in %):	*+ 8.0*
Most favoured products:	*Scotch Whisky, Vodka, Liqueurs*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Malta	**48.8**	**29.1**	**13.3**	**42.4**	**6.4**
due to Maltese activities in Malta	46.1	29.1	12.1	41.2	4.9
due to other EU+ countries in Malta	2.7	0.0	1.2	1.2	1.5
due to Malta in other EU+ countries	*16.3*	*0.0*	*9.5*	*9.5*	*6.9*
Employment effect *(jobs per year)*	**1,214**	**784**	**291**	**1,075**	**139**
(in % of total employment)	0.49%	0.31%	0.12%	0.43%	0.06%
Fiscal returns (in mill. €)	**46.1**	**6.6**	**3.4**	**9.9**	**3.2**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.0 %*
indirect land use:	*22 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**0.5**	**0.0**	**0.3**	**0.3**	**0.2**
due to Maltese activities in Malta	0.1	0.0	0.1	0.1	0.0
due to other EU+ countries in Malta	0.4	0.0	0.2	0.2	0.2
due to Malta in other EU+ countries	*0.2*	*0.0*	*0.1*	*0.2*	*0.0*
Retail (off-premise)	**0.5**	**0.2**	**0.2**	**0.3**	**0.1**
due to Maltese activities in Malta	0.4	0.2	0.1	0.3	0.1
due to other EU+ countries in Malta	0.1	0.0	0.0	0.0	0.0
due to Malta in other EU+ countries	*0.7*	*0.2*	*0.3*	*0.5*	*0.2*
Catering (on-premise)	**3.7**	**0.4**	**2.5**	**2.9**	**0.8**
due to Maltese activities in Malta	3.4	0.4	2.4	2.8	0.6
due to other EU+ countries in Malta	0.2	0.0	0.1	0.1	0.1
due to Malta in other EU+ countries	*6.2*	*0.4*	*3.7*	*4.1*	*2.1*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Maltese GVA)*	53.3 *(0.44 %)*	0.1%	*29.*
Employment (in jobs per year): *(in % of Maltese employment)*	1,307 *(0.52 %)*	0.1%	*29.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Maltese government revenue)*	47.5 *(0.94 %)*	0.1%	*29.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Maltese total CO_2 eq. emissions)*	4.6 *(0.11 %)*	0.0%	*29.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.19 Netherlands

A. Production

Population:	*17.1 mill.*
Annual final consumption expenditure per capita:	*€ 31,900*
Spirits from the Netherlands sold worldwide (in 1,000 hl):	*566.5*
Δ 2015-2019 (in %):	*-2.7*
Dutch spirits production turnover (in mill. €):	*396.6*
Top-selling Dutch spirits products:	*Vodka, Liqueurs, Genever*
Largest export country:	*United States*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in the Netherlands	**618.8**	**103.8**	**364.1**	**467.9**	**150.8**
due to Dutch activities in the Netherlands	300.4	103.8	153.3	257.1	43.2
due to other EU+ countries in the Netherlands	318.4	0.0	210.8	210.8	107.6
due to the Netherlands in other EU+ countries	*100.4*	*0.0*	*66.3*	*66.3*	*34.1*
Employment effect *(jobs per year)*	**7,175**	**651**	**4,529**	**5,180**	**1,995**
(in % of total Dutch employment)	0.08%	0.01%	0.05%	0.06%	0.02%
Fiscal returns (in mill. €)	**187.8**	**24.3**	**106.1**	**130.4**	**57.5**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in the Netherlands (in 1,000 hectolitres):	*562.0*
Δ 2015-2019 (in %):	*-3.8*
On-premise share (of volume):	*26 %*
Spirits sold in the Netherlands (in € per adult):	*€ 94.34*
Δ 2015-2019 (in %):	*+6.0*
Most favoured products:	*Scotch Whisky, Liqueurs, Rum*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in the Netherlands	**875.3**	**425.7**	**262.6**	**688.2**	**187.0**
due to Dutch activities in the Netherlands	696.2	425.7	180.0	605.7	90.6
due to other EU+ countries in the Netherlands	179.1	0.0	82.6	82.6	96.5
due to the Netherlands in other EU+ countries	*96.6*	*0.0*	*51.3*	*51.3*	*45.3*
Employment effect *(jobs per year)*	**20,281**	**14,148**	**3,648**	**17,796**	**2,484**
(in % of total employment)	0.23%	0.16%	0.04%	0.20%	0.03%
Fiscal returns (in mill. €)	**895.7**	**101.2**	**70.6**	**171.7**	**73.8**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.8 %*
indirect land use:	*4,447 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**286.8**	**32.2**	**208.4**	**240.6**	**46.3**
due to Dutch activities in the Netherlands	135.9	32.2	94.2	126.4	9.5
due to other EU+ countries in the Netherlands	150.9	0.0	114.1	114.1	36.8
due to the Netherlands in other EU+ countries	*178.5*	*32.1*	*127.0*	*159.2*	*19.3*
Retail (off-premise)	**28.1**	**4.2**	**11.6**	**15.8**	**12.4**
due to Dutch activities in the Netherlands	13.3	4.2	4.5	8.7	4.5
due to other EU+ countries in the Netherlands	14.9	0.0	7.0	7.0	7.8
due to the Netherlands in other EU+ countries	*19.1*	*4.2*	*7.2*	*11.4*	*7.7*
Catering (on-premise)	**116.4**	**27.8**	**44.7**	**72.5**	**43.8**
due to Dutch activities in the Netherlands	68.4	27.8	25.2	53.0	15.3
due to other EU+ countries in the Netherlands	48.0	0.0	19.5	19.5	28.5
due to the Netherlands in other EU+ countries	*87.4*	*27.8*	*34.0*	*61.8*	*25.6*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Dutch GVA)*	1,494.1 *(0.21 %)*	2.5%	*8.*
Employment (in jobs per year): *(in % of Dutch employment)*	27,455 *(0.32 %)*	2.2%	*11.*
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Dutch government revenue)*	1,083.5 *(0.31 %)*	2.3%	*7.*
CO_2 eq. emissions in 1,000 tonnes: *(in % of Dutch total CO_2 eq. emissions)*	431.4 *(0.25 %)*	2.2%	*10.*

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.20 Norway

A. Production

Population:	*5.3 mill.*
Annual final consumption expenditure per capita:	*€ 46,529*
Spirits from Norway sold worldwide (in 1,000 hectolitres):	*49,9*
Δ 2015-2019 (in %):	*+4.1*
Norwegian spirits production turnover (in mill. €):	*77.7*
Top-selling Norwegian spirits products:	*Aquavit, Vodka, Liqueurs*
Largest export country:	*Germany (duty free)*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Norway	**266.1**	**23.5**	**158.6**	**182.1**	**84.0**
due to Norwegian activities in Norway	70.0	23.5	32.6	56.1	14.0
due to other EU+ countries in Norway	196.1	0.0	126.0	126.0	70.1
due to Norway in other EU+ countries	*17.8*	*0.0*	*11.2*	*11.2*	*6.6*
Employment effect *(jobs per year)*	**1615**	**196**	**830**	**1025**	**590**
(in % of total Norwegian employment)	0.06%	0.01%	0.03%	0.04%	0.02%
Fiscal returns (in mill. €)	**99.1**	**8.2**	**53.7**	**61.9**	**37.2**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Norway (in 1,000 hectolitres):	*126.4*
Δ 2015-2019 (in %):	*+ 2.9*
On-premise share (of volume):	*14 %*
Spirits sold in Norway (in € per adult):	*€ 147.16*
Δ 2015-2019 (in %):	*-10.0*
Most favoured products:	*Vodka, Aquavit, Liqueurs*
Largest import country:	*(I) French*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Norway	**224.7**	**72.7**	**74.4**	**147.0**	**77.6**
due to Norwegian activities in Norway	133.0	72.7	33.1	105.8	27.2
due to other EU+ countries in Norway	91.7	0.0	41.3	41.3	50.4
due to Norway in other EU+ countries	*17.0*	*0.0*	*8.0*	*8.0*	*8.9*
Employment effect *(jobs per year)*	**2,417**	**1,460**	**429**	**1,889**	**528**
(in % of total employment)	0.09%	0.06%	0.02%	0.07%	0.02%
Fiscal returns (in mill. €)	**533.3**	**25.3**	**24.7**	**50.0**	**35.3**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.9 %*
indirect land use:	*5,049 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**85.7**	**2.6**	**62.2**	**64.8**	**20.9**
due to Norwegian activities in Norway	18.1	2.6	13.2	15.7	2.4
due to other EU+ countries in Norway	67.6	0.0	49.1	49.1	18.5
due to Norway in other EU+ countries	*25.6*	*2.6*	*18.5*	*21.1*	*4.5*
Retail (off-premise)	**11.6**	**1.1**	**5.5**	**6.5**	**5.0**
due to Norwegian activities in Norway	5.0	1.1	2.3	3.3	1.7
due to other EU+ countries in Norway	6.6	0.0	3.2	3.2	3.3
due to Norway in other EU+ countries	*7.2*	*1.1*	*3.4*	*4.4*	*2.8*
Catering (on-premise)	**30.0**	**1.4**	**13.5**	**14.9**	**15.1**
due to Norwegian activities in Norway	7.4	1.4	2.9	4.3	3.1
due to other EU+ countries in Norway	22.6	0.0	10.7	10.7	11.9
due to Norway in other EU+ countries	*10.4*	*1.4*	*4.0*	*5.4*	*4.9*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Norwegian GVA)*	490.8 *(0.15 %)*	0.8%	19.
Employment (in jobs per year): *(in % of Norwegian employment)*	4,032 *(0.15 %)*	0.3%	27.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Norwegian government revenue)*	632.4 *(0.30 %)*	1.3%	16.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Norwegian total CO_2 eq. emissions)*	127.3 -	0.6%	20.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.21 Poland

A. Production

Population:	*38.0 mill.*
Annual final consumption expenditure per capita:	*€ 10,614*
Spirits from Poland sold worldwide (in 1,000 hectolitres):	*3,211.6*
Δ 2015-2019 (in %):	*+24.2*
Polish spirits production turnover (in mill. €):	*2,748.5*
Top-selling Polish spirits products:	*Vodka, Liqueurs, Gin*
Largest export country:	*United States*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Poland	**2,394.7**	**312.3**	**1,652.1**	**1,964.4**	**430.3**
due to Polish activities in Poland	2,209.3	312.3	1,538.2	1,850.5	358.7
due to other EU+ countries in Poland	185.4	0.0	113.9	113.9	71.6
due to Poland in other EU+ countries	*752.2*	*0.0*	*479.3*	*479.3*	*272.9*
Employment effect *(jobs per year)*	**86,555**	**5,131**	**65,102**	**70,233**	**16,322**
(in % of total Polish employment)	0.54%	0.03%	0.40%	0.44%	0.10%
Fiscal returns (in mill. €)	**788.5**	**83.4**	**502.8**	**586.2**	**202.3**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Poland (in 1,000 hectolitres):	*3,540.6*
Δ 2015-2019 (in %):	*+29.0*
On-premise share (of volume):	*13 %*
Spirits sold in Poland (in € per adult):	*€ 130.63*
Δ 2015-2019 (in %):	*+ 37.0*
Most favoured products:	*Vodka, Scotch Whisky, Liqueurs*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Poland	**1,180.3**	**622.1**	**332.5**	**954.6**	**225.7**
due to Polish activities in Poland	1,055.0	622.1	281.9	904.0	151.0
due to other EU+ countries in Poland	125.3	0.0	50.6	50.6	74.7
due to Poland in other EU+ countries	*136.9*	*0.0*	*63.1*	*63.1*	*73.7*
Employment effect *(jobs per year)*	**61,185**	**41,395**	**11,144**	**52,539**	**8,646**
(in % of total employment)	0.38%	0.26%	0.07%	0.33%	0.05%
Fiscal returns (in mill. €)	**2,990.8**	**167.2**	**96.4**	**263.5**	**104.6**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*25.6 %*
indirect land use:	*150,006 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**3,802.2**	**132.8**	**3,190.8**	**3,323.6**	**478.6**
due to Polish activities in Poland	3,558.9	132.8	3,026.9	3,159.8	399.2
due to other EU+ countries in Poland	243.3	0.0	163.9	163.9	79.4
due to Poland in other EU+ countries	*3,902.9*	*132.7*	*3280.5*	*3,413.2*	*489.7*
Retail (off-premise)	**252.1**	**46.6**	**129.7**	**176.4**	**75.7**
due to Polish activities in Poland	218.3	46.6	115.1	161.7	56.6
due to other EU+ countries in Poland	33.8	0.0	14.6	14.6	19.1
due to Poland in other EU+ countries	*237.9*	*46.6*	*125.5*	*172.1*	*65.8*
Catering (on-premise)	**504.0**	**54.4**	**264.8**	**319.2**	**184.8**
due to Polish activities in Poland	403.3	54.4	228.6	283.0	120.3
due to other EU+ countries in Poland	100.8	0.0	36.2	36.2	64.5
due to Poland in other EU+ countries	*435.9*	*54.4*	*243.5*	*297.8*	*138.0*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Polish GVA)*	3,575.0 (0.76 %)	6.0%	6.
Employment (in jobs per year): *(in % of Polish employment)*	147,740 (0.92 %)	12.0%	2.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Polish government revenue)*	3,779.3 (1.72 %)	8.1%	4.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Polish total CO_2 eq. emissions)*	4,558.3 (1.32 %)	23.3%	1.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.22 Portugal

A. Production

Population:	*10.3 mill.*
Annual final consumption expenditure per capita:	*€ 16,781*
Spirits from Portugal sold worldwide (in 1,000 hectolitres):	*88.3*
Δ 2015-2019 (in %):	*+ 1.3*
Portuguese spirits production turnover (in mill. €):	*85.3*
Top-selling Portuguese spirits products:	*Brandy, Liqueurs, Gin*
Largest export country:	*Angola (2nd: Macau)*

Economic Effects from production:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Portugal	**134.2**	**26.3**	**66.1**	**92.5**	**41.7**
due to Portuguese activities in Portugal	77.0	26.3	34.0	60.3	16.7
due to other EU+ countries in Portugal	57.2	0.0	32.2	32.2	25.1
due to Portugal in other EU+ countries	*25.1*	*0.0*	*13.8*	*13.8*	*11.3*
Employment effect *(jobs per year)*	**3,772**	**507**	**2,059**	**2,566**	**1,206**
(in % of total Portuguese employment)	0.08%	0.01%	0.04%	0.06%	0.03%
Fiscal returns (in mill. €)	**47.2**	**7.4**	**21.9**	**29.3**	**17.9**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Portugal (in 1,000 hectolitres):	*247.2*
Δ 2015-2019 (in %):	*+4.3*
On-premise share (of volume):	*53 %*
Spirits sold in Portugal (in € per adult):	*€ 62.27*
Δ 2015-2019 (in %):	*+33.0*
Most favoured products:	*Scotch Whisky, Liqueurs, Gin*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Portugal	**650.7**	**359.7**	**139.2**	**498.9**	**151.8**
due to Portuguese activities in Portugal	611.7	359.7	124.9	484.6	127.1
due to other EU+ countries in Portugal	39.0	0.0	14.3	14.3	24.7
due to Portugal in other EU+ countries	*87.4*	*0.0*	*26.5*	*26.5*	*60.9*
Employment effect *(jobs per year)*	**19,675**	**11,883**	**3,525**	**15,408**	**4,267**
(in % of total employment)	0.42%	0.26%	0.08%	0.33%	0.09%
Fiscal returns (in mill. €)	**525.8**	**95.2**	**40.4**	**135.6**	**68.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.3 %*
indirect land use:	*1,845 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**83.2**	**6.9**	**58.6**	**65.5**	**17.6**
due to Portuguese activities in Portugal	42.4	6.9	29.4	36.3	6.1
due to other EU+ countries in Portugal	40.7	0.0	29.2	29.2	11.5
due to Portugal in other EU+ countries	*53.3*	*6.9*	*36.7*	*43.6*	*9.7*
Retail (off-premise)	**14.1**	**2.1**	**6.1**	**8.2**	**5.9**
due to Portuguese activities in Portugal	10.5	2.1	4.6	6.7	3.8
due to other EU+ countries in Portugal	3.6	0.0	1.5	1.5	2.1
due to Portugal in other EU+ countries	*13.2*	*2.1*	*5.5*	*7.6*	*5.5*
Catering (on-premise)	**146.9**	**30.7**	**62.7**	**93.5**	**53.5**
due to Portuguese activities in Portugal	131.0	30.7	57.2	87.9	43.1
due to other EU+ countries in Portugal	15.9	0.0	5.6	5.6	10.4
due to Portugal in other EU+ countries	*158.0*	*30.7*	*65.3*	*96.0*	*62.0*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Portuguese GVA)*	784.9 (0.42 %)	1.3%	15.
Employment (in jobs per year): *(in % of Portuguese employment)*	23,447 (0.50 %)	1.9%	14.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Portuguese government revenue)*	573.0 (0.63 %)	1.2%	17.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Portuguese total CO_2 eq. emissions)*	244.2 (0.47 %)	1.2%	14.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.23 Romania

A. Production

Population:	*19.6 mill.*
Annual final consumption expenditure per capita:	*€ 9,256*
Spirits from Romania sold worldwide (in 1,000 hectolitres):	*956.0*
Δ 2015-2019 (in %):	*-2.34*
Romanian spirits production turnover (in mill. €):	*118.43*
Top-selling Romanian spirits products:	*Brandy, Vodka, Fruit Eaux de Vie*
Largest export country:	*Ecuador (2nd: Greece)*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Romania	**174.8**	**43.3**	**83.2**	**126.5**	**48.3**
due to Romanian activities in Romania	113.4	43.3	48.2	91.6	21.9
due to other EU+ countries in Romania	61.4	0.0	35.0	35.0	26.4
due to Romania in other EU+ countries	*27.8*	*0.0*	*14.7*	*14.7*	*13.1*
Employment effect *(jobs per year)*	**8,685**	**1,487**	**4,547**	**6,035**	**2,650**
(in % of total Romanian employment)	0.10%	0.02%	0.05%	0.07%	0.03%
Fiscal returns (in mill. €)	**44.3**	**8.4**	**19.5**	**27.9**	**16.4**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Romania (in 1,000 hectolitres):	*1,078.18*
Δ 2015-2019 (in %):	*+2.0*
On-premise share (of volume):	*24 %*
Spirits sold in Romania (in € per adult):	*€ 42.83*
Δ 2015-2019 (in %):	*+6.2*
Most favoured products:	*Fruit Eaux de Vie, Vodka, Brandy*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Romania	**590.8**	**299.7**	**153.9**	**453.6**	**137.2**
due to Romanian activities in Romania	547.1	299.7	137.9	437.6	109.5
due to other EU+ countries in Romania	43.8	0.0	16.0	16.0	27.8
due to Romania in other EU+ countries	*82.1*	*0.0*	*29.6*	*29.6*	*52.5*
Employment effect *(jobs per year)*	**35,433**	**20,685**	**7,147**	**27,832**	**7,600**
(in % of total employment)	0.42%	0.25%	0.09%	0.33%	0.09%
Fiscal returns (in mill. €)	**483.8**	**56.0**	**37.8**	**93.8**	**49.0**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*1.2 %*
indirect land use:	*6,990 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**120.9**	**6.2**	**81.3**	**87.4**	**33.4**
due to Romanian activities in Romania	71.6	6.2	50.5	56.7	14.9
due to other EU+ countries in Romania	49.3	0.0	30.7	30.7	18.6
due to Romania in other EU+ countries	*85.7*	*6.2*	*59.4*	*65.6*	*20.2*
Retail (off-premise)	**57.5**	**3.6**	**33.5**	**37.1**	**20.4**
due to Romanian activities in Romania	49.9	3.6	30.1	33.7	16.2
due to other EU+ countries in Romania	7.6	0.0	3.4	3.4	4.2
due to Romania in other EU+ countries	*59.4*	*3.6*	*34.5*	*38.1*	*21.3*
Catering (on-premise)	**166.0**	**14.1**	**76.0**	**90.1**	**75.9**
due to Romanian activities in Romania	140.1	14.1	67.6	81.7	58.3
due to other EU+ countries in Romania	25.9	0.0	8.4	8.4	17.5
due to Romania in other EU+ countries	*164.9*	*14.1*	*75.8*	*89.9*	*74.9*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Romanian GVA)*	765.63 (0.38 %)	1.3%	16.
Employment (in jobs per year): *(in % of Romanian employment)*	44,118 (0.52 %)	3.6%	9.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Romanian government revenue)*	528.0 (0.74 %)	1.1%	18.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Romanian total CO_2 eq. emissions)*	344.3 (0.36 %)	1.8%	12.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.24 Slovakia

A. Production

Population:	*5.4 mill.*
Annual final consumption expenditure per capita:	*€ 13,141*
Spirits from Slovakia sold worldwide (in 1,000 hectolitres):	*344.1*
Δ 2015-2019 (in %):	*+ 2.0*
Slovak spirits production turnover (in mill. €):	*90.6*
Top-selling Slovak spirits products:	*Vodka, Fruit Eaux de Vie, Brandy*
Largest export country:	*Czech Republic*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Slovakia	**123.3**	**20.3**	**70.3**	**90.7**	**32.6**
due to Slovak activities in Slovakia	66.6	20.3	35.0	55.3	11.3
due to other EU+ countries in Slovakia	56.7	0.0	35.4	35.4	21.3
due to Slovakia in other EU+ countries	*34.0*	*0.0*	*20.7*	*20.7*	*13.4*
Employment effect *(jobs per year)*	**3,822**	**876**	**2,025**	**2,901**	**922**
(in % of total Slovak employment)	0.15%	0.03%	0.08%	0.11%	0.04%
Fiscal returns (in mill. €)	**40.8**	**6.6**	**20.8**	**27.4**	**13.4**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Slovakia (in 1,000 hectolitres):	*472.9*
Δ 2015-2019 (in %):	*+7.6*
On-premise share (of volume):	*19 %*
Spirits sold in Slovakia (in € per adult):	*€ 150.87*
Δ 2015-2019 (in %):	*+19.1*
Most favoured products:	*Vodka, Bitters/Spirit Aperitifs, Fruit Eaux de Vie*
Largest import country:	*Czech Republic*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Slovakia	**347.1**	**190.9**	**88.7**	**279.5**	**67.6**
due to Slovak activities in Slovakia	311.9	190.9	74.1	265.0	46.9
due to other EU+ countries in Slovakia	35.2	0.0	14.5	14.5	20.7
due to Slovakia in other EU+ countries	*64.1*	*0.0*	*27.9*	*27.9*	*36.2*
Employment effect *(jobs per year)*	**19,796**	**15,243**	**2,694**	**17,938**	**1,858**
(in % of total employment)	0.78%	0.60%	0.11%	0.71%	0.07%
Fiscal returns (in mill. €)	**445.2**	**58.8**	**26.0**	**84.8**	**30.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*1.6 %*
indirect land use:	*9,220 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**92.2**	**13.3**	**58.6**	**71.9**	**20.4**
due to Slovak activities in Slovakia	43.9	13.3	25.3	38.6	5.2
due to other EU+ countries in Slovakia	48.4	0.0	33.2	33.2	15.1
due to Slovakia in other EU+ countries	*64.7*	*13.3*	*40.2*	*53.5*	*11.2*
Retail (off-premise)	**23.7**	**1.7**	**13.3**	**15.0**	**8.6**
due to Slovak activities in Slovakia	17.2	1.7	10.3	11.9	5.3
due to other EU+ countries in Slovakia	6.5	0.0	3.1	3.1	3.4
due to Slovakia in other EU+ countries	*25.8*	*1.7*	*14.5*	*16.2*	*9.6*
Catering (on-premise)	**82.0**	**21.5**	**31.3**	**52.8**	**29.2**
due to Slovak activities in Slovakia	62.1	21.5	23.7	45.2	17.0
due to other EU+ countries in Slovakia	19.9	0.0	7.6	7.6	12.3
due to Slovakia in other EU+ countries	*84.7*	*21.4*	*33.4*	*54.9*	*29.9*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Slovak GVA)*	470.37 (0.56 %)	0.8%	21.
Employment (in jobs per year): *(in % of Slovak employment)*	23,619 (0.93 %)	1.9%	13.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Slovak government revenue)*	486.0 (1.25 %)	1.0%	21.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Slovak total CO_2 eq. emissions)*	197.9 (0.56 %)	1.0%	18.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.25 Slovenia

A. Production

Population:	*2.1 mill.*
Annual final consumption expenditure per capita:	*€ 16,411*
Spirits from Slovenia sold worldwide (in 1,000 hectolitres):	*15.8*
Δ 2015-2019 (in %):	*-14.0*
Slovenian spirits production turnover (in mill. €):	*2.3*
Top-selling Slovenian spirits products:	*Fruit Eaux de Vie, Liqueurs, Bitters/Spirit Aperitifs*
Largest export country:	*Croatia*

Economic Effects from production:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Slovenia	**21.7**	**1.0**	**12.7**	**13.7**	**8.0**
due to Slovenian activities in Slovenia	1.8	1.0	0.6	1.6	0.2
due to other EU+ countries in Slovenia	19.8	0.0	12.1	12.1	7.8
due to Slovenia in other EU+ countries	*0.7*	*0.0*	*0.4*	*0.4*	*0.3*
Employment effect *(jobs per year)*	**578**	**18**	**349**	**367**	**211**
(in % of total Slovenian employment)	0.06%	0.00%	0.04%	0.04%	0.02%
Fiscal returns (in mill. €)	**8.7**	**0.3**	**4.7**	**5.0**	**3.7**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Slovenia (in 1,000 hectolitres):	*47.9*
Δ 2015-2019 (in %):	*+0.4*
On-premise share (of volume):	*42 %*
Spirits sold in Slovenia (in € per adult):	*€ 56.53*
Δ 2015-2019 (in %):	*+12.4*
Most favoured products:	*Bitters/Spirit Aperitifs, Gin, Vodka*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		**…of which**			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Slovenia	**92.1**	**45.2**	**24.4**	**69.6**	**22.5**
due to Slovenian activities in Slovenia	77.0	45.2	18.1	63.4	13.6
due to other EU+ countries in Slovenia	15.1	0.0	6.3	6.3	8.8
due to Slovenia in other EU+ countries	*17.1*	*0.0*	*7.1*	*7.1*	*10.0*
Employment effect *(jobs per year)*	**3,188**	**1,975**	**615**	**2,590**	**598**
(in % of total employment)	0.33%	0.20%	0.06%	0.27%	0.06%
Fiscal returns (in mill. €)	**86.4**	**12.7**	**8.2**	**20.9**	**11.2**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0.1 %*
indirect land use:	*44 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**14.4**	**0.4**	**9.6**	**10.0**	**4.4**
due to Slovenian activities in Slovenia	1.1	0.4	0.5	1.0	0.1
due to other EU+ countries in Slovenia	13.3	0.0	9.1	9.1	4.3
due to Slovenia in other EU+ countries	*1.4*	*0.4*	*0.8*	*1.2*	*0.2*
Retail (off-premise)	**4.7**	**0.8**	**2.1**	**2.9**	**1.8**
due to Slovenian activities in Slovenia	2.8	0.8	1.2	2.0	0.8
due to other EU+ countries in Slovenia	1.9	0.0	0.9	0.9	1.0
due to Slovenia in other EU+ countries	*3.7*	*0.8*	*1.6*	*2.5*	*1.3*
Catering (on-premise)	**29.5**	**7.2**	**11.7**	**18.9**	**10.6**
due to Slovenian activities in Slovenia	21.2	7.2	7.7	14.9	6.3
due to other EU+ countries in Slovenia	8.2	0.0	4.0	4.0	4.3
due to Slovenia in other EU+ countries	*27.2*	*7.2*	*10.1*	*17.3*	*9.9*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Slovenian GVA)*	113.77 (0.27 %)	0.2%	28.
Employment (in jobs per year): *(in % of Slovenian employment)*	3,766 (0.39 %)	0.3%	28.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Slovenian government revenue)*	95.1 (0.45 %)	0.2%	28.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Slovenian total CO_2 eq. emissions)*	48.5 (0.32 %)	0.2%	28.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.26 Spain

A. Production

Population:	*46.5 mill.*
Annual final consumption expenditure per capita:	*€ 20,128*
Spirits from Spain sold worldwide (in 1,000 hectolitres):	*1,645.6*
Δ 2015-2019 (in %):	*+ 24.5*
Spanish spirits production turnover (in mill. €):	*1,116.8*
Top-selling Spanish spirits products:	*Brandy, Gin, Liqueurs*
Largest export country:	*Philippines*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Spain	**1,454.5**	**352.6**	**702.5**	**1,055.2**	**399.4**
due to Spanish activities in Spain	1,124.6	352.6	512.3	864.9	259.7
due to other EU+ countries in Spain	329.9	0.0	190.3	190.3	139.7
due to Spain in other EU+ countries	*198.9*	*0.0*	*109.8*	*109.8*	*89.0*
Employment effect *(jobs per year)*	**23,141**	**3,421**	**12,715**	**16,136**	**7,005**
(in % of total Spanish employment)	0.12%	0.02%	0.06%	0.08%	0.04%
Fiscal returns (in mill. €)	**503.1**	**103.3**	**231.7**	**335.0**	**168.1**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Spain (in 1,000 hectolitres):	*1,889.5*
Δ 2015-2019 (in %):	*+ 1.8*
On-premise share (of volume):	*61 %*
Spirits sold in Spain (in € per adult):	*€ 76.99*
Δ 2015-2019 (in %):	*+ 11.0*
Most favoured products:	*Gin, Scotch Whisky, Rum*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Spain	**4,262.3**	**2,530.1**	**792.4**	**3,322.5**	**939.8**
due to Spanish activities in Spain	4,079.3	2,530.1	727.7	3,257.7	821.6
due to other EU+ countries in Spain	182.9	0.0	64.8	64.8	118.2
due to Spain in other EU+ countries	*298.3*	*0.0*	*102.0*	*102.0*	*196.2*
Employment effect *(jobs per year)*	**87,899**	**56,876**	**14,714**	**71,590**	**16,309**
(in % of total employment)	0.45%	0.29%	0.08%	0.37%	0.08%
Fiscal returns (in mill. €)	**3,239.8**	**724.1**	**245.2**	**969.2**	**412.0**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*4,6 %*
indirect land use:	*27,197 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**587.2**	**48.9**	**428.3**	**477.2**	**110.0**
due to Spanish activities in Spain	420.6	48.9	309.0	357.9	62.6
due to other EU+ countries in Spain	166.6	0.0	119.3	119.3	47.3
due to Spain in other EU+ countries	*500.3*	*48.9*	*361.1*	*409.9*	*90.4*
Retail (off-premise)	**55.9**	**6.1**	**26.6**	**32.7**	**23.3**
due to Spanish activities in Spain	40.4	6.1	20.1	26.2	14.2
due to other EU+ countries in Spain	15.5	0.0	6.5	6.5	9.1
due to Spain in other EU+ countries	*48.9*	*6.1*	*23.6*	*29.7*	*19.3*
Catering (on-premise)	**451.8**	**21.6**	**211.6**	**233.2**	**218.6**
due to Spanish activities in Spain	399.0	21.6	194.2	215.8	183.2
due to other EU+ countries in Spain	52.8	0.0	17.4	17.4	35.4
due to Spain in other EU+ countries	*486.2*	*21.6*	*221.5*	*243.1*	*243.1*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Spanish GVA)*	5,716.81 (0.51 %)	9.5%	5.
Employment (in jobs per year): *(in % of Spanish employment)*	111,040 (0.57 %)	9.0%	4.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Spanish government revenue)*	3,742.8 (0.77 %)	8.0%	5.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Spanish total CO_2 eq. emissions)*	1,095.0 (0.43 %)	5.6%	6.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.27 Sweden

A. Production

Population:	*10.0 mill.*
Annual final consumption expenditure per capita:	*€ 32,796*
Spirits from Sweden sold worldwide (in 1,000 hectolitres):	*1,463.8*
Δ 2015-2019 (in %):	*+ 2.6*
Swedish spirits production turnover (in mill. €):	*626.0*
Top-selling Swedish spirits products:	*Vodka, Aquavit, Whisky*
Largest export country:	*United States*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Sweden	**717.4**	**274.7**	**299.9**	**574.6**	**142.8**
due to Swedish activities in Sweden	569.4	274.7	205.0	479.7	89.7
due to other EU+ countries in Sweden	148.0	0.0	94.9	94.9	53.1
due to Sweden in other EU+ countries	*136.6*	*0.0*	*81.0*	*81.0*	*55.6*
Employment effect *(jobs per year)*	**6,434**	**1,836**	**3,082**	**4,918**	**1,516**
(in % of total Swedish employment)	0.13%	0.04%	0.06%	0.10%	0.03%
Fiscal returns (in mill. €)	**276.5**	**93.0**	**114.1**	**207.1**	**69.4**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Sweden (in 1,000 hectolitres):	*235.0*
Δ 2015-2019 (in %):	*+9.8*
On-premise share (of volume):	*12 %*
Spirits sold in Sweden (in € per adult):	*€ 102.20*
Δ 2015-2019 (in %):	*-4.9*
Most favoured products:	*Scotch Whisky, Vodka, Gin*
Largest import country:	*United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Sweden	**255.4**	**98.4**	**82.4**	**180.8**	**74.6**
due to Swedish activities in Sweden	170.5	98.4	44.5	142.8	27.7
due to other EU+ countries in Sweden	84.8	0.0	38.0	38.0	46.9
due to Sweden in other EU+ countries	*22.2*	*0.0*	*9.9*	*9.9*	*12.3*
Employment effect *(jobs per year)*	**3,679**	**2,070**	**838**	**2,908**	**771**
(in % of total employment)	0.07%	0.04%	0.02%	0.06%	0.02%
Fiscal returns (in mill. €)	**649.7**	**34.0**	**29.6**	**63.5**	**35.0**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*2.6 %*
indirect land use:	*14,926 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**175.1**	**41.2**	**111.2**	**152.5**	**22.6**
due to Swedish activities in Sweden	135.9	41.2	82.0	123.3	12.7
due to other EU+ countries in Sweden	39.1	0.0	29.2	29.2	10.0
due to Sweden in other EU+ countries	*201.4*	*41.2*	*129.6*	*170.8*	*30.6*
Retail (off-premise)	**10.5**	**1.5**	**5.1**	**6.6**	**3.9**
due to Swedish activities in Sweden	5.9	1.5	2.7	4.2	1.7
due to other EU+ countries in Sweden	4.5	0.0	2.4	2.4	2.1
due to Sweden in other EU+ countries	*9.3*	*1.5*	*4.3*	*5.8*	*3.6*
Catering (on-premise)	**18.7**	**0.5**	**8.8**	**9.3**	**9.4**
due to Swedish activities in Sweden	5.9	0.5	3.2	3.7	2.2
due to other EU+ countries in Sweden	12.7	0.0	5.6	5.6	7.2
due to Sweden in other EU+ countries	*10.1*	*0.5*	*5.0*	*5.5*	*4.6*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Swedish GVA)*	972.8 (0.23 %)	1.6%	12.
Employment (in jobs per year): *(in % of Swedish employment)*	10,113 (0.20 %)	0.8%	21.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Swedish government revenue)*	926.1 (0.39 %)	2.0%	11.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Swedish total CO_2 eq. emissions)*	204.2 (0.44 %)	1.0%	17.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.28 Switzerland

A. Production

Population:	*8.4 mill.*
Annual final consumption expenditure per capita:	*€ 48,142*
Spirits from Switzerland sold worldwide (in 1,000 hectolitres):	*56.2*
Δ 2015-2019 (in %):	*-17.9*
Swiss spirits production turnover (in mill. €):	*58.6*
Top-selling Swiss spirits products:	*Liqueurs, Fruit Eaux de Vie, Vodka*
Largest export country:	*Germany*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Switzerland	**251.1**	**22.1**	**129.0**	**151.2**	**100.0**
due to Swiss activities in Switzerland	56.8	22.1	21.4	43.5	13.3
due to other EU+ countries in Switzerland	194.3	0.0	107.6	107.6	86.7
due to Switzerland in other EU+ countries	*16.0*	*0.0*	*8.6*	*8.6*	*7.3*
Employment effect *(jobs per year)*	**2,018**	**190**	**1,012**	**1,201**	**816**
(in % of total Swiss employment)	0.04%	0.00%	0.02%	0.03%	0.02%
Fiscal returns (in mill. €)	**50.1**	**4.2**	**23.7**	**27.9**	**22.2**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in Switzerland (in 1,000 hectolitres):	*229.3*
Δ 2015-2019 (in %):	*-0.1*
On-premise share (of volume):	*41 %*
Spirits sold in Switzerland (in € per adult):	*€ 97.39*
Δ 2015-2019 (in %):	*-5.9*
Most favoured products:	*Scotch Whisky, Bitters/Spirit Aperitifs, Liqueurs*
Largest import country:	*(I) United Kingdom*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in Switzerland	**774.8**	**342.2**	**209.9**	**552.0**	**222.7**
due to Swiss activities in Switzerland	654.4	342.2	164.1	506.2	148.1
due to other EU+ countries in Switzerland	120.4	0.0	45.8	45.8	74.6
due to Switzerland in other EU+ countries	*111.3*	*0.0*	*42.0*	*42.0*	*69.2*
Employment effect *(jobs per year)*	**11,189**	**7,675**	**1,591**	**9,266**	**1,923**
(in % of total employment)	0.25%	0.17%	0.04%	0.20%	0.04%
Fiscal returns (in mill. €)	**409.9**	**51.7**	**38.0**	**89.7**	**52.2**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*0,1 %*
indirect land use:	*710 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	**34.3**	**1.8**	**22.2**	**24.0**	**10.4**
due to Swiss activities in Switzerland	9.7	1.8	6.6	8.4	1.3
due to other EU+ countries in Switzerland	24.6	0.0	15.6	15.6	9.0
due to Switzerland in other EU+ countries	*16.0*	*1.8*	*10.8*	*12.6*	*3.4*
Retail (off-premise)	**10.1**	**0.9**	**5.7**	**6.6**	**3.5**
due to Swiss activities in Switzerland	6.7	0.9	4.0	4.9	1.7
due to other EU+ countries in Switzerland	3.5	0.0	1.7	1.7	1.8
due to Switzerland in other EU+ countries	*11.2*	*0.9*	*6.2*	*7.1*	*4.1*
Catering (on-premise)	**62.3**	**19.3**	**23.9**	**43.2**	**19.1**
due to Swiss activities in Switzerland	52.5	19.3	20.1	39.4	13.0
due to other EU+ countries in Switzerland	9.8	0.0	3.8	3.8	6.0
due to Switzerland in other EU+ countries	*80.4*	*19.3*	*31.0*	*50.4*	*30.0*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of Swiss GVA)*	1,025.9 (0.16 %)	1.7%	10.
Employment (in jobs per year): *(in % of Swiss employment)*	13,207 (0.29 %)	1.1%	18.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of Swiss government revenue)*	460.1 (0.21 %)	1.0%	22.
CO_2 eq. emissions in 1,000 tonnes: *(in % of Swiss total CO_2 eq. emissions)*	106.7 -	0.5%	24.

Source: *Own calculations on the basis of IWSR and Eurostat*.

8.29 United Kingdom (UK)

A. Production

Population:	*65.8 mill.*
Annual final consumption expenditure per capita:	*€ 31,421*
Spirits from the UK sold worldwide (in 1,000 hectolitres):	*10,645.8*
Δ 2015-2019 (in %):	*+ 7.5*
British spirits production turnover (in mill. €):	*7,732.5*
Top-selling British spirits products:	*Scotch Whisky, Gin, Other Whisky*
Largest export country:	*United States (duty free)*

Economic Effects from production:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in the UK	**8,627.7**	**4,086.5**	**2,848.7**	**6,935.2**	**1,692.5**
due to British activities in the UK	8,090.1	4,086.5	2,530.8	6,617.3	1,472.8
due to other EU+ countries in the UK	537.5	0.0	317.9	317.9	219.7
due to the UK in other EU+ countries	*847.5*	*0.0*	*450.2*	*450.2*	*397.3*
Employment effect *(jobs per year)*	**71,189**	**14,695**	**36,205**	**50,900**	**20,289**
(in % of total British employment)	0.23%	0.05%	0.12%	0.16%	0.06%
Fiscal returns (in mill. €)	**2,990.7**	**1,309.5**	**945.5**	**2,255.1**	**735.6**

B. Consumption (i.e. sales on- and off-premise)

Spirits sold in the UK (in 1,000 hectolitres):	*3,029.1*
Δ 2015-2019 (in %):	*+ 5.2*
On-premise share (of volume):	*35 %*
Spirits sold in the UK (in € per adult):	*€ 170.50*
Δ 2015-2019 (in %):	*-10.6*
Most favoured products:	*Gin, Vodka, Scotch Whisky*
Largest import country:	*(I) United States*

Economic effects from on- and off-premise consumption:		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Gross value added (GVA) in the UK	**6,472.9**	**3,118.1**	**1,706.4**	**4,824.5**	**1,648.4**
due to British activities in the UK	6,155.4	3,118.1	1,572.3	4,690.4	1,465.0
due to other EU+ countries in the UK	317.5	0.0	134.1	134.1	183.4
due to the UK in other EU+ countries	*520.7*	*0.0*	*196.0*	*196.0*	*324.7*
Employment effect *(jobs per year)*	**127,171**	**84,871**	**22,887**	**107,758**	**19,413**
(in % of total employment)	0.41%	0.27%	0.07%	0.34%	0.06%
Fiscal returns (in mill. €)	**7,316.4**	**818.5**	**536.2**	**1,354.7**	**738.5**

C. Environmental Aspects

Share of EU+ spirits CO_2 eq. emissions:	*14.5 %*
indirect land use:	*84,641 ha*

CO_2 eq. emissions (in 1,000 tonnes):		…of which			
	overall	**direct**	**indirect**	***dir.+indir.***	**induced**
Production	***2558.7***	***915.9***	***1328.6***	***2244.5***	***314.1***
due to British activities in the UK	*2413.0*	*915.9*	*1229.0*	*2144.9*	*268.1*
due to other EU+ countries in the UK	*145.6*	*0.0*	*99.6*	*99.6*	*46.0*
due to the UK in other EU+ countries	*2,776.0*	*915.0*	*1,466.6*	*2,381.5*	*394.4*
Retail (off-premise)	***154.4***	***35.3***	***68.6***	***103.9***	***50.5***
due to British activities in the UK	*139.6*	*35.3*	*62.2*	*97.5*	*42.1*
due to other EU+ countries in the UK	*14.8*	*0.0*	*6.4*	*6.4*	*8.4*
due to the UK in other EU+ countries	*168.9*	*35.3*	*74.3*	*109.5*	*59.3*
Catering (on-premise)	***697.3***	***145.3***	***289.6***	***434.9***	***262.4***
due to British activities in the UK	*642.9*	*145.3*	*268.5*	*413.8*	*229.1*
due to other EU+ countries in the UK	*54.4*	*0.0*	*21.1*	*21.1*	*33.3*
due to the UK in other EU+ countries	*778.4*	*145.1*	*314.7*	*459.8*	*318.6*

TOTAL

	Value	***Share (EU+)***	***Rank (EU+)***
Gross value added (GVA) in mill. €: *(in % of British GVA)*	15,100.6 (0.67 %)	25.2%	1.
Employment (in jobs per year): *(in % of British employment)*	198,360 (0.63 %)	16.2%	1.
Fiscal effects (incl. VAT+Excise) in mill. €: *(in % of British government revenue)*	10,307.1 -	22.0%	1.
CO_2 eq. emissions in 1,000 tonnes: *(in % of British total CO_2 eq. emissions)*	3,410.3 (0.93 %)	17.4%	2.

Source: *Own calculations on the basis of IWSR and Eurostat*.