FINAL

THE ALCOHOLIC BEVERAGES SECTOR IN THE CZECH REPUBLIC: ECONOMIC CONTRIBUTION AND EFFECTS OF ALTERNATIVE TAX REFORMS

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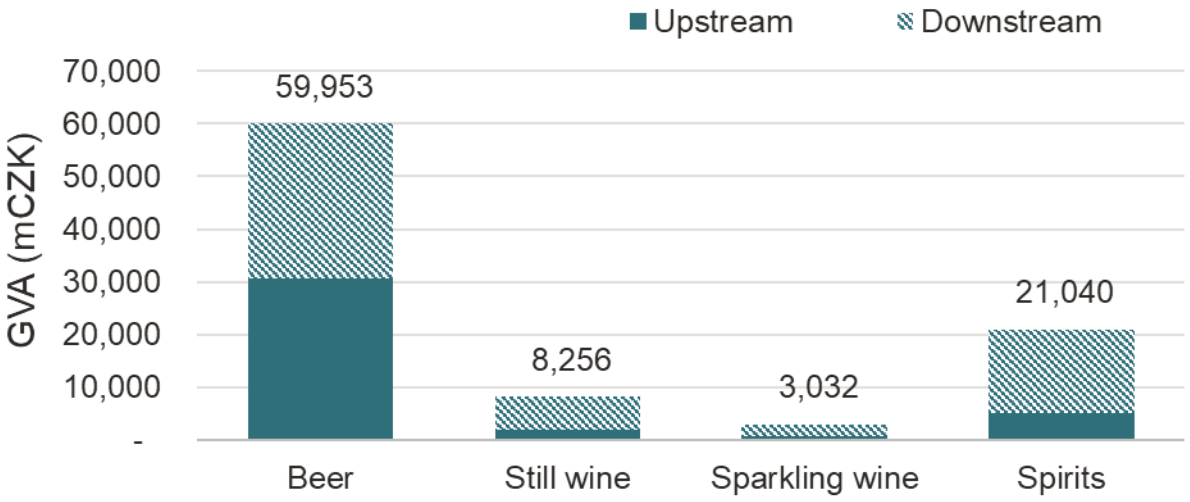
FINDINGS AND KEY MESSAGES

1 In 2023, the alcoholic beverages sector generated around **CZK 92.3 billion** in Gross Value Added ("GVA") through both upstream manufacturing activity and downstream activity related to domestic alcoholic beverages sales via wholesale and off- and on-trade retail distribution channels. Beer accounted for the largest share of this total, with a combined upstream and downstream GVA contribution of around **CZK 60 billion**, while spirits contributed around **CZK 21 billion**. The contribution associated with wine was comparatively smaller at around **CZK 11 billion** (see Figure 1 below). In employment terms, alcoholic beverages sector supported just under **95,000 full-time equivalent (FTE) jobs** in 2023 across upstream and downstream activities, including around **60,000** for beer, **24,000** for spirits, and just under **11,000** for wine (still and sparkling combined).

Figure 1 GVA contribution of alcoholic beverages, by segment, 2023



Source: Frontier Economics

Note: This table aggregates the economic contribution across the direct, indirect and induced effects. Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the alcoholic beverages sector are assumed to apply for each of the segments

2 Although the contribution of beer was largest in absolute terms, it should be noted that the **structure of the economic contribution** differs across categories. For spirits, downstream activities account for a comparatively larger share of the total contribution than they do for beer, indicating that the economic role of spirits extends beyond domestic manufacturing activity alone. In addition, spirits manufacturing exhibits a significantly higher **value-added intensity on a per-litre** basis, with average GVA per litre of finished product estimated at **CZK 97**, compared with **CZK 17** for beer. This helps explain why a category with a smaller production share can nevertheless make a substantial economic contribution overall.

3 The current Czech excise duty regime treats alcoholic beverages very unevenly. In 2023, before the further increases in spirits duty announced for 2024, 2025 and 2026, the implied excise duty rate on ethanol in spirits was already around **4 times higher** than that applied to ethanol in beer. On a standard serving, excise duty on spirits exceeded that on a comparable serving of beer by around **CZK 4.45** and that on sparkling wine by around **CZK 1.77**, while still wine remained fully exempt.[1]

4 Spirits generated a substantial tax contribution in 2023, at around **CZK 14.7 billion**, compared with **CZK 18.8 billion** for beer. The subsequent spirits-only duty increases formed part of the government's fiscal consolidation package and were expected to raise around **CZK 1.4 billion** over 2024–2025. In practice, excise revenues fell by around **CZK 1.6 billion**, implying an outcome around **CZK 3.0 billion below expectations**. This suggests that a spirits-focused approach did not deliver the intended fiscal outcome and raises the question of whether broader alcohol tax reform could achieve revenue goals more effectively.

5 Three alternative scenarios are modelled against a **2023 baseline**, chosen because it preceded the subsequent increases in spirits duty and is the latest year for which a comprehensive and internally consistent economic dataset is available. The scenarios assess whether the government's revenue objectives could be met through a broader and more coherent structure of alcohol taxation, rather than through further increases in spirits duty alone:

(a) **Scenario 1:** beer duty is increased to approximately half of the 2023 level of sparkling wine (**around 28% of the spirits duty rate**), and a still wine duty is introduced at approximately one quarter of the 2023 sparkling wine duty level (**around 16% of the spirits duty rate**).[2]

(b) **Scenario 2:** beer and still wine duties are increased to the 2023 level of sparkling wine (**around 60% of the spirits duty rate**).[3]

(c) **Scenario 3:** beer, still wine and sparkling wine duties are increased to the 2023 level of spirits (**i.e. 100% of the spirits duty rate**).[4]

---

1 A serving in this comparison assumes 0.5l for beer, 0.2l for wine and 0.05l for spirits which, considering the average 5%, 12% and 40% ABV for beer, wine and spirits, translates into 25ml, 24ml and 20ml of pure alcohol, respectively.

Standard drink (or the alcohol unit) is considered to be 12ml of ethanol. Under this definition, a serving of beer, wine, and spirits is equivalent to approximately 2.1, 2.0, and 1.7 standard drinks, respectively

2 Comparison is for the excise duty imposed per volume of ethanol, considering the average alcohol content of spirits (40%), wine (12%) and beer (5%).

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6 Table 1 summarises the modelling results. All three scenarios increase excise revenues, but to very different degrees: by around **CZK 1.8 billion** under Scenario 1, **CZK 10.6 billion** under Scenario 2, and **CZK 19.7 billion** under Scenario 3. These gains are partly offset by reductions in other tax revenues, but the net fiscal effect remains positive across all scenarios, amounting to around **CZK 1.9 billion**, **CZK 11.6 billion** and **CZK 21.8 billion** respectively.

Table 1 Summary of impacts against key indicators

		Delta relative to Baseline results		
	Baseline	**Scenario 1**	**Scenario 2**	**Scenario 3**
Tax receipts (mCZK)	28,189	+1,876 (+6.7%)	+11,645 (+41.3%)	+21,774 (+77.2%)
o/w excise tax	15,503	+1,765 (+11.4%)	+10,640 (+68.6%)	+19,666 (+126.8%)
o/w VAT from additional excise duty[5]	n/a	+193	+1,625	+3,231
o/w other tax	12,686	-81 (-0.6%)	-621 (-4.9%)	-1,124 (-9.3%)
GVA (mCZK)	40,543	-260 (-0.6%)	-1,984 (-4.9%)	-3,591 (-9.3%)
Employment (FTE)	30,002	-192 (-0.6%)	-1,468 (-4.9%)	-2,657 (-9.3%)

Source: Frontier Economics.

Note: Other taxes include changes to VAT, product taxes and corporate tax. All tax effects reflect direct, indirect and induced channels. GVA effects and employment effects are reported for upstream activities only.

7 At the same time, the modelled effects on **upstream** GVA and employment are negative in all scenarios. Upstream GVA falls by around **CZK 260 million** under Scenario 1, **CZK 2.0 billion** under Scenario 2, and **CZK 3.6 billion** under Scenario 3, with employment effects following a similar pattern. These estimates should be interpreted as upper-bound effects. They reflect reduced domestic consumption following changes in relative prices, but some lost domestic sales may be redirected to export markets, and producers may also shift resources towards zero-alcohol alternatives such as alcohol-free beer. This pattern is already visible in the Czech

[5] VAT collected from the sale of domestically produced alcoholic beverages is considered in the row below. This row considers only the additional VAT which is collected on the increase in excise duty with respect to the excise duty applied in Baseline. It should be noted that while higher excise duties increase the VAT collected on alcohol sales, they may also reduce spending on other goods and services due to demand substitution. The net effect of the additional VAT collected on the increase in excise duty on the overall VAT revenues is therefore uncertain.

beer market, where declining consumption of alcoholic beer has been accompanied by broadly stable overall production.

8 An **illustrative sensitivity analysis** incorporating cross-price elasticities between alcoholic beverage segments was also considered. Although these estimates remain uncertain, they suggest that where consumers switch towards other categories such as spirits, the estimated negative effects on upstream GVA and employment are reduced, while excise revenues increase. **The central case** may therefore **overstate downside effects** on upstream production and understate potential tax revenues.

9 Overall, the results suggest that a **more balanced system of alcohol taxation** in the Czech Republic could generate **materially higher tax revenues** while reducing current disparities in treatment across alcoholic beverages. Scenario 3 is most closely aligned with a more harmonised approach to alcohol taxation and generates the largest fiscal gains. Scenario 1 represents a more limited first-step reform that moves the system towards a more coherent structure while offsetting the revenue shortfall observed since 2023.

10 A broader assessment of welfare effects would also need to consider impacts beyond fiscal and macroeconomic indicators, particularly health outcomes associated with higher and less fragmented alcohol taxation. International evidence, as well as recent work of the Czech think tank *Ministr zdraví*, suggests that reducing disparities in alcohol taxation could generate substantial health benefits and public spending savings. Taken together, this suggests that **the benefits of reform** are likely to **extend beyond the fiscal and upstream macroeconomic effects** captured directly in the modelling.

1 Introduction

1.1 Context and objectives

11 In 2023, as part of its Fiscal Consolidation Package, the Czech government announced further increases in excise tax rates on spirits. Consequently, the excise tax on spirits was increased by 10% in 2024 and 2025, and by a further 5% in 2026. These increases, which failed to meet the government's tax revenue target,[6] widened the disparity in excise tax rates across alcoholic beverage segments.[7]

12 UVDL has retained Frontier Economics to measure the footprint and economic contribution of the alcoholic beverages sector to the Czech economy.[8] Frontier Economics has been further asked to quantify the effects of alternative, more balanced, excise tax rates of spirits, beer, still wine and sparkling wine on the Czech economy.

1.2 Structure of the report

13 The rest of this report is structured as follows:

(a) Section 2 describes the key trends observable in the Czech alcoholic beverages market and quantifies the 2023 economic contribution of the individual segments;[9]

(b) Section 3 outlines the current Czech excise duty tax system;

(c) Section 4 sets out the alternative excise tax scenarios and assesses their impact on the Czech economy; and

(d) Section 5 considers the policy implications of the modelled alternative excise duty tax scenarios.

6 The expected additional revenue of CZK 0.4billion in 2024 and CZK 0.9 billion in 2025 was not delivered. The total level of excise duty on alcohol collected fell by over CZK 0.03 billion in 2024 and by a further CZK 1.6 billion in 2025. See Section 3.3 for more detail.

7 On a CZK-per-litre of pure ethanol basis.

8 Economic contribution is measured in terms of direct, indirect and induced GVA, employment and tax revenue.

9 Economic contribution as of 2023, before the further excise tax increases in the spirits segment.

2 Measuring the footprint of the alcoholic beverages industry

2.1 Recent trends in the Czech Republic's alcoholic beverages market

14 This section provides an overview of recent trends in the Czech alcoholic beverages market, including developments in consumption patterns, the split of consumption between on-trade and off-trade channels, as well as trends in domestic production and imports. Together, these elements describe how the market for beer, wine and spirits has evolved in recent years.

2.1.1 Alcoholic beverages consumption in the Czech Republic is decreasing

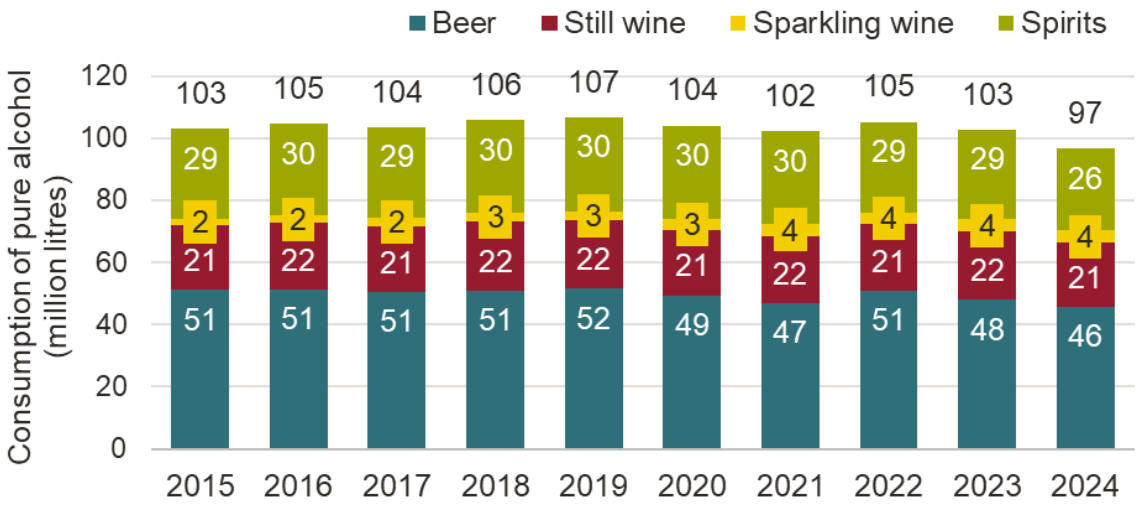
15 Overall, the Czech alcoholic beverages market is characterised by a gradual decline in consumption across multiple segments, while overall consumption patterns remain broadly stable. Despite this downward trend, per-capita consumption remains relatively high by international standards, indicating that while demand is gradually softening, the Czech Republic remains a mature market with comparably strong alcohol consumption.

16 The total ethanol consumption in the Czech Republic has been declining in recent years (see Figure 2 below), with total ethanol consumption decreasing by more than 7% between 2020 and 2024.[10] During this period, the general downward trend in alcohol consumption is particularly evident in the spirits segment (12% decrease in annual consumption between 2020 and 2024), followed by beer (8% decline between 2020 and 2024). Wine consumption (still and sparkling combined)[11] has remained relatively stable, increasing by a moderate 0.2% between 2020 and 2024.

10 Based on annual CZSO data on alcohol per-capita consumption in the Czech Republic, and CZSO data on annual population levels in the Czech Republic.

11 'Grape wine' and 'other wine' comprise the total wine category.

Figure 2 Annual alcohol consumption in volume of pure ethanol in the Czech Republic, 2015-2024

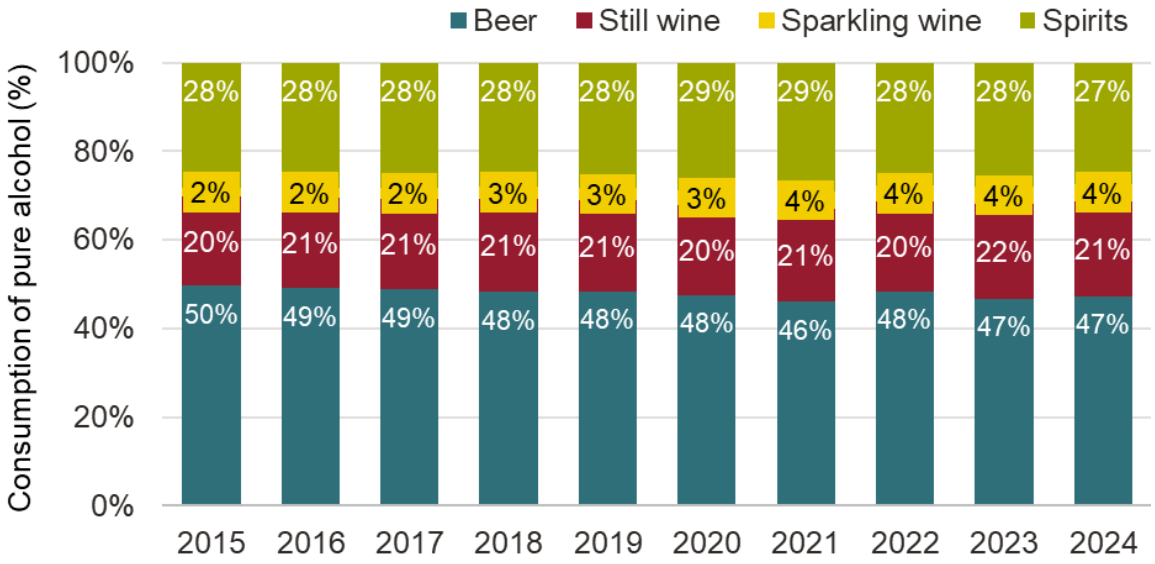


Source: Frontier Economics based on CZSO

Note: CZSO only reports wine consumption volumes on an aggregate basis – for this graph, the wine volume was split into still and sparkling volumes based on IWSR consumption shares data. For more information, see Annex A

17 Consumption patterns, however, have remained broadly stable. As shown in Figure 3, the distribution of alcohol consumption across segments has not changed significantly, with beer accounting for around half of pure alcohol consumption, spirits just under 30%, and wine (still and sparkling combined) approximately 25%.

Figure 3 Annual consumption of pure ethanol in the Czech Republic, by segment, 2015-2024



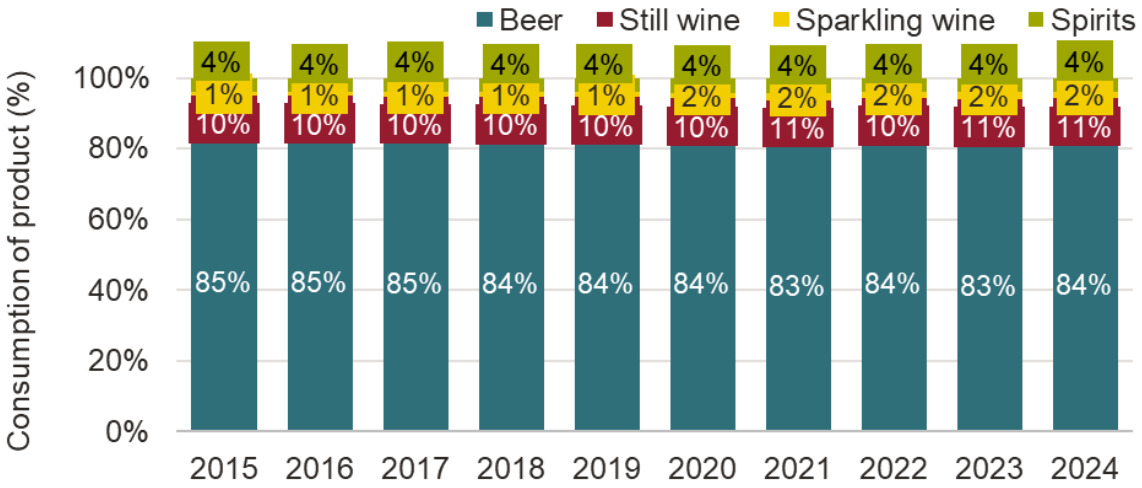
Source: Frontier Economics based on CZSO, IWSR

Note: CZSO only reports wine consumption volumes on an aggregate basis – for this graph, the wine volume was split into still and sparkling volumes based on IWSR consumption shares data. For more information, see Annex A.

18 When measured by total beverage volume, the distribution of consumption across segments remains skewed and broadly stable over time. As shown in Figure 4 below, beer accounts for around 84% of total final product consumption, followed by still and sparkling wine (13%) and spirits (4%).[12] The relative consumption shares reflect the larger serving size (and lower strength) of beer relative to other segments.

[12] It is worth noting that the total alcohol consumption has declined in the recent years also when considering consumption in terms of volume of final product, decreasing by 5% between 2020-2024 (-5% for beer, -12% for spirits and +0.3% for wine (still and sparkling combined))

Figure 4 Annual consumption of final product in the Czech Republic, by segment, 2015-2024



Source: Frontier Economics based on CZSO, IWSR

Note: CZSO only reports wine consumption volumes on an aggregate basis – for this graph, the wine volume was split into still and sparkling volumes based on IWSR consumption shares data. For more information, see Annex A

19 On a per-capita basis, Czech alcohol consumption is declining comparably faster.[13] In 2024, an average Czech consumer consumed 156 litres of alcoholic beverages (down 6.4% from 2020 levels), or 8.9 litres of pure ethanol (down 8.9% from 2020 levels).[14] This is equivalent to consuming over 9 drinks per week.[15] Nevertheless, Czech alcohol consumption remains relatively high by international standards. According to WHO data, in 2022, the per capita alcohol consumption among those aged 15+ in the Czech Republic was 2.7x higher than the global average, and was exceeded by only four countries.[16]

2.1.2 Czech alcoholic beverages consumption is shifting from on-trade to off-trade

20 The alcoholic beverages consumption occurs across two main channels: on-trade (consumed on licensed premises, such as bars and restaurants) and off-trade

13 The total alcohol consumption is falling more slowly as it is offset by a modest population growth (around 2% increase between 2020-2024).

14 Based on annual CZSO data on alcohol per-capita consumption in the Czech Republic in pure alcohol and in final product.

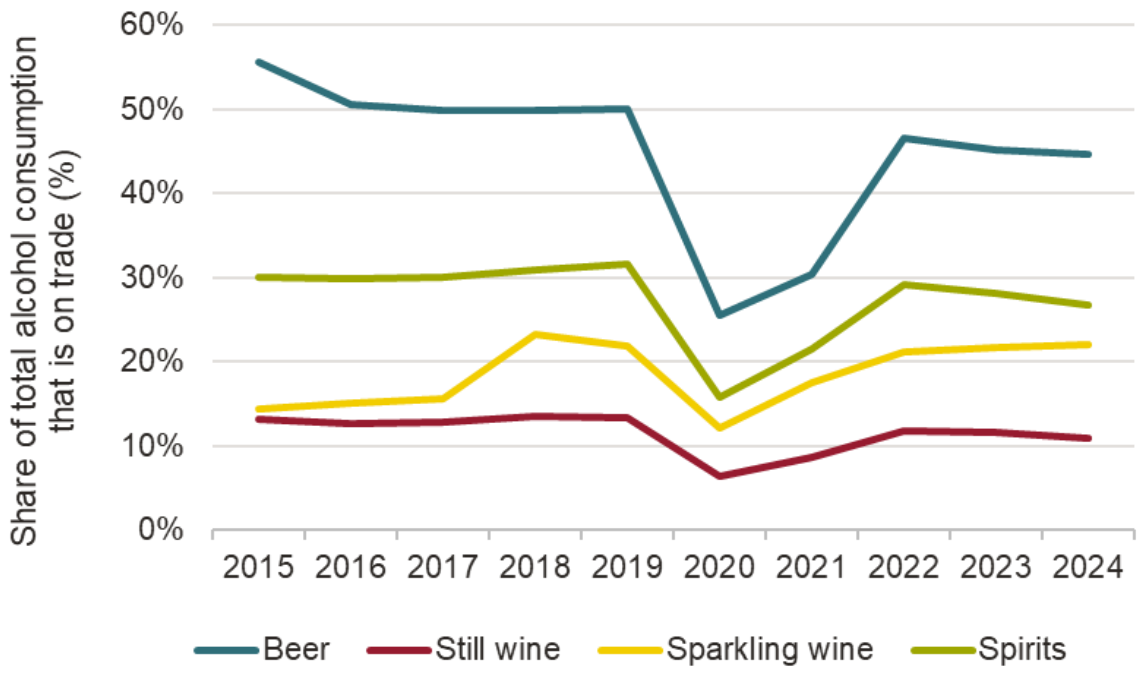
15 Of the 156 litres of alcoholic beverages consumed by an average Czech consumer in 2024, 131 litres were consumed via beer, 19 litres were consumed via wine and 6 litres were consumed via spirits. Standard drink is assumed to be 0.5l of beer, 0.2l of wine and 0.05l of spirits.

16 Czech consumption: 13.7l of pure ethanol, compared to global 5l of pure ethanol - based on the latest, 2022, annual consumption of pure alcohol data from WHO – see https://data.who.int/indicators/i/EF38E6A/EE6F72A?utm_ [Accessed 22/4/2026]

(purchased for consumption at home). Over the past ten years, there has been a gradual shift in Czech alcoholic beverages consumption from on-trade to off-trade.

21 As shown in Figure 5, containment measures during the COVID-19 pandemic led to a sharp decline in on-trade consumption across all alcoholic beverage segments. Although on-trade consumption has subsequently recovered to levels observed prior to the pandemic, it remained below historic levels and has continued to decline across most beverage segments.[17] This pattern indicates a lasting change in consumer behaviour and is consistent with a continued increase in the relative importance of off-trade consumption.

Figure 5 Share of on-trade consumption of final product, by segment, 2015-2024



Source: Frontier Economics based on IWSR
Note: For more information on the data, see Annex A

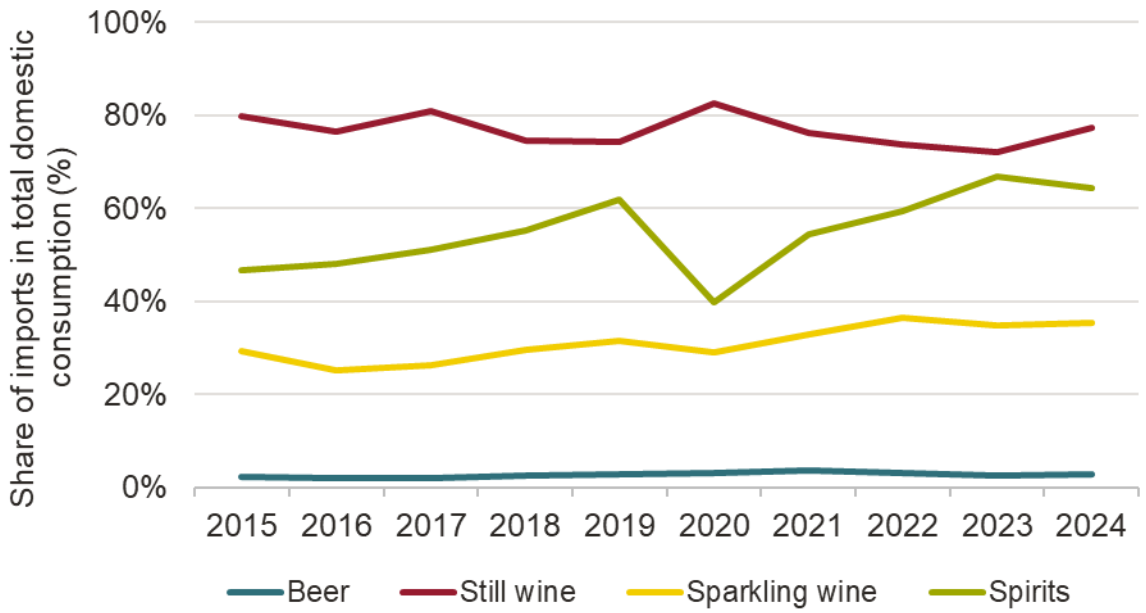
2.1.3 Alcoholic beverages consumption patterns vary with import intensity

22 The Czech alcoholic beverages market exhibits a clear split between trade-intensive and domestically supplied categories. A significant share of alcoholic beverages consumed in the Czech Republic is imported, particularly in categories where origin, provenance and product variety are important determinants of consumer demand. This is most evident in still wine, which has remained the most

[17] The decline in on-trade consumption share is observable across all segments, with the exception of sparkling wine, which increased by 1pp between 2022 and 2024.

import-supported segment over the past 10 years (see Figure 6 below), followed by spirits and sparkling wine. [18] In contrast, beer consumption continues to be supplied predominantly by domestic production, reflecting the high-volume and relatively low value-density nature of the category.

Figure 6 Import share of final product consumption, by segment, 2015-2024



Source: Frontier Economics based on CZSO data

Note: Based on annual CZSO data on alcohol per-capita consumption in the Czech Republic, CZSO data on annual population levels in the Czech Republic, and annual CZSO import data. Note that CZSO only reports wine consumption volumes on an aggregate basis – for this graph, the wine volume was split into still and sparkling volumes based on IWSR still and sparkling wine consumption shares data. See Annex A for more detail.

23 Overall, the differences in import intensity are consistent with the production economics and consumer demand across beverage categories (see Highlight 1 for further detail). The imported products are a core part of the Czech alcoholic beverages value chain and generate economic value through distribution, retail and hospitality services in the downstream segment (see Section 2.2.4).

[18] It is worth noting that, based on information from UVDL, the particularly high share of imports in the spirits segment, observable in 2023, is attributable to the relatively high pre-stocking strategy which was observed prior to the 2024-2026 excise tax duty increases in the spirits segment (which were announced in 2023).

Highlight 1: Trade across alcoholic beverage segments

Beer production in most countries is largely local, as its viability depends on scale and proximity to the market, with relatively low product differentiation. Due to its lower alcohol content, beer is more costly to transport per unit of alcohol, with evidence suggesting that distributing one litre of ethanol in beer is around 8 times more costly than in spirits and 3 times more costly than in wine.[19] As a result, even large international brewers typically operate through local production. In the Czech market, the top three brewers are international and account for three-quarters of the total domestic production volume.[20]

Wine and spirits, conversely, have higher trade intensity due to greater product differentiation in these segments. In particular, differentiation is often formalised through geographical indications, which highlight unique product characteristics linked to specific regions and/or traditional production methods.[21] This supports a more fragmented production structure[22] and drives international trade in products with a unique geographical origin, such as Scotch whisky, French champagne, and cognac.

2.1.4 Alcoholic beverages production in the Czech Republic is dominated by beer, with spirits representing the second largest segment

24 The alcoholic beverages manufacturing sector in the Czech Republic is characterised by a strong concentration in beer production. In 2023, beer accounted for approximately 76% of production volume and around 80% of production value, as shown in Figure 7. Spirits represented a smaller, but still significant, share of domestic production, accounting for around 17% of total output in terms of pure alcohol. Wine - including both still and sparkling - made up the remaining share, at around 7% of both production volume and value.

19 Brewers of Europe, 2017, "The Brewers of Europe Cost comparability study" , p. 14, Link

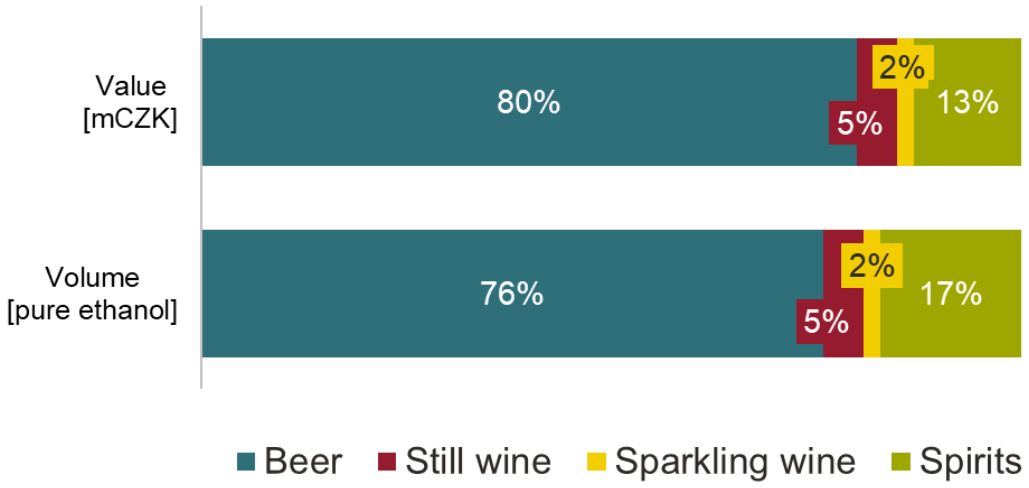
20 Asahi, Molson Coors and Heineken – see IWSR, "Czech Republic Report 2025"

21 EC, "Geographical indications and quality schemes explained", Link

22 For example, in the Czech market, there is a long tail of small still wine producers (i.e. 92% of the producers are small enterprises who together produce 9% of the total still wine volume released for consumption).

Note: data is based on quantity released for consumption, which also includes imported volumes – based on data shared by UVDL, from the Czech Ministry of Finance.

Figure 7 Volume and value of alcohol production in the Czech Republic, by segment, 2023



Source: Frontier Economics, based on CZSO.

Note: Value is presented in basic prices and considered the volume of beer, still wine, sparkling wine and spirits. Other, smaller segments, such as cider, are not included due to their small size and lack of data consistency across data sources. Please Annex A for more detail.

25 It is worth noting that these figures reflect only domestically produced volumes and therefore do not capture the role of imports, which are more prominent in certain segments. As a result, the production structure presented here must be interpreted alongside consumption and trade patterns to provide a more complete view of the overall market.

2.2 Economic contribution of the Czech alcoholic beverages sector in 2023

2.2.1 Description of alcoholic beverages value chain

26 The alcoholic beverages sector's value chain involves several interconnected stages, namely:

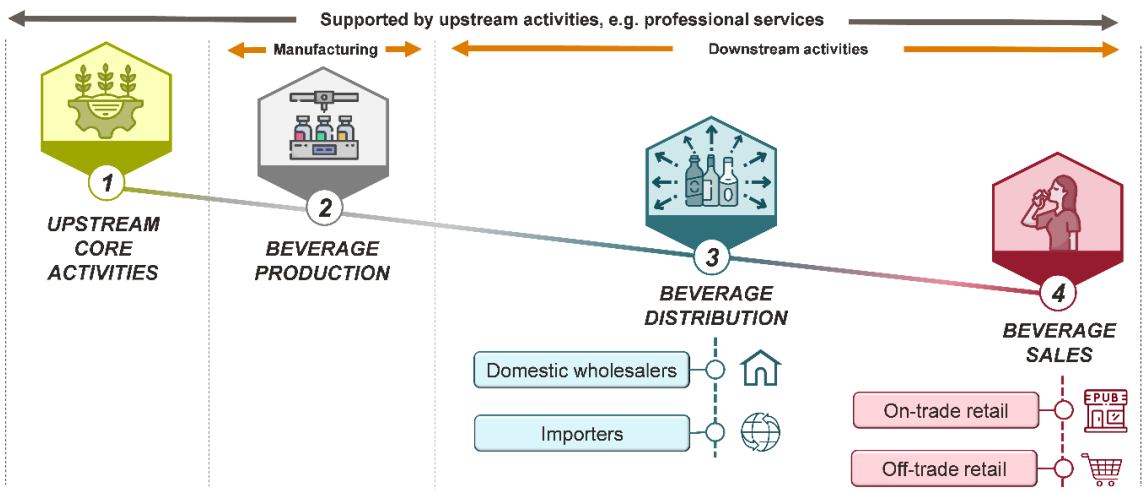
- **Upstream core activities**, which include the production of inputs such as agricultural products,[23] or equipment.
- **Beverage production**, i.e. the creation of alcoholic beverages using brewing, distilling and winemaking processes.

[23] For example fruit for fruit spirits, grapes for wine production, grains and hops for beer production.

- **Beverage distribution**, which entails logistics, storage and market access of the alcoholic beverages by wholesalers and, in case of imported products, importers.
- **Beverage sales**, via off-trade retailers such as supermarkets, and on-trade venues, including bars, cafés and restaurants.

27 These core stages, illustrated in Figure 8 below, are supported by a range of ancillary activities.

Figure 8 Alcoholic beverages sector's value chain



Source: Frontier Economics

28 Estimating the alcoholic beverages sector's economic contribution requires a full assessment of the supply chain, as value is added at every stage. Throughout this report, 'total contribution' refers to the combined upstream production contribution, linked to domestically produced volumes,[24] and downstream contribution linked to domestic sales, including imported products.[25]

29 Note that when referring to the 2023 contribution, only alcoholic beverages (beer, still wine, sparkling wine and spirits) are considered. The contribution of non-alcoholic beer is not included in this section, which drives the difference between the results of this section and the Baseline results reported in Section 4.

24 This includes the total domestically produced volume, including both domestic sales and export volumes.

25 Note that when quantifying the downstream economic contribution of alcoholic beverage segments to the Czech economy, the contribution via the importers' channel was not considered due to a lack of relevant data availability. As a result, the downstream economic contribution is expected to be underestimated, particularly for those segments where the share of imports is relatively higher.

2.2.2 Methodology to measure the economic contribution of the alcoholic beverages sector

30 In line with the standard practice, the quantification of the economic contribution of alcoholic beverages production in the upstream manufacturing sector and distribution via the relevant downstream sectors relies on the input-output ("IO") model. The IO framework captures how activity in one part of the economy affects others through supply chains and consumption of goods and services.[26]

31 These effects are typically measured in terms of key economic indicators, which include:

- **Gross value added ("GVA")**: measure of the net contribution of a given industry to the economy, measured as the difference between the value of goods and services produced and the value of intermediate products used in production;[27]
- **Employment**: the number of jobs (or workers) supported by the activities within a given industry; and
- **Tax revenues**: government income generated from the economic activity of a given industry, including taxes such as VAT, corporate taxes, excise duty[28] and other production-related taxes.

32 Considering the additional GVA, employment and tax revenue generated within a given industry provides a comprehensive view of that respective industry's overall contribution to the wider economy. Within the IO model, this is typically measured by distinguishing between three different types of contribution, namely:

- **Direct contribution**: economic contribution generated directly within the considered industry (for example, GVA generated and jobs supported directly at a spirits distillery facility);
- **Indirect contribution**: economic contribution generated within the supplier industries (for example, GVA generated and jobs supported through the cultivation of agricultural products used as inputs for spirits production); and
- **Induced contribution**: economic contribution generated via the additional consumption of goods and services, driven by the wages earned across the

26 In simplified terms, for a given year, the IO table quantifies the value of output produced by each industry within the economy and the quantity and origin of inputs (i.e. how much input from each individual industry) was used by within each industry's production process.

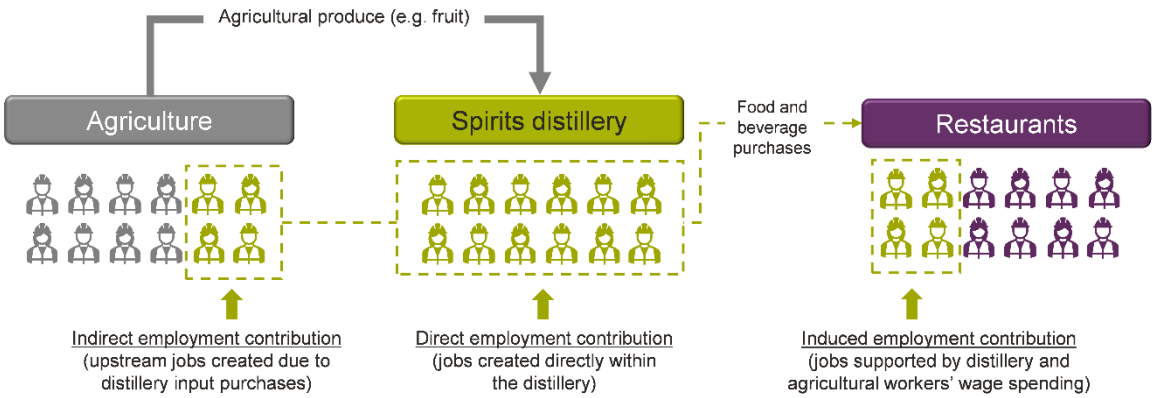
27 GVA consequently captures how much additional value is created within a particular industry through the process of combining intermediate inputs to produce output.

28 Note that in the 2023 economic contribution quantification, excise duty contribution was sourced directly from the Czech Customs Office. In the main modelling (Section 4), the excise duty contribution was modelled for the 2023 Baseline scenario for consistency in approach between the Baseline and the alternative modelled scenarios.

considered industry's value chain (for example, GVA created and jobs supported through distillery and supplier employees' wage spending in local shops or restaurants).[29]

33 The direct, indirect and induced effects are illustrated on a simplified example in Figure 9 below, which outlines the employment contribution of a spirits distillery.

Figure 9 Employment contribution of spirits manufacturing, simplified illustrative example



Source: Frontier Economics

Note: This is a simplified example, intended for illustrative purposes only. In the complex market reality, inputs are sourced from numerous domestic upstream industries (which increases the indirect employment contribution). Moreover, employees employed due to the directly and indirectly created jobs spend their wages across a wide portfolio of activities, supporting a range of sectors within the wider economy.

34 The analysis of the alcoholic beverages' contribution to the Czech economy, described in further detail in the remainder of this section, is based on 2023 data. Year 2023 represents the period before the most recent excise duty changes (see Section 3) and is consequently considered as the starting point for the modelling of the alternative excise tax regimes (described in further detail in Section 4 below).

35 The results of the 2023 alcoholic beverages' economic contribution show that although beer continues to dominate the market in terms of production and consumption—accounting for around 80% of domestic production and approximately 84% of final product consumption (see Section 2.1) – its share of overall economic contribution is comparatively lower. In 2023, beer generated around 65% of total GVA, 63% of employment, and 49% of tax revenues

[29] This report adopts the standard multiplier analysis including indirect and induced contributions, derived from input-output analysis. It is worth noting that induced effects in particular are subject to notable uncertainty: if the alcoholic beverages sector were to shrink significantly, for example, many people would find alternative employment in other sectors and so the loss of economic activity overall would likely be smaller than implied by the inclusion of induced effects in measuring economic contribution. The analyses described in this report consequently clearly distinguish between these three effects.

attributable to the Czech alcoholic beverages sector. By contrast, spirits, despite representing a relatively small share of production (around 15%) and less than 4% of final alcoholic beverages consumption by volume of final product, accounted for a disproportionately larger share of economic contribution, generating approximately 23% of GVA, 25% of employment, and, due to relatively high excise duty rate, 38% of total tax revenues. Wine segments contributed more modestly, with still wine and sparkling wine contributing less than 10% and around 3% across all categories, respectively.

36 Similar patterns are also observed when focusing on direct effects only. The relative distribution of economic contribution across segments remains broadly similar, with spirits accounting for a slightly larger share of direct GVA, employment, and tax revenues than the total direct contribution of alcoholic beverages. This reflects the concentration of value creation within the spirits manufacturing process and distribution channels.

Table 2 Total contribution of alcoholic beverages to the Czech economy, by segment, 2023

	GVA (mCZK)	Employment (FTE)	Taxes[30] (mCZK)
Beer	59,953 (65%)	59,918 (63%)	18,771 (49%)
Still wine	8,256 (9%)	7,914 (8%)	3,430 (9%)
Sparkling wine	3,032 (3%)	3,076 (3%)	1,317 (3%)
Spirits	21,040 (23%)	23,836 (25%)	14,717 (38%)
Total	**92,280**	**94,745**	**38,235**

Source: Frontier Economics calculations - for data sources and key assumptions see Annex A

Note: This table aggregates the economic contribution across the upstream alcoholic beverages manufacturing sector and the related downstream activities, as well as across the direct, indirect and induced effects. Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments. Excise duty contribution considered in the 2023 contribution is based on the actual Czech Customs Office data.

30 Note that the taxes include also VAT collected on the value of imported products, which, although not attributable to any specific Czech economic actor, are considered a relevant contribution to the Czech economy. These amounted to around CZK 122 million for beer, CZK 2,088 million for still wine, CZK 282 million for sparkling wine and CZK 1,714 million for spirits.

Table 3 Direct contribution of alcoholic beverages to the Czech economy, by segment, 2023

	GVA (mCZK)	Employment (FTE)	Taxes[31] (mCZK)
Beer	26,715 (64%)	33,495 (61%)	14,724 (46%)
Still wine	3,764 (9%)	4,443 (8%)	2,917 (9%)
Sparkling wine	1,383 (3%)	1,797 (3%)	1,122 (3%)
Spirits	9,700 (23%)	15,042 (27%)	13,301 (41%)
Total	**41,562**	**54,777**	**32,064**

Source: Frontier Economics calculations - for data sources and key assumptions see Annex A.

Note: This table aggregates the economic contribution across the upstream alcoholic beverages manufacturing sector and the related downstream activities. Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments

37 The economic contribution estimates reported above are based on Czech-specific production and price data, as well as input-output data provided by Czech statistical authorities. Economic contribution calculations of this nature inevitably rely on various assumptions and judgements (see footnotes to tables above and also Annex A). The approach adopted is considered appropriate for the Czech context and internally consistent across the analyses. It should be noted that other studies may employ different methodologies or assumptions and reach different conclusions about the sector's contribution. [32]

38 **It is important to note that imported alcoholic beverages volumes are not included in the upstream manufacturing contribution by construction, though they are included in the downstream contribution insofar as they support wholesale, off-trade retail and hospitality activity in the Czech Republic.[33] This is particularly relevant for trade-intensive segments such as**

31 Note that the taxes include also VAT collected on the value of imported products, which, although not attributable to any specific Czech economic actor, are considered a relevant contribution to the Czech economy.

32 See for example Angleitner et al, 2021, "The economic and ecological footprint of the spirits sector in the EU, the UK, Norway and Switzerland"

33 Additionally, the VAT collected on the value of imported products is considered within the downstream tax contribution.

spirits and wine. The relative split of the total economic contribution between the upstream alcoholic beverages manufacturing sector and the related downstream activities consequently varies across segments. While the upstream contribution reflects only domestically produced alcoholic beverages, the downstream contribution is driven by the total volume of alcoholic beverages—both domestic and imported—that passes through wholesale and retail channels. As a result, alcoholic beverage segments, where internationally sourced products account for a material share of domestic sales, such as spirits and still wine, exhibit a relatively larger downstream contribution compared to domestically supplied segments, such as beer. This is illustrated in Table 4. While the GVA generated in downstream sectors for beer is broadly comparable to its upstream manufacturing contribution, the downstream GVA attributable to spirits is approximately three times higher than that generated through domestic spirits production. A similar pattern is observed for employment, where the relative importance of downstream activities is more pronounced for spirits and wine (see Table 5).[34]

[34] Note that imported products are not counted within the upstream economic contribution, because they are produced outside the Czech Republic. They are, however, partly captured in the downstream economic contribution, as they pass through the Czech wholesale, off-trade retail and hospitality channels. For example, an imported bottle of Scotch sold in a Czech supermarket, bar or restaurant contributes to Czech downstream activity through domestic wholesale, retail or on-trade mark-ups, employment and related taxes. It is worth noting that, due to data unavailability, the analysis described in this report does not separately capture the Czech importer's own activities, such as import handling, warehousing, logistics, distribution, local brand support and sales operations. As a result, the estimates are likely to understate the full Czech economic contribution of alcohol segments, especially of those segments where internationally sourced products form an important part of domestic sales, such as spirits and still wine.

Table 4 Alcoholic beverages' GVA contribution, by segment, 2023

	mCZK		%	
	Upstream	Downstream	Upstream	Downstream
Beer	30,602	29,350	51%	49%
Still wine	1,878	6,378	23%	77%
Sparkling wine	798	2,234	26%	74%
Spirits	5,015	16,024	24%	76%

Source: Frontier Economics calculations - for data sources and key assumptions see Annex A.

Note: This table aggregates the economic contribution across the direct, indirect and induced effects. Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments

Table 5 Alcoholic beverages' employment contribution, by segment, 2023

	mCZK		%	
	Upstream	Downstream	Upstream	Downstream
Beer	22,646	37,273	38%	62%
Still wine	1,390	6,524	18%	82%
Sparkling wine	591	2,486	19%	81%
Spirits	3,711	20,125	16%	84%

Source: Frontier Economics calculations - for data sources and key assumptions see Annex A.

Note: This table aggregates the economic contribution across the direct, indirect and induced effects. Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments.

39 This distinction between segments becomes even more evident when considering tax contribution. Due to differences in excise duty structures across segments (see Section 3), the other tax revenues,[35] attributable to spirits, collected downstream and upstream, is comparatively smaller, with a larger proportion of tax collected through excise duties.[36]

Table 6 Alcoholic beverages' tax contribution, by segment, 2023

	mCZK	Other taxes (mCZK)	
	Excise duty	Upstream	Downstream[37]
Beer	4,502 (24%)	9,576 (51%)	4,694 (25%)
Still wine	- (0%)	588 (17%)	2,842 (83%)
Sparkling wine	490 (37%)	250 (19%)	577 (44%)
Spirits	8,972 (61%)	1,569 (11%)	4,176 (28%)

Source: Frontier Economics calculations - for data sources and key assumptions see Annex A

Note: This table aggregates the economic contribution across the direct, indirect and induced effects. Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the alcoholic beverages sector are assumed to apply for each of the segments.

2.2.3 The impact of alcoholic beverages manufacturing on the Czech economy

40 The alcoholic beverages sector in the Czech Republic is anchored by a well-established brewing industry, complemented by domestic wine production and a diverse spirits segment.

41 Beyond its direct contribution, alcoholic beverages production also supports a wide range of upstream activities through its supply chains. The manufacturing of spirits and other alcoholic beverages relies on inputs such as agricultural products, packaging materials, energy, transport, and business services, generating indirect economic effects across these sectors. In addition, wages earned within the direct

35 Other taxes include VAT, corporate taxes and other production taxes.

36 Note that the excise duty is paid on the volume of alcohol consumed locally.

37 Note that the taxes include also VAT collected on the value of imported products, which, although not attributable to any specific downstream Czech economic actor, are considered a relevant contribution to the Czech economy.

and indirect value chain support further consumption in the wider economy, giving rise to induced effects. Together, these channels contribute to broader multiplier impacts in terms of value added, employment, and tax revenues.

42 Taking into account the direct, indirect and induced effects, the alcoholic beverages manufacturing sector is estimated to have contributed a total of around CZK 38.3 billion GVA and CZK 25.9 billion taxes[38] to the Czech economy in 2023 (see Table 7 below). Additionally, it supported around 28,300 full-time jobs over the same period. For a graphical split of the total economic contribution across individual segments and direct, indirect and induced effects, see Annex B.

Table 7 Contribution of alcoholic beverages manufacturing to the Czech economy, 2023

	GVA (mCZK)	Employment (FTE)	Taxes[39] (mCZK)
Beer	30,602	22,646	14,077
Still wine	1,878	1,390	588
Sparkling wine	798	591	740
Spirits	5,015	3,711	10,541
Total	**38,293**	**28,337**	**25,946**

Source: Frontier Economics calculations - for data sources and key assumptions see Annex A

Note: This table aggregates the economic contribution across the direct, indirect and induced effects. The latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the alcoholic beverages sector are assumed to apply for each of the segments.

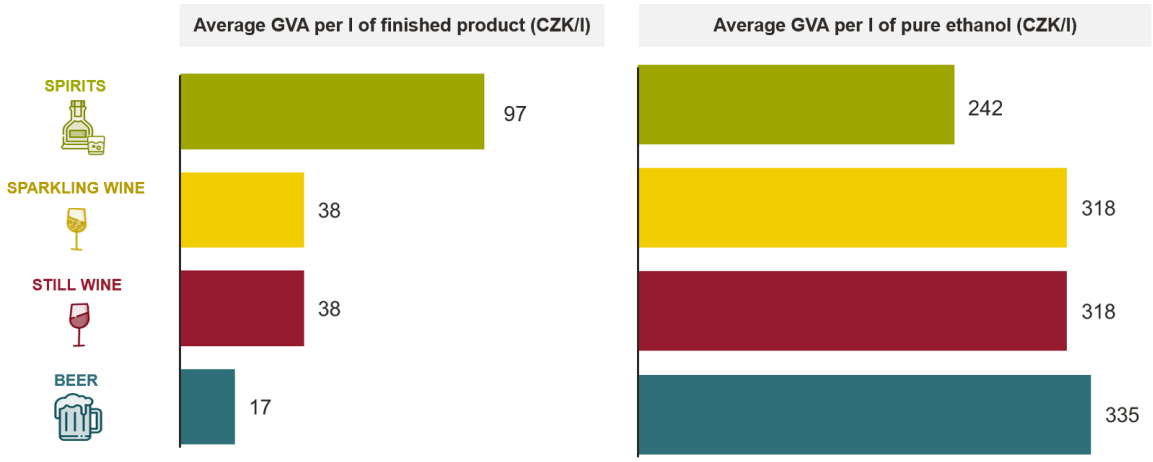
43 Although the spirits sector is smaller in terms of overall consumption and production, it generates a disproportionately high economic contribution per unit of output (see Figure 10). One litre of locally produced spirits (at around 40% strength) creates more than five times the value added of beer and nearly three

38 Excise duty, VAT, corporate taxes and net product taxes.

39 Note that in addition to the VAT, corporate taxes and other production taxes, excise duty is also considered in this section. While excise duty is paid on the total volume of domestic alcohol (domestically produced as well as imported) and excludes the domestically produced alcohol that is exported abroad, based on information received from the Czech Statistical Office, excise duty was considered in the production taxes of the 'Manufacture of beverages' sector. Consequently, for consistency, excise duty revenues, as reported by the Czech Customs Office were considered in the upstream sector. Note that the excise duty was subtracted from the IO table's production taxes of the 'Manufacture of beverages' sector to avoid double-counting.

times that of wine, reflecting the high value intensity of spirits manufacturing. The differences across segments are more moderate when adjusting for pure alcohol content. Spirits generate around CZK 242 per litre of pure alcohol, around 28% and 24% less than beer and wine, respectively. In other words, while spirits are value-dense in finished product terms, their contribution per unit of alcohol is broadly comparable, though somewhat lower, than in other segments. It is worth noting that this contribution accounts for additional value created in the upstream production only. As such, these results do not capture the role of imports, which are more prominent in certain segments.

Figure 10 Average upstream GVA per unit of domestically produced output, by segment, 2023



Source: Frontier Economics based on CZSO

*Note: Note that **the alcohol volumes considered in this graph relate to domestic production only**. No imported volumes were considered in this analysis (since the manufacturing of imported volumes does not contribute to the domestic economy).*

2.2.4 The impact of related downstream activities on the Czech economy

44 Alcoholic beverages' consumption in the Czech Republic is supported by a well-developed downstream network, including wholesale distribution, off-trade retail (such as supermarkets and specialised stores), and on-trade channels (such as bars, restaurants, and hospitality venues).

45 Beyond their direct contribution, these downstream activities support a wide range of economic activity across the broader economy. Wholesale and retail sectors rely on services such as logistics, storage, transport, and business support services, generating indirect effects across these industries. In addition, wages earned in

distribution and retail channels contribute to additional household spending, generating induced effects. Together, these channels contribute to broader multiplier effects on value added, employment, and tax revenues.

46 For the purposes of the analysis considered in this section, only the share of downstream activity attributable to alcoholic beverages has been considered, rather than the total output of wholesale and retail sectors. This contribution is estimated based on revenues generated from alcoholic beverages' sales, calculated as the product of volumes and applicable mark-ups. This approach ensures that the economic contribution reflects only the activity directly linked to alcoholic beverages' distribution and retail (for more details on the considered mark-ups, see Annex A).

47 When accounting for direct, indirect and induced effects, alcoholic beverage-related downstream activities are estimated to have generated approximately CZK 54.0 billion in GVA and CZK 10.3 billion in tax revenues[40] in the Czech economy in 2023 (see Table 8 below). Over the same period, these activities supported around 66,400 full-time equivalent jobs. A detailed breakdown of the total economic contribution by segment and by type of effect is provided in Annex B.

Table 8 Economic contribution of alcoholic beverage-related downstream activities to the Czech economy, 2023

	GVA (mCZK)	Employment (FTE)	Taxes[41] (mCZK)
Beer	29,350	37,273	4,694
Still wine	6,378	6,524	2,842
Sparkling wine	2,234	2,486	577
Spirits	16,024	20,125	4,176
Total	**53,986**	**66,408**	**10,258**

Source: Frontier Economics calculations - for data sources and key assumptions see Annex A

Note: This table aggregates the economic contribution across the direct, indirect and induced effects. Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments.

40 Excise duty, VAT, corporate taxes and net product taxes.

41 Taxes considered in this section include VAT, corporate taxes and other taxes. Excise duty is already considered in the upstream alcoholic beverages manufacturing sector. Moreover, note that the taxes include also VAT collected on the value of imported products, which, although not attributable to any specific downstream Czech economic actor, are considered a relevant contribution to the Czech economy. These additional VAT contributions amounted to around CZK 122m for beer, CZK 2,088m for still wine, CZK 282m for sparkling wine and CZK 1,714m for spirits.

3 Czech excise duty tax system

3.1 Excise duty taxation in the Czech Republic is segment-specific

48 In the Czech Republic, alcoholic beverages, including spirits, beer and sparkling wine, are subject to excise duty.[42,43] The precise amount of excise duty is calculated based on the excise duty rate, set specifically for each type of alcoholic beverage, and the volume produced.

49 Excise duties for alcoholic beverages are subject to EU Directives, which affect the structure of taxes that can be levied.[44] The current Czech excise duty base and rates are as follows:

(a) **Spirits' excise tax base rate is alcohol-content-based,** set per-hectolitre of pure ethanol in the final product. In 2026, the Czech Republic's spirits tax base rate was set to 41,050 CZK/hl ethanol.

(b) **Beer excise tax base rate is alcohol-content-based,** set per-hectolitre of final product for each whole OWE[45] percent of the final product. In 2026, the Czech Republic's beer tax base rate was set to 32 CZK/hl/OWE.

(c) **Wine excise tax base rate is volumetric,** set per-hectolitre of final product. In 2026, the Czech Republic's sparkling wine tax base rate was set to 2,340 CZK/hl, while still wine continued to be exempt from the excise tax.[46]

50 In addition to these headline differences across segments, the effective tax burden is also shaped by category-specific concessions, including lower rates for small

42 Excise duty is a tax applicable to excise goods, which in the Czech Republic includes alcohol (spirits, beer, sparkling wine, intermediate products) as well as mineral oils and manufactured tobacco. Excise duty becomes chargeable either "at the time excise goods are released into free circulation or when such products are imported and excise duty is included in the so-called customs debt" – See Czech Customs Office, "Information on excise goods", Link.

43 VAT, which is currently set at 21% in the Czech Republic is subsequently levied on top of the excise duty inclusive price.

44 In accordance with the EU regulation, the excise tax rate for beer and spirits is based on the beverages' alcohol content (volume of ethanol for spirits and degrees of Plato or alcoholic strength by volume for beer). For wine the tax rate is set on a per-volume of final output base. See EC, Council Directive 92/84/EEC, Link, and Council Directive (EU) 92/83/EEC, Link.

45 Original Wort Extract ("OWE") is a measure of the alcohol content of beer. It measures how much dissolved sugar and other solids are present in the beer before fermentation– see Beer&Brewing, Link.

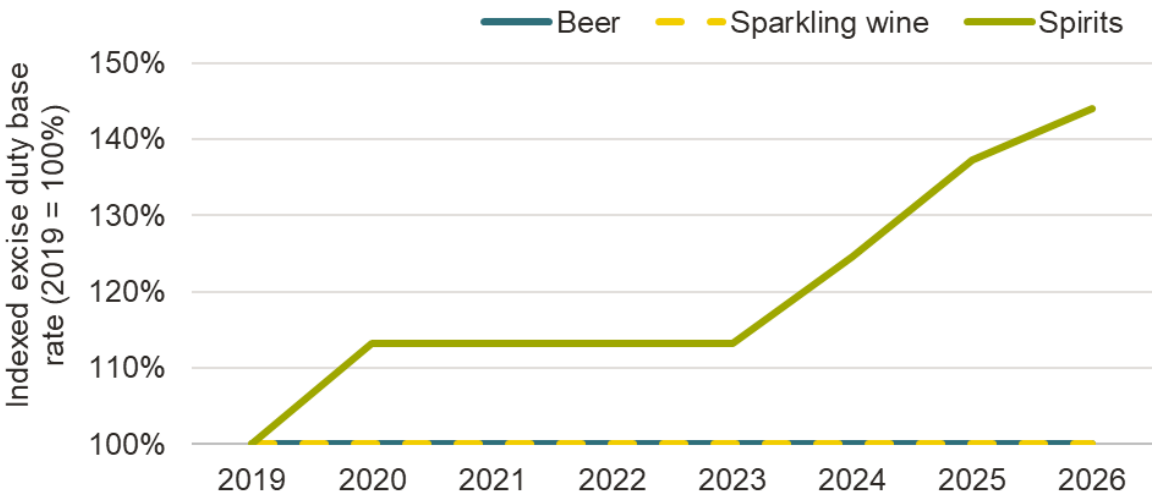
46 Wine and intermediate wine products intended as inputs into other products may also be exempt under certain conditions - see Law no. 353/2003 Sb., Link.

breweries[47] and reduced rates for certain fruit spirits.[48] These qualifications do not alter the core conclusion that the Czech system remains structurally tilted against spirits while leaving still wine untaxed.

51 The observed tax disparity has been increasing over time. While the tax rates for beer have remained unchanged in cash terms since 2010,[49] and the tax rates for sparkling and still wine have remained unchanged in cash terms since 2003,[50] the excise duty on spirits has increased considerably in recent years.

52 In 2019, an increase in the spirits' tax rate from 28,500 CZK/hl ethanol to 32,250 CZK/hl ethanol was announced (an increase of more than 13%). In 2023, further increases in spirits' tax were announced, resulting in an additional 10% increases in 2024 and 2025, and a further 5% increase in 2026. This is depicted in Figure 11 below. Cumulatively, excise duty on spirits has increased by more than 40% since 2019, while duties on other segments have not changed.

Figure 11 Annual indexed excise duty base rate by alcohol segment, 2019-2026, 2019 base rate = 100%



Source: Frontier Economics

Note: Annual indexed excise duty base rates of each segment were calculated by dividing the base rate applicable in the respective year by the base rate of 2019. Note that as still wine continued to be exempt from the excise duty over the entire considered period, this alcoholic beverage segment was not included in this analysis.

47 Lower base rates apply to, e.g. small independent breweries with a smaller volume of annual output, while beer intended as input into other products may be exempt from excise tax under certain conditions - see Law no. 353/2003 Sb., Link.

48 Lower tax rate (20,550 CZK/hl ethanol) applies to fruit spirits from distilleries producing up to 30l of ethanol per producer per production term, while spirits intended as input into other products may be exempt from excise tax under certain conditions - see Law no. 353/2003 Sb., Link.

49 See 20.10.2009 update to Legislation 353/2003 Sb., Link: https://www.zakonyprolidi.cz/cs/2009-362#cast4

50 See 24.10.2003 update to Legislation 353/2003 Sb., Link: https://www.zakonyprolidi.cz/cs/2003-353/zneni-0

3.2 Comparison of the 2023 excise duty tax rates shows the relatively heavy taxation of spirits

53 This section distinguishes between three related but different concepts: the statutory excise duty rate, the implied duty per litre of ethanol, and the share of consumer price accounted for by tax. The analysis focuses on 2023 as this is the benchmark year used throughout the report for the counterfactual modelling of alternative tax scenarios. It is also the latest year for which the full set of national accounts inputs needed for the wider economic analysis is available on a consistent basis. For these reasons, 2023 provides the appropriate reference point for assessing how unequal the Czech excise duty structure already was before the subsequent increases in spirits duty took effect. As discussed in Section 4.1, the situation in 2026 is more, not less, discriminatory towards spirits, since the additional phased increases in 2024, 2025 and 2026 further widened the tax gap relative to beer, sparkling wine and especially still wine.

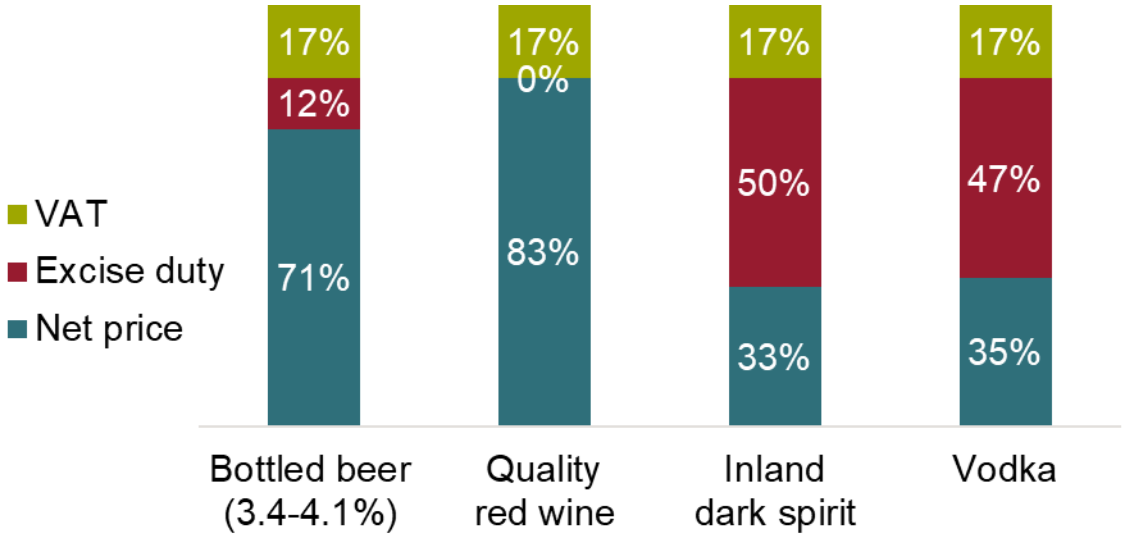
54 Ethanol in spirits was already taxed relatively heavily even before the increases since 2024. In 2023, the excise duty on ethanol in beer was around 75% lower than the rate applied to ethanol in spirits,[51] while the excise duty on ethanol in sparkling wine was around 40% lower.[52] Ethanol in still wine was not taxed at all.

55 Consequently, by 2023, a significant tax gap had already emerged between the Czech Republic's beer, wine, and spirits segments. Figure 12 illustrates this using 2023 off-trade retail price decomposition for selected products. For beer and still wine, taxes (excise duty and VAT) accounted for around 30% and 17% of the off-trade retail price, respectively. In the spirits segment, however, taxes accounted for over 65% of the off-trade retail price, with excise duty alone accounting for around 50%. This 2023 comparison is used as the analytical benchmark throughout the report; the corresponding comparison for 2026 would show an even larger tax wedge for spirits, given the additional duty increases that took effect after 2023.

51 Calculated based on comparison of 2023 spirits tax base rate of 32,250 CZK/hl ethanol; 2023 beer tax base rate of 32 CZK/hl beer/OWE; assumed ABV of 0.4% per 1 OWE and the assumed average beer ABV 5%.

52 Calculated based on comparison of 2023 spirits tax base rate of 32,250 CZK/hl ethanol; 2023 sparkling wine tax base rate of 2,340 CZK/hl, and the assumed average wine ABV 12%.

Figure 12 Off-trade retail price decomposition, 2023



Source: Frontier Economics based on 2023 CZSO consumer (off-trade) prices of selected products, 21% VAT rate and 2023 excise duty base rates.

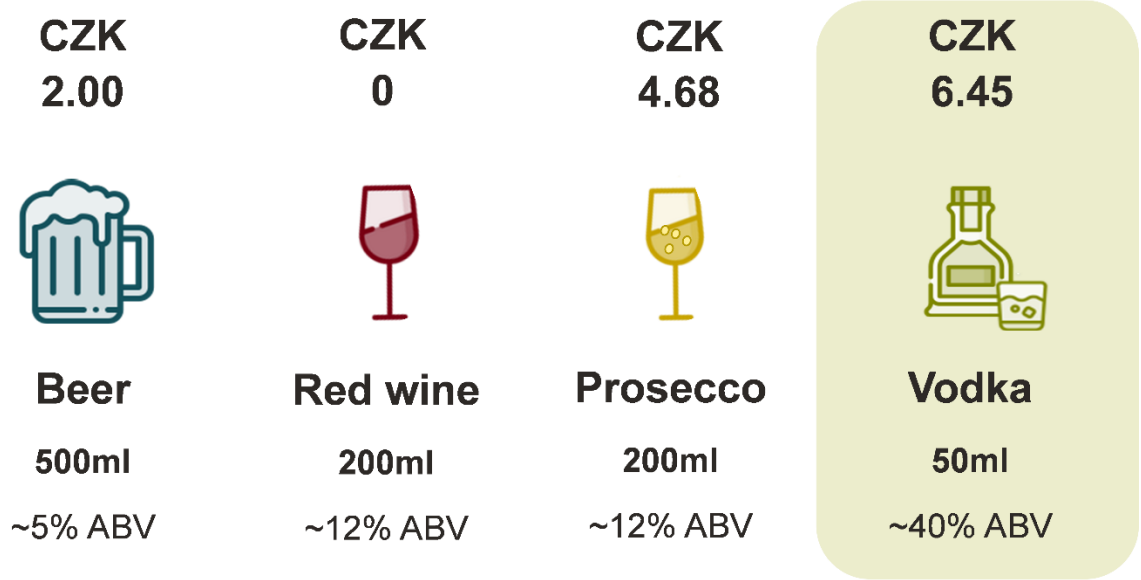
Note: For beer, ABV of 3.8% (midpoint between 3.4-4.1%) was assumed, and 0.4% OWE to ABV conversion rate. For 'Inland dark spirit' and 'Vodka', 40% ABV was assumed. Net price is the retail off-trade price net of VAT and excise duty.

56 The disparity can also be shown by comparing the excise tax due on 'standard' drinks that contain broadly similar amounts of alcohol (see Figure 13 below). In 2023, consumers paid more than three times the excise duty on a standard drink of spirits compared to beer, and almost 1.5 times more compared to sparkling wine (with no duty due on still wine).

57 This analysis illustrates that although the physiological impacts of comparable servings across the different alcoholic beverage segments may be similar, the excise duty burden on consumers was not, even before the subsequent 2024-26 spirits' excise tax increases.[53] As with the retail price decomposition above, the 2023 comparison is used because it is the relevant baseline year for the report's modelling framework; by 2026, the same comparison would point to an even greater disparity in the taxation of comparable servings.

[53] Note that following the 2024-26 spirits' tax increases, the excise tax burden would be even more pronounced. The 2026 effect is not modelled here due to the lack of retail price data availability for year 2026.

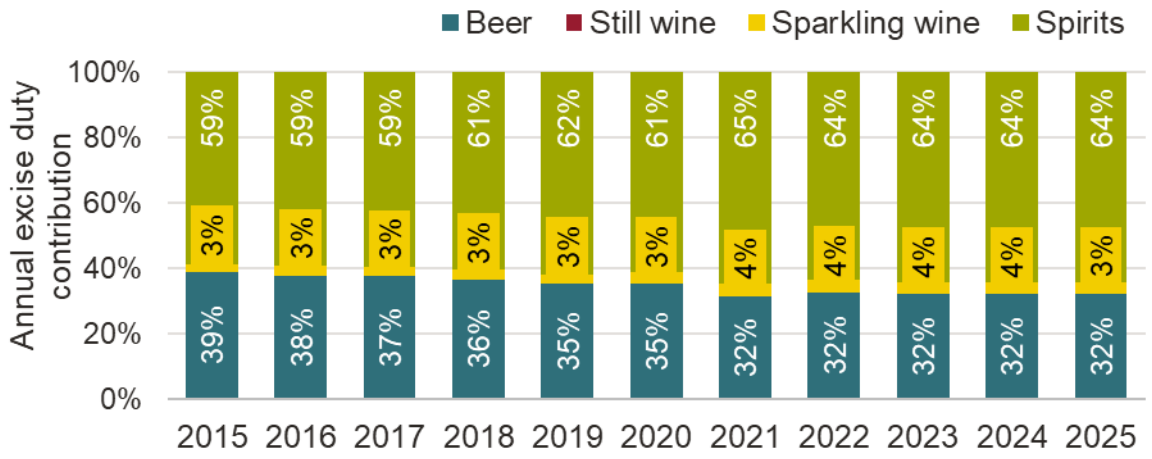
Figure 13 Excise duty on a comparable serving, 2023



Source: Frontier Economics based on CZSO prices and 2023 excise duty base rates

58 The disproportionate taxation is evident from the total excise duty contributions of the individual alcoholic beverage segments to the Czech economy. Over the past 5 years, the spirits segment generated, on average, almost twice as much excise tax revenue as beer, still wine, and sparkling wine combined (Figure 14 below).

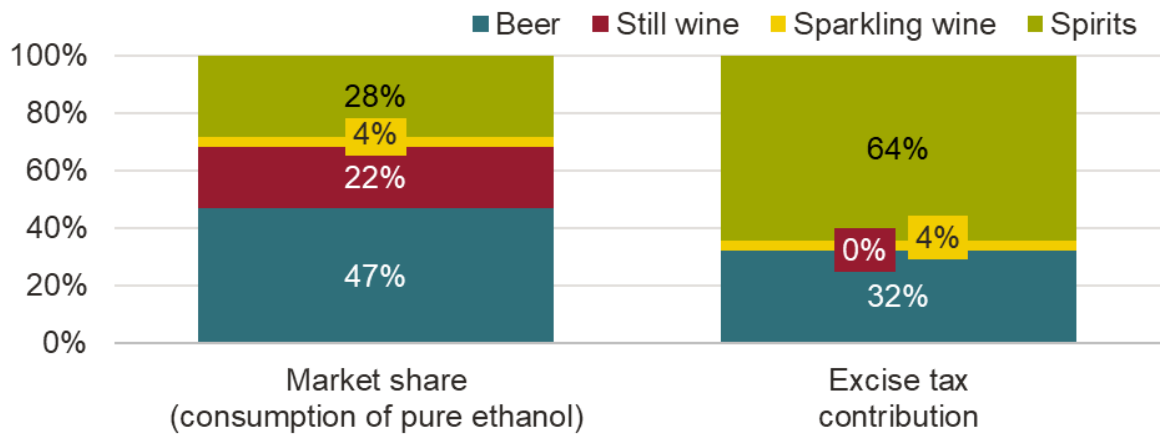
Figure 14 Annual alcohol excise duty contribution by segment (%)



Source: Frontier Economics based on data from the Czech Customs Office.

59 This imbalance is particularly apparent when comparing excise duty contributions with the relative consumption shares of the individual alcoholic beverage segments (see Section 2.1 above). In 2023, for example, the spirits segment contributed 64% of the total excise tax revenue, despite accounting for only about 28% of total ethanol consumption. For comparison, the beer market share based on total ethanol consumption was almost double that of spirits. Nevertheless, the beer segment contributed only half of the spirits' excise tax (see Figure 15 below). Still wine, which accounted for a similar share (22%) of total Czech alcohol consumption, remained completely exempt from excise duty.

Figure 15 Comparison of 2023 consumption and excise duty revenue shares across alcoholic beverage segments



Source: Frontier Economics based on CZSO consumption data and Czech Customs Office excise tax revenue data

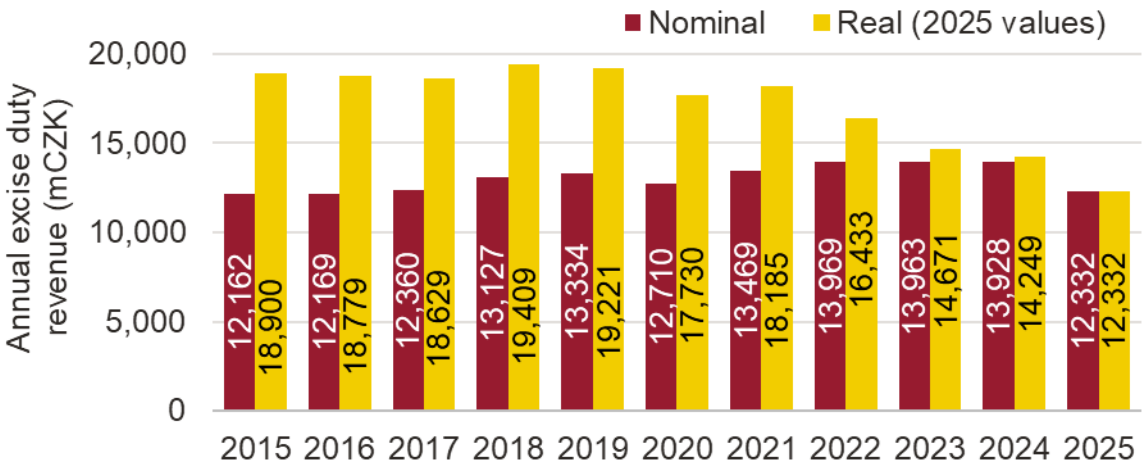
3.3 The implemented 2024-2025 spirits excise duty tax increases failed to deliver the government revenue target

60 In 2023, despite the already relatively heavy taxation of spirits, the Czech government announced plans to further increase excise duty on spirits as part of its Fiscal Consolidation Package.[54] Consequently, the spirits' tax rate increased by 10% in 2024 and 2025 and a further 5% in 2026.

61 According to the Czech Ministry of Finance, the initial 2024 and 2025 increases in spirits' tax were expected to generate an additional CZK 0.5 billion in 2024 and CZK 0.9 billion in 2025 in tax revenues.[55]

62 As shown in Figure 16 below, however, the implemented spirits' tax increases failed to deliver the expected revenue. In 2025, nominal duty revenues were more than CZK 1.6 billion lower than in 2023 compared with the forecast increase of CZK 1.4 billion. Adjusting for inflation, tax revenues were CZK 2.3 billion lower in 2025 than 2023.

Figure 16 Annual excise duty revenue from alcoholic beverages, 2015-2025



Source: Frontier Economics based on data from the Czech Customs Office

63 Given that the implemented spirits' excise tax increases did not deliver the expected revenue gains, while at the same time widening disparities in taxation across segments, this raises the question of whether alternative approaches might have achieved more effective and balanced outcomes.

54 Czech Ministry of Finance, 2023, "Ozdravný balíček", Link

55 Czech Ministry of Finance, 2023, "Ozdravný balíček", Link

4 Figureodelling the effects of alcohol excise duty tax rate changes

64 This section presents the assessment of hypothetical reforms to the alcohol excise duty system in the Czech Republic. Specifically, the effects of alternative excise duty scenarios are modelled across three main categories of outcomes: excise duty and other tax revenues; Gross Value Added ('GVA'); and employment. Tax revenue outcomes are included, given that revenue generation was an explicit objective of the reform programme implemented to date. In addition, GVA and employment are included as indicators of economic performance, allowing the fiscal effects of the tax reform to be considered alongside potential implications for domestic production activity.

65 It should be noted that these indicators do not capture all relevant policy effects. In particular, the analysis considered in this section does not quantify health effects associated with changes in alcohol consumption. Such wider considerations are discussed qualitatively in Section 5, drawing on the relevant empirical literature.

66 The modelled excise duty scenarios are hypothetical and use 2023 as the benchmark year. **The scenarios are benchmarked to 2023, rather than 2026, given the counterfactual nature of the scenarios and because 2023 is the latest year for which the full national accounts inputs needed for the modelling are available on a consistent basis.** This allows an alternative alcohol taxation pathway to be assessed relative to the implemented policy trajectory, while ensuring that fiscal, GVA and employment effects are estimated consistently.

67 The impact analysis is conducted in three stages. First, changes in excise duty are translated into retail price changes. Second, retail price changes are used to estimate changes in consumption and production. Third, resulting changes in production are translated into effects on fiscal revenues, upstream domestic production GVA, and upstream domestic production employment.

4.1 Hypothetical excise tax scenarios

4.1.1 Design of scenarios

68 The scenarios are designed to address the current imbalance in alcohol taxation in the Czech Republic. As shown in Section 3, the Czech excise duty regime is heavily skewed towards spirits, while taxes on beer and wine are comparatively low, with still wine remaining exempt from excise duty altogether. Within the region, the Czech Republic has relatively high taxation of spirits and relatively low taxation

of beer.[56] In 2023, the implied excise duty on spirits per litre of pure ethanol was around four times higher than the corresponding duty applied to beer.

69 The current excise duty structure is difficult to reconcile with standard economic principles. First, economic theory suggests that, where the objective is to raise revenue efficiently, higher tax rates would generally be expected to apply to products with lower price elasticity of demand, as this minimises distortions to consumer behaviour. The evidence considered in this report suggests that spirits are subject to both higher taxation and more elastic demand than beer and wine. Second, where consumption gives rise to wider social costs, a stronger link between taxation and ethanol content would generally imply a more consistent treatment across alcoholic beverage segments. While this would not necessarily imply identical tax rates across all segments, it would imply a more coherent structure than the current Czech excise duty system.[57]

70 The scenarios, therefore, examine alternative approaches to broadening the tax base and reducing disparities in the treatment of beer, wine and spirits. The scenarios are intended to illustrate the effects of progressively more harmonised taxation across segments.

71 The following three scenarios are considered in this analysis:

(a) **Scenario 1:** beer duty is increased to approximately half of the 2023 level of sparkling wine (**around 28% of the spirits duty rate**), and a still wine duty is introduced at approximately one quarter of the 2023 sparkling wine duty level (**around 16% of the spirits duty rate**).[58]

(b) **Scenario 2:** beer and still wine duties are increased to the 2023 level of sparkling wine (**around 60% of the spirits duty rate**).[59]

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56 Czech Republic's spirits excise tax, at EUR 1,691 per hl of ethanol, is the second highest in the region, exceeded only by Poland (EUR 1,971 per hl of ethanol). Spirits in Slovakia (EUR 1,490 per hl of ethanol), Hungary (EUR 1,581 per hl of ethanol) and Austria (EUR 1,200 per hl of ethanol) are taxed comparatively less.

Beer in the Czech Republic is taxed at EUR 1.3 per hl of finished product per degree Plato. This is considerably below the tax applied in Poland (EUR 2.7 per hl of finished product per degree Plato), Slovakia (EUR 3.6 per hl of finished product per degree Plato), Hungary (EUR 5.0 per hl of finished product per degree Plato), and Austria (EUR 2.0 per hl of finished product per degree Plato).

See EC Tax search: https://ec.europa.eu/taxation_customs/tedb/#/simple-search, accessed in May 2026.

57 Academic research does find that there can be variation in 'optimal' excise tax rates across segments, related to different types of alcoholic beverages being more associated with 'heavy' drinking patterns. Nevertheless, the variation across segments is substantially lower than the current differentials in the Czech system. See for example Grifith et al. (2017), available at https://ifs.org.uk/sites/default/files/output_url_files/WP201702.pdf.

58 Comparison is for the excise duty imposed per volume of ethanol, considering the average alcohol content of spirits (40%), wine (12%) and beer (5%).

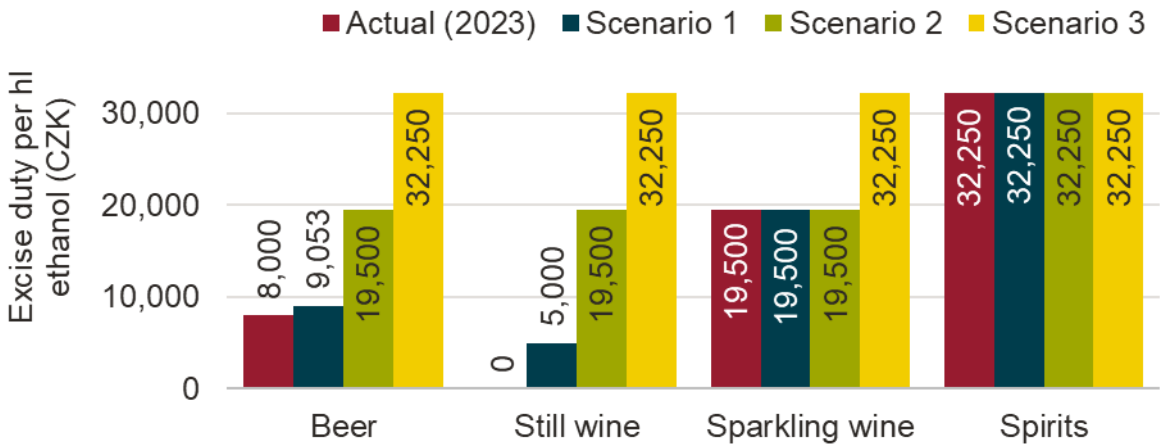
59 Comparison is for the excise duty imposed per volume of ethanol, considering the average alcohol content of spirits (40%), wine (12%) and beer (5%).

(c) **Scenario 3:** beer, still wine and sparkling wine duties are increased to the 2023 level of spirits (**i.e. 100% of the spirits duty rate**).[60]

72 In addition, the actual 2023 excise duty structure is modelled as the Baseline, against which the three alternative scenarios are assessed. The scenarios are intended as counterfactual "what-if" exercises, estimating the effects that would have been observed had the tax rates specified in the scenarios been implemented instead of those prevailing in the baseline year. The analysis is comparative static, comparing outcomes under each scenario with those observed under the Baseline.

73 Due to data limitations, the scenarios are modelled using aggregate headline excise duty rates only. Reduced rates applicable to certain smaller producers are not modelled separately. The resulting configuration of the implied excise rates per hectolitre of pure ethanol is illustrated in Figure 17 below.

Figure 17 Implied excise tax per hl of pure ethanol under modelled scenarios



Source: Frontier Economics
Note: Considering the average ABV of 40% for spirits, 12% for still and sparkling wine and 5% for beer

4.1.2 Description of the central modelling framework and assumptions

74 The modelling compares outcomes under each scenario with those of the 2023 Baseline. The central case is based on several key assumptions, described in further detail below.

75 First, **excise duty increases** are assumed to be **passed through fully** to consumer prices in absolute cash terms. Under this assumption, a given increase in excise duty is reflected one-for-one in retail prices. Since excise duty accounts

60 Comparison is for the excise duty imposed per volume of ethanol, considering the average alcohol content of spirits (40%), wine (12%) and beer (5%).

for a larger share of off-trade retail prices than of on-trade retail prices, the same absolute increase results in a larger percentage price increase in off-trade retail channels.

76 Second, the **central case considers own-price elasticities only**. The elasticity assumptions are based on mid-range estimates from the literature and correspond to elasticities of -0.46 for beer, -0.69 for wine, and -0.80 for spirits. These assumptions are used to translate retail price changes into changes in demand. Cross-price elasticities are excluded from the central case due to limited and inconsistent empirical evidence, particularly in the Czech context.[61] Their implications are examined separately in a sensitivity analysis below.

77 Third, the core **GVA and employment estimates relate only to upstream domestic production effects**. The modelling captures changes in domestic beverage production, along with the related upstream supply-chain effects, but does not explicitly model downstream impacts in wholesale, off-trade retail, and hospitality sectors. This reflects the uncertainty surrounding downstream responses to excise changes, which depend on how consumption adjusts across products and channels.

78 Fourth, the central case assumes that **imports respond proportionately to changes in domestic consumption, while exports are held constant**. This is a simplifying assumption used to estimate production-side impacts. As discussed below, this assumption is likely to overstate the reduction in domestic production when producers can redirect part of the decline in domestic sales to export markets.

79 Detailed descriptions of the methodology and underlying data sources are provided in Annex A and Annex C.

80 Overall, the approach applied uses available data to estimate the effects of hypothetical tax scenarios relative to the 2023 Baseline. In addition, the effects of actual tax changes implemented since 2023 are simulated separately. The results compare outcomes under each modelled scenario with those under the Baseline.

81 The modelling is conducted in the following stages:

- **Tax scenarios and price effects**. Retail on-trade and off-trade prices are estimated using markup assumptions. Scenario-specific excise duty rates are used to derive retail price changes under each scenario.
- **Effects on consumption**. Estimated retail price changes are combined with price elasticity assumptions to derive demand responses, resulting in

[61] Please see Annex A.2 ("Elasticities and cross-price elasticities) for further evidence.

estimated changes in consumption by alcoholic beverage segment and scenario.

- **Effects on GVA and employment**. Estimated changes in production are combined with multipliers to derive impacts on GVA and employment.
- **Effects on tax receipts**. Estimated changes in production are combined with applicable excise duty rates and multipliers to derive overall fiscal impacts.

4.2 Modelling results

4.2.1 Effects of excise tax changes on prices and demand

82 The impact assessment begins with the estimation of the retail price changes resulting from the excise duty change under each scenario. Excise duty changes are applied relative to the observed 2023 price levels.

83 It is assumed that any increase in excise duty is fully passed through to consumer prices in absolute cash terms. In percentage terms, resulting price effects are larger in retail off-trade channels than in retail on-trade channels, reflecting the fact that excise duty constitutes a larger share of the final retail price in off-trade sales.

84 The resulting price changes across different alcoholic beverage segments and distribution channels are presented in Table 9 below.

Table 9 Price change by scenario, relative to Baseline

Product	Scenario 1	Scenario 2	Scenario 3
Alcoholic beer	+1.4%	+15.0%	+31.7%
Non-alcoholic beer	-	-	-
Still wine	+5.7%	+22.2%	+36.7%
Sparkling wine	-	-	+8.0%
Spirits	-	-	-

Source: Frontier Economics
Note: Assumes 100% cost pass-through in absolute cash terms

85 These price changes are subsequently combined with the own-price elasticities described above to derive expected changes in demand. The elasticity assumptions are based on median estimates identified through a review of the existing empirical literature, including both international evidence and studies

specific to the Czech Republic.[62] On this basis, the elasticities of -0.46 for beer, -0.69 for wine and -0.80 for spirits are applied.[63] The resulting demand changes under the central case are presented in Table 10 below.

Table 10 Demand changes by scenario, relative to Baseline

Product	Scenario 1	Scenario 2	Scenario 3
Alcoholic beer	-1%	-6%	-12%
Non-alcoholic beer	-	-	-
Still wine	-4%	-13%	-19%
Sparkling wine	-	-	-5%
Spirits	-	-	-

Source: Frontier Economics
Note: Assumes 100% cost pass-through in absolute cash terms and no cross-price elasticity (no substitution response)

86 Under the central case, the largest demand reductions are estimated in categories subject to the largest excise duty increases, most notably beer under Scenarios 2 and 3 and still wine across all three scenarios.

4.2.2 Effects on fiscal revenues, upstream GVA and employment

Overall results

87 The estimated demand changes described above are used to estimate changes in fiscal revenues, upstream GVA and employment.[64] To capture the transmission of these effects through the economy, multipliers reflecting direct, indirect and induced linkages between the alcoholic beverage segments and the wider economy are applied. The results are expressed on an annual basis and represent the estimated effects that would arise if the modelled scenarios were implemented, relative to the 2023 Baseline.

88 The reported GVA and employment effects capture **upstream domestic production effects only**. They should therefore be interpreted as partial estimates

62 See for example Janda, K., Mikolášek, J. and Netuka, M. (2009) "The Estimation of Complete Almost Ideal Demand System from Czech Household Budget Survey Data"; Čiderová, T. and Ščasný, M. (2022) "Estimation of alcohol demand elasticity: Consumption of wine, beer, and spirits at home and away from home"; Wagenaar et al. (2009), "Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies"; and Nelson, J. (2013) "Meta-analysis of alcohol price and income elasticities – with corrections for publication bias".

63 Please see Annex A.2 ("Elasticities and cross-price elasticities) for further discussion.

64 Domestic production volumes only are considered in the estimation of the changes in the upstream economic contribution. Imported volumes are disregarded.

of economic impact rather than whole-economy effects. In particular, the wider downstream economic contribution associated with importation, wholesale, off-trade retail and hospitality sectors is not modelled explicitly. At the same time, the reported upstream GVA and employment effects may be conservative with respect to production-side impacts, as potential export adjustment and cross-segment substitution effects are not fully captured. Downstream sectors are excluded from the core modelling framework because the effects of excise duty changes - a tax levied at the point of production - remain uncertain in those sectors and depend on how consumption adjusts across products and channels.

89 Table 11 summarises the estimated effects of the modelled scenarios, relative to the 2023 Baseline.

Table 11 Summary of estimated effects, relative to Baseline

		Delta relative to Baseline results		
	Baseline	Scenario 1	Scenario 2	Scenario 3
Tax receipts (mCZK)	28,189	+1,876 (+6.7%)	+11,645 (+41.3%)	+21,774 (+77.2%)
o/w excise tax[65]	15,503	+1,765 (+11.4%)	+10,640 (+68.6%)	+19,666 (+126.8%)
o/w VAT from additional excise duty[66]	n/a	+193	+1,625	+3,231
o/w other tax	12,686	-81 (-0.6%)	-621 (-4.9%)	-1,124 (-9.3%)
GVA (mCZK)	40,543	-260 (-0.6%)	-1,984 (-4.9%)	-3,591 (-9.3%)

65 Note that in the 2023 economic contribution quantification (Section 2.2 above), excise duty contribution was sourced directly from the Czech Customs Office. Here, the excise duty contribution was modelled for the 2023 Baseline scenario for consistency in approach between the Baseline and the alternative modelled scenarios.

66 VAT collected from the sale of domestically produced alcoholic beverages is considered in the row below. This row considers only the additional VAT which is collected on the increase in excise duty with respect to the excise duty applied in Baseline. It should be noted that while higher excise duties increase the VAT collected on alcohol sales, they may also reduce spending on other goods and services due to demand substitution. The net effect of the additional VAT collected on the increase in excise duty on the overall VAT revenues is therefore uncertain.

		Delta relative to Baseline results		
	Baseline	Scenario 1	Scenario 2	Scenario 3
Employment (FTE)	30,002	-192 (-0.6%)	-1,468 (-4.9%)	-2,657 (-9.3%)

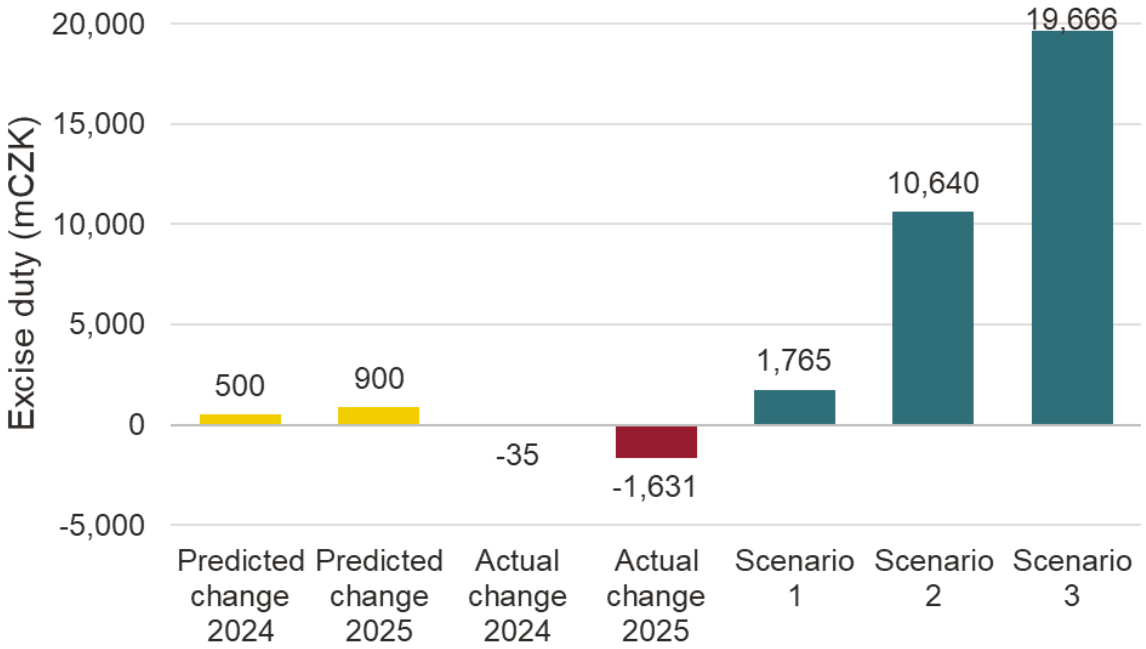
Source: Frontier Economics.

90 All three scenarios result in higher excise duty revenues, although the magnitude of the increase differs substantially across scenarios. Excise revenues are estimated to increase by approximately CZK 1.8 billion under Scenario 1, CZK 10.6 billion under Scenario 2, CZK 19.7 billion under Scenario 3. Moreover, VAT levied on the increase in the excise tax is estimated to generate an additional CZK 0.2 billion under Scenario 1, CZK 1.6 billion under Scenario 2, CZK 3.2 billion under Scenario 3.[67] These gains are partially offset by reductions in other tax revenues, including VAT, corporate tax and net product tax, reflecting lower levels of domestic production and associated upstream supply-chain activity. However, these offsetting effects remain modest relative to the increase in excise revenues. **Overall, total tax revenues are estimated to increase by approximately CZK 1.9 billion under Scenario 1, CZK 11.6 billion under Scenario 2, and CZK 21.8 billion under Scenario 3**.

91 Figure 18 compares expected tax revenues effects under each scenario with both the excise revenues increases anticipated by the government for 2024 and 2025, and actual revenue changes observed in those years. As noted above, the scenarios are counterfactual in nature and illustrate the estimated outcomes that would have been observed had the respective scenarios been implemented in 2023.

[67] Note that while higher excise duties increase the VAT collected on alcohol sales, they may also reduce spending on other goods and services due to demand substitution. The net effect of the additional VAT collected on the increase in excise duty on the overall VAT revenues is therefore uncertain.

Figure 18 Changes in excise duty collected (predicted, actual and modelled)



Source: Frontier Economics based on the Czech Ministry of Finance, the Czech Customs Office (and modelling results)
Note: All changes are relative to the 2023 level of excise duty

92 These fiscal gains need to be considered alongside the estimated reductions in upstream domestic production GVA. Under Scenario 1, upstream GVA is estimated to decline by around CZK 260 million, or around 0.6% relative to the Baseline. Under Scenario 2, the estimated reduction amounts to approximately CZK 2.0 billion, or 4.9%, and under Scenario 3, the estimated reduction reaches approximately CZK 3.6 billion, or 9.3%. Employment effects follow a similar pattern, with estimated reductions ranging from 192 FTE jobs under Scenario 1 to around 2,700 FTE jobs under Scenario 3.

93 **The reported reductions in upstream GVA and employment should be interpreted as upper-bound estimates**. In the central case, imports are assumed to adjust proportionately to changes in domestic consumption, while exports are held constant. **In practice, producers may respond differently, including by redirecting part of the reduction in domestic sales towards export markets.** This is particularly plausible in the beer segment, where Czech production is already relatively export-oriented.

94 To explore this mechanism further, an exploratory trade simulation was conducted using a single-sector Armington framework, under which changes in relative prices alter trade flows. The results suggest that around 52% of the reduction in domestic

consumption could be reallocated towards export markets.[68] While this estimate is not incorporated into the core modelling results, it indicates that the actual reduction in upstream GVA may be materially smaller than the central estimate presented here (see Annex C for more details).

95 A similar interpretation applies to employment effects. The reported reductions in upstream employment are best understood as short- to medium-term effects within the alcoholic beverages sector and related upstream industries. Over time, part of this impact is likely to be mitigated through labour reallocation to other sectors of the economy. Accordingly, **the reported employment impacts should also be interpreted as upper-bound estimates**.

Results by segment

96 Table 12, Table 13 and Table 14 present the estimated excise duty, additional VAT from the higher excise tax rate and other tax revenues, disaggregated by alcoholic beverage segment and scenario. As expected, the largest increases in excise tax revenues are observed in the segments subject to the largest increases in excise duty rates relative to the Baseline.

Table 12 Excise tax impacts (mCZK)

		Delta relative to Baseline results		
	Baseline	**Scenario 1**	**Scenario 2**	**Scenario 3**
Alcoholic beer	5,422	+663 (+12.2%)	+6,772 (+124.9%)	+13,334 (+245.9%)
Non-alcoholic beer	-	-	-	-
Still wine	-	+1,101	+3,868	+5,906
Sparkling wine	759	-	-	+425 (+56.1%)
Spirits	9,323	-	-	-
Total	**15,503**	**+1,765 (+11.4%)**	**+10,640 (+68.6%)**	**+19,666 (+126.8%)**

Source: Frontier Economics calculations

68 The simulation is carried out using the International Trade and Production Database for Simulation (ITPD-S) dataset from United States International Trade Commission, which has granular data at the sectoral level, including separately splitting out each of beer, wine and spirits. However, some adjustment to the data on domestic production-consumption is required, which in turn affects the quantitative results. The trade simulation results are therefore used to test the possible extent of substitution between domestic sales and exports, and are not intended as an estimate.

Note: Assumes 100% cost pass-through in absolute cash terms and no cross-price elasticity (no substitution response). Excise duty revenue considers domestically consumed alcoholic beverages (both imported and domesticly-produced)

Table 13 VAT from additional excise duty (mCZK)

		Delta relative to Baseline results		
	Baseline[69]	Scenario 1	Scenario 2	Scenario 3
Alcoholic beer		+138	+1,433	+2,882
Non-alcoholic beer		0	0	0
Still wine		+55	+193	+292
Sparkling wine		0	0	+57
Spirits		0	0	0
Total		**+193**	**+1,625**	**+3,231**

Source: Frontier Economics calculations

Note: The analysis assumes 100% cost pass-through in absolute cash terms; no cross-price elasticity (no substitution response) and covers upstream (manufacturing) sector only. It should be noted that while higher excise duties increase the VAT collected on alcohol sales, they may also reduce spending on other goods and services due to demand substitution. The net effect of the additional VAT collected on the increase in excise duty on the overall VAT revenues is therefore uncertain. For this reason the VAT collected due to the increase in the excise duty is reported separately.

Table 14 Other tax impacts (mCZK)

		Delta relative to Baseline results		
	Baseline	Scenario 1	Scenario 2	Scenario 3
Alcoholic beer	9,576	-56 (-0.6%)	-535 (-5.6%)	-981 (-10.2%)
Non-alcoholic beer	704	-	-	-
Still wine	588	-25 (-4.3%)	-86 (-14.6%)	-128 (-21.8%)
Sparkling wine	250	-	-	-14 (-5.6%)
Spirits	1,569	-	-	-
Total	**12,686**	**-81**	**-621**	**-1,124**

69 VAT collected from the sale of domestically produced alcoholic beverages is already considered in Table 14 below. The values reported in this table consider only the additional VAT which is collected on the increase in excise duty with respect to the excise duty applied in Baseline.

		Delta relative to Baseline results		
	Baseline	Scenario 1	Scenario 2	Scenario 3
		(-0.6%)	(-4.9%)	(-9.3%)

Source: Frontier Economics calculations

Note: Assumes 100% cost pass-through in absolute cash terms; no cross-price elasticity (no substitution response); covers upstream (manufacturing) sector only

97 Table 15 presents the estimated reductions in upstream GVA by alcoholic beverage segment and scenario, relative to the Baseline. In absolute monetary terms, the largest reductions are observed in the alcoholic beer segment, while in relative terms, the largest effects are estimated for still wine. The considerations regarding export adjustment, as discussed in the context of the overall results, apply equally to these segment-level estimates. In other words, the effects reported in this section should be interpreted as upper-bound estimates.

Table 15 GVA impacts (mCZK)

		Delta relative to Baseline results		
	Baseline	Scenario 1	Scenario 2	Scenario 3
Alcoholic beer	30,602	-180 (-0.6%)	-1,710 (-5.6%)	-3,137 (-10.2%)
Non-alcoholic beer	2,250	-	-	-
Still wine	1,878	-80 (-4.3%)	-274 (-14.6%)	-409 (-21.8%)
Sparkling wine	798	-	-	-45 (-5.7%)
Spirits	5,015	-	-	-
Total	**40,543**	**-260** **(-0.6%)**	**-1,984** **(-4.9%)**	**-3,591** **(-9.3%)**

Source: Frontier Economics

Note: Assumes 100% cost pass-through in absolute cash terms; no cross-price elasticity (no substitution response); covers upstream (manufacturing) sector and related upstream industries only

98 Table 16 presents the estimated changes in employment by segment and scenario. Employment effects broadly mirror those observed for GVA, with the largest reductions concentrated in the alcoholic beer segment. As discussed above, these results pertain only to upstream employment and should not be interpreted as net employment effects at the level of the overall economy.

Table 16 Employment impacts (FTE)

		Delta relative to Baseline results		
	Baseline	**Scenario 1**	**Scenario 2**	**Scenario 3**
Alcoholic beer	22,646	-133 (-0.6%)	-1,265 (-5.6%)	-2,321 (-10.2%)
Non-alcoholic beer	1,665	-	-	-
Still wine	1,390	-59 (-4.3%)	-203 (-14.6%)	-303 (-21.8%)
Sparkling wine	591	-	-	-34 (-5.7%)
Spirits	3,711	-	-	-
Total	**30,002**	**-192** **(-0.6%)**	**-1,468** **(-4.9%)**	**-2,657** **(-9.3%)**

Source: Frontier Economics calculations.

Note: Assumes 100% cost pass-through in absolute cash terms; no cross-price elasticity (no substitution response); covers upstream (manufacturing) sector and related upstream industries only

4.3 Sensitivity analyses

99 The central results presented above assume that a price increase in one alcoholic beverage segment affects demand only within that segment. Under this assumption, an increase in beer prices, for example, leads to a reduction in beer demand without generating an offsetting increase in demand for spirits or wine. In economic terms, the central case assumes zero cross-price elasticities, which measure the percentage change in demand for one product in response to a percentage change in the price of another comparable product.

100 This is a simplifying assumption. In practice, some consumers may switch across alcoholic beverage segments when relative prices change. However, the empirical literature on cross-price elasticities between segments remains limited and inconsistent, both internationally and in the Czech context. Reported estimates differ in magnitude, and, in some cases, in signs. Cross-price effects are therefore excluded from the central case and considered separately as part of an illustrative sensitivity.

101 To assess the potential relevance of such substitution effects, the modelling framework was re-estimated using a pragmatic and theory-consistent system of cross-price elasticities based on observed market shares. Under this approach,

larger segments generate stronger cross-price effects than smaller ones. Further methodological details are provided in Annex A.

102 Thes sensitivity analysis suggests that allowing for cross-segment substitution would reduce the estimated decline in upstream GVA, while increasing the estimated excise duty revenues. to the extent that consumers substitute from alcoholic beer or wine towards other segments, such as spirits, the reduction in upstream GVA and employment becomes smaller, while excise revenues increase. The resulting estimates are presented in Table 17 below.

Table 17 Scenario impacts relative to Baseline, accounting for cross-price elasticities

	Scenario 1	Scenario 2	Scenario 3
GVA (mCZK)	+50 (+0.1%)	-866 (-2.1%)	-1,496 (-3.8%)
Employment (FTE)	+37 (+0.1%)	-641 (-2.1%)	-1,107 (-3.8%)
Excise duty (mCZK)	+1,932 (+12.5%)	+11,708 (+75.5%)	+22,512 (+145.2%)
VAT from additional excise duty (mCZK)[70]	+208	+1,730	+3,536
Other tax (mCZK)	+16 (+0.1%)	-271 (-2.1%)	-468 (-3.8%)

Source: Frontier Economics
Note: GVA / employment / other tax covers upstream (manufacturing) sector only

103 Under this sensitivity analysis, the reduction in upstream GVA under Scenario 3 declines from around CZK 3.6 billion in the central case to around CZK 1.5 billion, while the excise duty revenue gain rises from around CZK 19.7 billion to around CZK 22.5 billion. Under Scenario 1, the estimated reduction in upstream GVA

70 VAT collected from the sale of domestically produced alcoholic beverages is considered in the row below. This row considers only the additional VAT which is collected on the increase in excise duty with respect to the excise duty applied in Baseline. It should be noted that while higher excise duties increase the VAT collected on alcohol sales, they may also reduce spending on other goods and services due to demand substitution. The net effect of the additional VAT collected on the increase in excise duty on the overall VAT revenues is therefore uncertain.

changes from a reduction of around CZK 260 million to an increase of around CZK 50 million.

104 These results should be interpreted with caution. While they provide a useful indication of the potential direction and scale of cross-segment substitution effects, they are not adopted as the central estimate in this report due to the limited empirical basis for identifying a single robust and reliable set of cross-price elasticities.

5 Discussion and conclusion

5.1 Policy implications

105 This section outlines the policy implications that can be drawn from the modelling results and the analytical framework underpinning them. Policy discussions in the field of alcohol taxation are inherently complex and multidimensional, drawing on a range of economic, fiscal, social, and public health considerations. As a result, conclusions derived from the analysis of GVA, employment and tax impacts should be interpreted as partial and focused on a specific set of economic outcomes. Where relevant, these findings are considered alongside broader policy considerations discussed in the wider literature.

5.1.1 Effects on tax and economic activity

106 The modelling quantifies the effects of the hypothetical reform options that would reduce disparities in the taxation of alcoholic beverages, in line with international good practice. [71]

107 The modelling highlights the fiscal gains associated with higher excise duties under all scenarios considered. Under conservative assumptions, including the exclusion of cross-price effects, annual excise duty revenues are estimated to increase by between CZK 1.8 billion and CZK 19.7 billion per year relative to the 2023 Baseline. Even after accounting for estimated reductions in other tax revenues, the overall net fiscal effect remains positive, ranging from CZK 1.9 billion to CZK 21.8 billion annually. These revenue gains may be contrasted with the recent policy approach focused exclusively on increasing spirits duties, which failed to deliver the revenue increases anticipated by the government while further widening disparities in the taxation of alcoholic beverages in the Czech Republic.

108 Excise duty is levied at the point of production and can therefore be expected to affect producer prices, with at least part of these changes passed through to consumers. Changes in consumer prices, in turn, affect consumer behaviour. The resulting adjustments in consumption and production generate broader macroeconomic effects through direct, indirect and induced effects that reflect economic linkages between the alcoholic beverages sector and the wider economy.

109 The analysis presented in this report focuses on alcoholic beverage manufacturing and the related upstream activities. The modelling suggests reductions in GVA and

[71] For further details of the modelled scenarios – see Section 4.1; for further details of the estimated economic effects – see Section 4.2.

employment under all scenarios considered. Estimated GVA effects range from a reduction of CZK 260 million under Scenario 1 to CZK 3.6 billion under Scenario 3. Employment effects range from 192 to 2,657 FTE jobs.

110 These estimates should be interpreted as upper-bound effects. Reductions in domestic consumption may be partially offset by increased exports in response to changes in relative domestic prices. Under certain assumptions, more than half of lost domestic sales could be redirected towards foreign markets, thereby mitigating the effects on GVA and employment in manufacturing and related upstream activities. In addition, when cross-price elasticities and substitution effects are incorporated into the modelling, the estimated GVA effects range from an increase of CZK 50 million to a reduction of CZK 1.5 billion.

111 Overall, the results suggest that Scenario 3, which is most closely aligned with international good practice, generates substantial fiscal gains while also being associated with the largest estimated reduction in GVA across alcoholic beverage manufacturing and related upstream activities. These estimates should nevertheless be interpreted as upper-bound effects, and actual impacts are likely to be lower. Scenario 1, by contrast, may be viewed as a more limited first step in the reform process: it reduces fragmentation in the taxation of alcoholic beverages, offsets the revenue shortfall observed following the increases in spirits duties introduced after 2023, and is associated with only limited macroeconomic effects.

5.1.2 The wider context of alcohol taxation

112 The modelling presented in this report focuses on the effects of changes in the taxation of alcoholic beverages on fiscal indicators and macroeconomic performance. Other channels through which changes in taxation may affect living standards in the Czech Republic are not quantified within the scope of the analysis. This applies in particular to impacts on health outcomes.

113 A substantial international literature points to the potential health benefits associated with reforms to alcohol taxation. The underlying rationale for taxation in this context is to mitigate potential harms (“negative externalities”) that arise from alcohol consumption. This principle implies that taxation should primarily reflect the amount of alcohol consumed, regardless of the specific beverage in which alcohol is contained. In turn, this supports the case for reducing disparities in the taxation of ethanol across alcoholic beverage categories. As shown by the analysis of the current Czech excise duty regime, these disparities are substantial. In 2023, ethanol contained in spirits was taxed at a rate more than four times higher than ethanol contained in beer.

114 Empirical evidence on the health effects of reforms to the rates and structure of alcohol taxation continues to evolve. Nevertheless, the emerging literature is

broadly consistent with the principle of reducing fragmentation and disparity in the taxation of alcohol content across segments. For example, evidence from the UK suggests that the strongest positive effects on health outcomes - measured in terms of prevented deaths, avoided hospitalisations, and reductions in public healthcare expenditure - are associated with scenarios that increase taxes on comparatively "undertaxed" beverages, and move towards greater consistency in alcohol content taxation across categories. Similar conclusions have been reflected in the recent policy research by the Czech think tank *Ministr zdraví*, which highlights the benefits of reducing disparities in alcohol taxation and estimates potential healthcare savings of approximately CZK 16.1 billion, alongside broader improvements in quality-of-life indicators.[72]

115 These findings are also consistent with broader principles of optimal taxation. They suggest that, all else being equal, the taxation of alcoholic beverages should be structured more consistently across beverage categories. At the same time, it should take account of differences in demand responsiveness and the wider social costs associated with alcohol consumption, rather than relying on a highly fragmented tax structure.

116 Taken together, these considerations suggest that there may be grounds for reforming alcohol taxation in the Czech Republic, through a reduction in disparities in the implied taxation of alcohol across alcoholic beverages, and through a more systematic approach to excise duty setting. The scenarios modelled described in this report are consistent with this general direction. Scenario 3 reflects the highest degree of alignment in ethanol-equivalent taxation across segments and includes an increase in duties on the largest and least price-elastic segment, namely beer (see Annex A.2 for reported elasticities). Scenario 1 represents a more limited adjustment that may be viewed as a first step towards reforms motivated by public-health considerations, and Scenario 2 represents an intermediate step. All three scenarios are based on the same underlying principle: that ethanol should be taxed more consistently across alcoholic beverage categories. In this respect, they align the economic case for a broader and more coherent tax base with the public-health case for a less fragmented system of alcohol taxation.

117 Overall, the findings suggest that the effects of the reform scenarios considered in this report may extend beyond the fiscal and macroeconomic indicators quantified in the modelling. In addition, the estimated reductions in GVA should be interpreted as conservative upper-bound estimates and may therefore overstate the scale of any actual economic adjustment. To the extent that reforms contribute to improved

72 Data o zdravi, "How to decrease alcohol consumption in the Czech Republic – four recommendations and their impacts", available at https://www.dataozdravi.cz/temata/clanky/alkohol/alkoholova-politika

health outcomes, part of these effects may be offset by wider social and economic benefits that are not quantified within the scope of the modelling.

Annex A Description and explanation of data and its use

A.1 This annex summarises the main data inputs and assumptions used in the analyses described in this report.

A.1 Input data

A.2 This section describes the main data sources used in the analyses described in this report. Where possible, the analysis relies on publicly available data, most notably the Czech Statistical Office ("CZSO") and the International Wine and Spirits Record ("IWSR")[73].

A.3 Where necessary, due to data limitations, the analysis relies on several assumptions. These are described in further detail below.

Alcohol consumption data

A.4 The total annual alcohol consumption volumes (both in terms of final product and in terms of pure ethanol) on a per-segment basis are based on publicly available CZSO data of per-capita alcohol consumption.[74]

A.5 The annual per-capita alcohol consumption was subsequently converted into the total annual alcohol consumption using the annual population size data available on CZSO.[75]

A.6 It is worth noting the following limitations of the corresponding alcohol consumption dataset:

- Aggregation of still wine and sparkling wine volumes into a single 'wine' category: Relative shares of still wine and sparkling wine in the total wine consumption based on the IWSR data was therefore used to split out the total wine consumption volume.[76] [77]
- Aggregation of alcoholic and non-alcoholic beer volumes into a single 'beer' category: As non-alcoholic beer is of a low alcohol content, it is assumed to be also included in the total beer consumption volume reported by CZSO.

[73] Global drinks data and insight provider.

[74] CZSO, Dataset "Tab. 03.03 Spotřeba alkoholických nápojů a cigaret na 1 obyvatele v České republice", Link: https://csu.gov.cz/produkty/cesko-od-roku-1989-v-cislech-aktualizovano-11-12-2025, accessed in March 2026

[75] CZSO, Dataset "Tab. 01.01 Vybrané demografické údaje v České republice", Link: https://csu.gov.cz/produkty/cesko-od-roku-1989-v-cislech-aktualizovano-11-12-2025, accessed in March 2026

[76] For the raw CZSO data, the total of 'grape wine' and 'other wine' was used to represent the entire wine category (incl. still and sparkling).

[77] Note that 'wine' considers both 'grape wine' and 'other wine' volumes.

Similar to the approach for wine, the relative shares of alcoholic and non-alcoholic beer in the total beer consumption based on the IWSR data was therefore used to split out the total beer consumption volume. Given the very low alcoholic content on non-alcoholic beer, it is assumed that the total beer consumption in terms of pure ethanol, as reported by CZSO, is attributable to alcoholic beer.

Alcohol production data

A.7 The total alcohol production volumes and values for the 'base year' 2023 were based on the per-segment total volumes and total values of production sold, available in CZSO datasets.[78] More specifically, these datasets provided information on:

- The total value of production at producer prices, separately for alcoholic beer,[79] non-alcoholic beer,[80] wine[81] and spirits[82]. As the split of total wine production value into still and sparkling wine was unavailable, it was assumed that these two categories have equivalent per-unit production values and used their relative production volume shares to split the total.
- The total production volume separately for alcoholic beer,[83] non-alcoholic beer,[84] and spirits.[85] As still and sparkling wine production volumes were unavailable, they were approximated using the CZSO data on still and

78 CZSO, Dataset "Table 1 Volume of production of selected industrial products and services", and CZSO, Dataset "Table 2 Value of sold production of selected industrial products and services", Link: https://csu.gov.cz/produkty/production-of-selected-industrial-products-year-2023; accessed in March 2026.

79 Relevant categories considered: Beer made from malt (excluding non-alcoholic beer containing ≤ 0.5% by volume of alcohol)

80 Relevant categories considered: Non-alcoholic beer (beer containing ≤ 0.5% by volume of alcohol)

81 Relevant categories considered: (1) White wine in specified regions (v.q.p.r.d.); (2) Wine and grape must with fermentation prevented or arrested by the addition of alcohol, put up with pressure of CO2 in solution ≥1 bar < 3, at 20°C (excluding sparkling wine); (3) Quality wine and grape must with fermentation prevented or arrested by the addition of alcohol, v.q.p.r.d. of an alcoholic strength of ≤15% excluding white wine and sparkling wine; and (4) Wine and grape must with fermentation prevented or arrested by the addition of alcohol, of an alcoholic strength <=15% (excluding sparkling wine and wine v.q.p.r.d.)

82 Relevant categories considered: (1) Whisky; (2) Rum and other spirits obtained by distilling fermented sugar-cane products; (3) Gin and Geneva; (4) Vodka of an alcoholic strength by volume of ≤ 45.4%; (5) Spirits distilled from fruit (excluding liqueurs, gin, Geneva; grape wine or grape marc); (6) Spirits, liqueurs and other spirituous beverages (excluding spirits distilled from grape wine, grape marc or fruit/whisky, rum, tafia, gin and geneva, and (7) Vodka of an alcoholic strength by volume of <= 45.4%, spirits distilled from fruit).

83 Reported in terms of hl of final product. For the list of relevant categories considered, see the previous paragraph's footnote.

84 Reported in terms of hl of final product. For the list of relevant categories considered, see the previous paragraph's footnote.

85 Reported in terms of l of pure ethanol. These volumes were subsequently converted into litres of final product, assuming an average 40% ABV. For the list of relevant categories considered, see the previous paragraph's footnote.

sparkling wine consumption (described above), imports and exports (described below).[86]

- Per-unit production value in CZK/l of final product was subsequently calculated by dividing the per-segment total production value with the respective production volume. This was estimated to be roughly 19 CZK/l for beer, 43 CZK/l for still and sparkling wine and 110 CZK/l for spirits.

On-trade and off-trade consumption shares

A.8 The annual split of retail consumption into off-trade and on-trade was based on the relative volumes of each respective alcoholic beverage segment's off-trade and on-trade consumption, as reported by IWSR.

A.9 IWSR reports volumes separately for beer,[87] still wine,[88] sparkling wine,[89] and spirits[90].

A.10 It should be noted that IWSR does not report off-trade and on-trade consumption levels specifically for alcoholic and non-alcoholic beer. It is consequently assumed that these shares are equivalent and correspond to the on-trade and off-trade consumption shares of the overall 'beer' category.

Imports and exports volumes

A.11 The annual volumes and values of imports and exports for each alcoholic beverage segment are based on CZSO datasets.[91] [92]

86 Production volume is approximated as consumption volume – imported volume + exported volume.

87 Relevant categories considered: beer

88 Relevant categories considered: fortified wine, light aperitifs, other wines, still wine

89 Relevant categories considered: sparkling wine.

90 Relevant categories considered: agave-based spirits, aniseed, bitters/spirit aperitifs, brandy, cane, gin and genever, liqueurs, other spirits, rum, vodka, and whisky.

91 Based on total annual volume and value of imports and exports by product group, available on CZSO website at "Pohyb zboží přes hranice (PZpH)"; Link: https://apl.czso.cz/pll/stazo/STAZO.STAZO; accessed in March 2026.

92 Imported and exported volumes are reported in terms of net weight excluding packaging, in kg. A conversion rate of 1kg to 1l was assumed.

A.12 The aforementioned datasets report the annual import and export volumes and values separately for beer,[93] still wine,[94] sparkling wine[95] and spirits.[96]

2023 consumer prices

A.13 The 2023 off-trade retail prices considered in the analyses described in this report are based on CZSO consumer prices dataset.[97] This 2023 dataset reports average monthly consumer prices,[98] for selected products within the beer,[99] wine[100] and spirits[101] segments.

A.14 To calculate the average off-trade retail prices, first, the average price per litre of each reported product over the reported 12 months was calculated. Given the lack of further information, in the analyses described in this report, it was assumed that the reported prices are representative of the average per-segment off-trade retail prices.[102]

A.15 To calculate the average on-trade retail prices, the off-trade retail prices, described above, were adjusted using the average off-trade and on-trade mark-up assumptions.[103] [104]

A.16 The resulting average retail prices are summarised in Table 18 below.

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93 Product categories considered: (1) 11230: Beer made from malt

94 Product categories considered : (1) 11217: Wine of fresh grapes (not sparkling), grape must; and (2) 11213: Vermouth and other wines of fresh grapes, flavoured with plants or aromatic substances

95 Product categories considered: (1) 11241: Sparkling wine

96 Product categories considered: (1) 11241: Whisky; (2) 11242: Spirits obtained by distilling grape wine or grape marc; (3) 11244: Rum and West Indies rum; (4) 11245: Gin and juniper-flavoured spirits; (5) 11249: Spirits and distilled alcoholic beverages, not elsewhere specified; and (6) 11249: Spirits and distilled alcoholic beverages, not elsewhere specified

97 CZSO Dataset, "Average consumer prices of selected goods", Link: https://vdb.czso.cz/vdbvo2/faces/en/index.jsf?page=vystup-objekt&pvo=CEN02A42&z=T&f=TABULKA&skupId=1793&katalog=31779&pvo=CEN02A42&c=v3~8__RP2023; accessed in March 2026.

98 This is understood to be the off-trade retail price.

99 Bottled 0.5l beer, 3.4-4.1% alcohol

100 Quality red wine from 2015, 0.75l

101 Vodka 1l; and Inland dark spirit (formerly rum) 1l

102 Given that two products were reported for the spirits segment, for this analysis, these two were averaged to obtain the average off-trade spirits price.

103 See Annex A.2 for further information on mark-up assumptions.

104 On-trade price for each segment was calculated as follows: [Average off-trade retail price / (1+VAT) / (1+ off-trade retail mark-up)] * (1 + wholesale mark-up) * (1 + on-trade retail mark-up) * (1+ VAT)

Table 18 Average 2023 consumer prices, CZK per litre of finished product

	Off-trade retail price	On-trade retail price
Beer	25	72
Still wine	114	235
Sparkling wine	187	387
Spirits	266	1,100

Source: Frontier Economics, based on CZSO off-trade retail prices and average wholesale and retail mark-up assumptions

Note: Wholesale mark-up (applicable to products sold via on-trade retail channels) is assumed to be 7.5%, off-trade retail mark-up is assumed to be 30%, on-trade retail mark-up is assumed to be 250% for beer, 150% for still and sparkling wine and 400% for spirits.

IO tables

A.17 The analysis described in this report relies on symmetric input-output tables on an industry-by-industry basis for the Czech Republic, for the most recent available year (2022).[105]

A.18 Output, [106] GVA,[107] employment[108] and tax contribution (including VAT,[109] corporate tax[110] and net product tax[111]) multipliers were estimated for the following segments:

- Manufacture of beverages: used to quantify the economic impact of alcoholic beverages via the upstream alcoholic beverages manufacturing sector;
- Wholesale trade, except of motor vehicles; retail trade, except of motor vehicles: used to quantify the economic impact of alcoholic beverages via the downstream wholesale distribution and off-trade retail sectors;[112]

105 CZSO, "Symmetric input-output tables" from 2022 (latest data available)

106 Output per industry (current prices) was taken directly from the IO table.

107 GVA per industry (current prices) was taken directly from the IO table).

108 To estimate employment multipliers, the Input-Output data was supplemented with the data on full-time equivalent employees (FTE) per industry. Source: CZSO, Dataset "Total employment (jobs in full time equivalent)"

109 'Value added tax (VAT)' entry from CZSO Supply and use table

110 Corporate income tax data (received directly from the Czech Ministry of Finance).

111 'Taxes on products excl. VAT + Subsidies on products' entry from CZSO Supply and use table.

112 To avoid double-counting, the indirect wholesale downstream effect disregards the output generated via beverages sector (as this is already included in the beverages multiplier).

- Food and beverage service activities: used to quantify the economic impact of alcoholic beverages via the on-trade retail sector.[113]

A.19 In the absence of more granular data, the multipliers of the aggregate beverages sector are assumed to be representative of multipliers for the individual beer, still wine, sparkling wine and spirits segments.

A.2 Assumptions and parameters

Alcohol strength

A.20 Unless stated otherwise, the analyses in this report consider the following average alcohol strengths in % ABV:

- Beer: 5%
- Still and sparkling wine: 12%
- Spirits: 40%

A.21 These estimates represent mid-range values for the typical ethanol content for each category, based on the Czech National Monitoring Centre for Drugs and Addiction.[114] This is in line with further evidence on beer,[115] wine[116] and spirits[117] typical alcohol content.

A.22 For the purpose of converting original wort extract ('OWE') in beer into pure ethanol it is assumed that each degree Plato (i.e. 1 OWE) corresponds to 0.4% alcohol content.[118]

113 To avoid double-counting, the on-trade retail downstream indirect effects disregard the output generated via beverages and wholesale sectors.

114 Based on "tabulka 3-1: Obsah etanolu v alkoholických nápojích" from Národní monitorovací středisko pro drogy a závislosti (2024), Zpráva o alkoholu v České republice.

115 Based on Brewers of Europe, Alcohol Percentage In Beer: A Simple Guide, Link: average beer ABV is roughly 4.5%; National Institute on Alcohol Abuse and Alcoholism, What is A Standard Drink?, Link: beer ABV is 5%; based on The economic impact of the spirits sector in Romania (September 2025): beer ABV is 5%.

116 Based on Based on National Institute on Alcohol Abuse and Alcoholism, What is A Standard Drink?, Link: wine ABV is 12%; based on The Champagne Company, Champagne and Prosecco: What's the difference, Link: champagne or prosecco ABV is 12%; based on The economic impact of the spirits sector in Romania (September 2025): wine and sparkling wine ABV are 12%

117 Based on Based on National Institute on Alcohol Abuse and Alcoholism, What is A Standard Drink?, Link: distilled spirits ABV is 40%.

118 Based on Craft Beer & Brewing, "Plato Gravity Scale", Link

Mark-up

A.23 The analyses described in this report are based on the following mark-up assumptions, informed by discussions with UVDL and standard industry practice:

- Wholesale mark-up: 7.5%;[119]
- Off-trade retail mark-up: 30%;[120] and
- On-trade retail mark-ups are based on stylised assumptions to reach observed market price points: 250% for beer,[121] 150% for wine (still and sparkling),[122] and 400% for spirits. [123]

Own-price elasticities

A.24 Price elasticities capture the responsiveness of quantities demanded to a given change in price. They are therefore a crucial set of parameters in translating estimated price impacts into changes in consumption. There are two sets of price elasticities of demand: own-price elasticities, and cross-price elasticities.

A.25 The own-price elasticities used in the modelling are based on academic literature review, including evidence from the Czech Republic,[124] and international benchmarks.[125]

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119 Mid-point of the estimated 5-10% range.

120 Mid-point of the estimated 25-35% range.

121 This results in a similar on-trade retail beer price (72 CZK/L) as per Brewers of Europe Report (~73 CZK/l in 2022).

Source: Brewers of Europe, The Contribution made by Beer to the Economy: Czech Republic. Link: https://brewersofeurope.eu/wp-content/uploads/2024/10/Czech-republic.pdf , accessed March 2026.

122 This results in a similar on-trade retail still wine price (235 CZK/L) as per PAQ research study (250 CZK/l).

Source: PAQ research, Jak na zdanění alkoholu: Komparativní analýza a doporučení reforem Studie ze série Czech Tax Paper. Link: https://www.paqresearch.cz/content/files/2023/10/PAQ_Alkohol_Daneni_Studie.pdf , accessed March 2026.

123 Angleitner et al (2021) account for a 300% catering mark-up in their cross-country analysis of spirits. for the analysis described in this report, this was further increased to 400% to reflect the reality of Czech on-trade retail prices (whilst there is limited evidence of prices as of 2023, current on-trade retail prices are substantially higher than our estimate of ~1100 CZK/l).

Source: Angleitner et al (2021) The economic and ecological footprint of the spirits sector in the EU, the UK, Norway and Switzerland. Link: https://spirits.eu/upload/files/publications/GEN.DOC-026-2021%20IHS%20Economic%20Footprint%20Report%20FINAL2(1).pdf

124 See for example Janda, K., Mikolášek, J. and Netuka, M. (2009) "The Estimation of Complete Almost Ideal Demand System from Czech Household Budget Survey Data"; and Čiderová, T. and Ščasný, M. (2022) "Estimation of alcohol demand elasticity: Consumption of wine, beer, and spirits at home and away from home".

125 See for example Wagenaar et al. (2009), "Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies"; and Nelson, J. (2013) "Meta-analysis of alcohol price and income elasticities – with corrections for publication bias"

A.26 Given the wide range of elasticity estimates reported in the literature, mid-range values[126] were selected as central assumptions. In particular, the analysis draws on own-price elasticities reported in the meta-analysis by Wagenaar et al.[127]

- Beer: -0.46
- Still and sparkling wine:-0.69[128]
- Spirits: -0.80

A.27 As the literature review on cross-price elasticities provided only limited and often inconsistent evidence, cross-price elasticities are not considered in the main analyses described in this report.[129] [130] For sensitivity results with cross-price elasticities, see Section 4.2.[131]

Cross-price elasticities

A.28 The central case results, presented in this report, assume that any increases in the prices of different alcoholic beverage segments only affect demand for that segment. That is, if beer prices increase, the demand for beer goes down but there is no impact on the demand for other segments (spirits, still wine, etc.) In economic terms, it is assumed that the 'cross-price elasticity' between segments is zero.

A.29 Conceptually, it may be expected that cross-price elasticities are positive: if the price of beer increases, all else equal demand for spirits and wine might also increase as some consumers switch between segments.

A.30 Estimating cross-price effects is empirically challenging. The literature review found little consistent evidence, for the Czech Republic or elsewhere, of the

126 This sits between the high-end elasticities are -0.97, -1.09 and -1.21 for beer, wine and spirits as reported by Janda, K., Mikolasek, J. and Neutka, M. (2010) "Complete almost ideal demand system approach to the Czech alcohol demand"; and low-end elasticities of -0.25, -0.3 and -0.27 weighted average for beer, wine and spirits as reported by Bosko, A. (2020) "Price Elasticity of Alcohol Demand: A Meta-Analysis, Master's Thesis".

127 Wagenaar et al., (2009) "Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies".

128 Note that the study does not specify whether the own-price elasticity quoted applies to still wine or sparkling wine. The analyses described in this report assume that the quoted own-price elasticity of wine applies to both, still wine and sparkling wine.

129 See for example Janda, K., Mikolasek, J. and Neutka, M. (2010) "Complete almost ideal demand system approach to the Czech alcohol demand"; Čiderová, T. and Ščasný, M. (2022) "Estimation of alcohol demand elasticity: Consumption of wine, beer, and spirits at home and away from home"; and HMRC (2014) "Estimation of price elasticities of demand for alcohol in the UK".

130 The results of studies often differ not only in terms of the actual size of cross-price elasticity, but also in terms of identifying respective alcoholic beverage segments as substitutes or complements.

131 The approach uses a common substitution elasticity, so that the cross-effect of a price change is proportional to the expenditure share of the product whose price changes.

nature of cross-price elasticities between segments, with different studies finding evidence of positive, negative or insignificant elasticities. This motivated the central analysis assuming no cross-price effects.

A.31 However, the assumptions about these effects are important for the findings. If consumers do indeed switch between segments as relative prices change, the reductions in upstream domestic production, GVA and employment would be smaller and the excise tax gains would increase.

A.32 To account for this, a sensitivity analysis was developed, which allowed for positive cross-price effects. For this sensitivity, a pragmatic, theory-consistent approach was developed, in which categories exert cross-price effects in line with observed market shares. For example, an increase in the price of beer would be expected to have a larger effect on demand for other products than an increase in the price of a smaller category such as sparkling wine.

A.33 The overall framework is a constant elasticity of substitution system. It assumes that products are imperfect substitutes with a common substitution elasticity, so that larger categories exert larger cross-price effects in line with their observed market shares. The approach assumes a common substitution parameter, κ, which is applied to the market shares of the different products. Here, the parameter κ is set to 0.5. This means that the cross-price elasticity for any given product pair is equal to 0.5 multiplied by the market share of the product whose price changes, so that the share-weighted average cross-price response across products is 0.5.

A.34 The overall system is well calibrated to market consensus, so that for example around one third of beer reduction is diverted into spirits.

Table 19 Market-share based cross-price elasticities

To/From	Alcoholic beer	Non-alcoholic beer	Still wine	Sparkling wine	Spirits
Alcoholic beer	-	0.02	0.09	0.03	0.13
Non-alcoholic beer	0.23	-	0.09	0.03	0.13
Still wine	0.23	0.02	-	0.03	0.13
Sparkling wine	0.23	0.02	0.09	-	0.13
Spirits	0.23	0.02	0.09	0.03	-

Source: Frontier Economics.

Other parameters

A.35 The analyses rely on several further parameters, most notably:

- Pass-through rate: the analysis described in this report assumes a complete (i.e. 100%) tax increase pass-through by alcoholic beverages producers.
- Value-added tax ('VAT'): The standard VAT of 21% is assumed to apply to alcoholic beverages.[132]

[132] Based on CZSO.

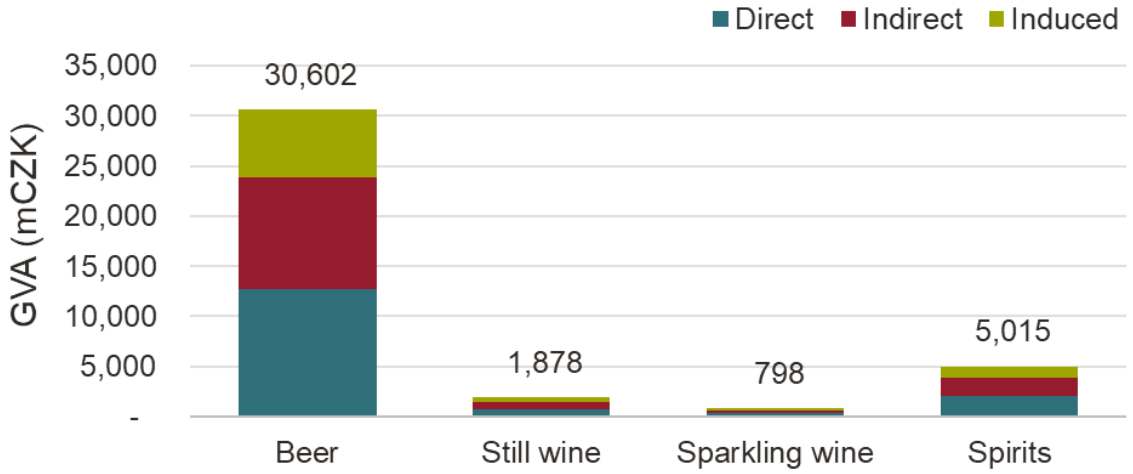
Annex B 2023 economic contribution of the Czech alcoholic beverages

B.1 Economic contribution of alcoholic beverages manufacturing

Gross value added

B.1 In 2023, the spirits segment contributed over CZK 5 billion through GVA, almost twice as much as still and sparkling wine combined. Beer, the largest segment by volume and value of output produced, is the largest contributor, generating a total of over CZK 30 billion in GVA.

Figure 19 Alcoholic beverages' GVA contribution through manufacturing activities, by segment, 2023



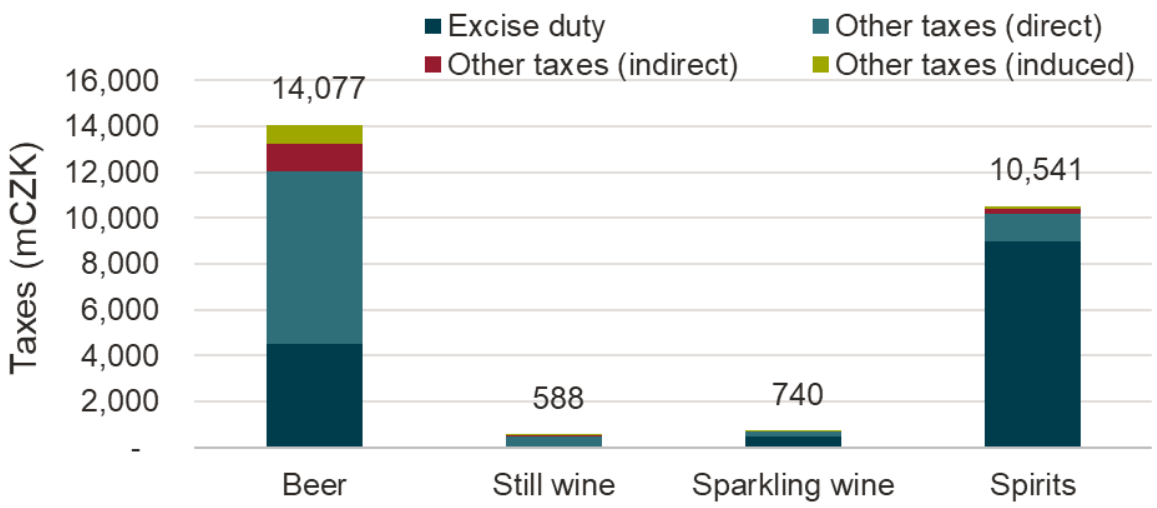
Source: Frontier Economics based on CZSO. See Annex A for more details.

Note: Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments.

Taxes

B.2 The spirits segment contributed over CZK 10 billion via taxes, the majority of which was the direct excise tax. This is almost 8 times as much as still and sparkling wines' respective contributions combined and only 25% less than beer's contribution, despite beer accounting for a substantially larger production volume and value share (see Section 2.1.4).

Figure 20 Alcoholic beverages' tax contribution through manufacturing activities, by segment, 2023



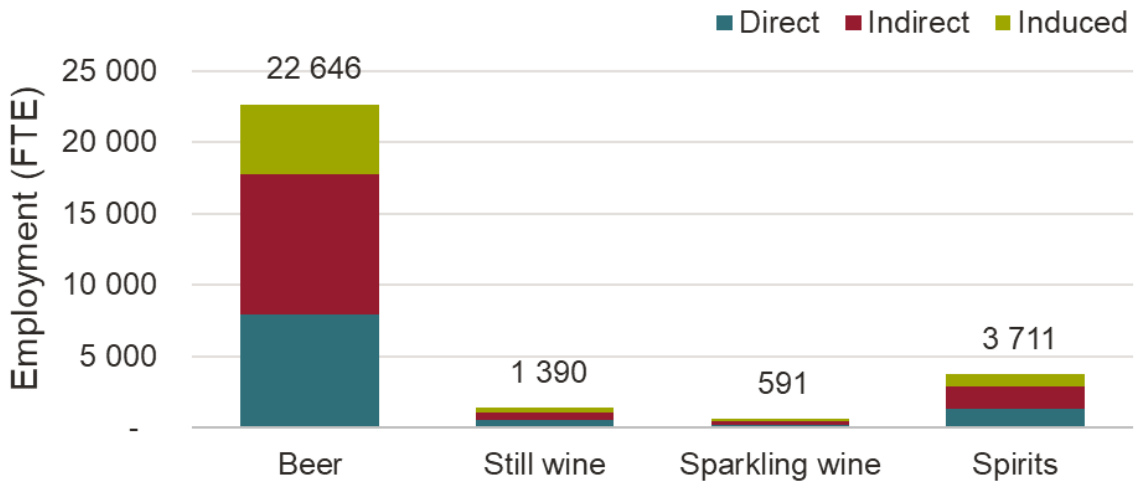
Source: Frontier Economics based on CZSO. See Annex A for more details.

Note: Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments.

Employment

B.3 In addition to GVA and tax contributions, the Czech spirits segment has a notable impact on the Czech labour market. In 2023, the spirits segment supported 3.7k full-time jobs nationally, of which 35% was supported directly via spirits' manufacturing processes.

Figure 21 Alcoholic beverages' employment contribution through manufacturing activities, by segment 2023



Source: Frontier Economics based on CZSO. See Annex A for more details.

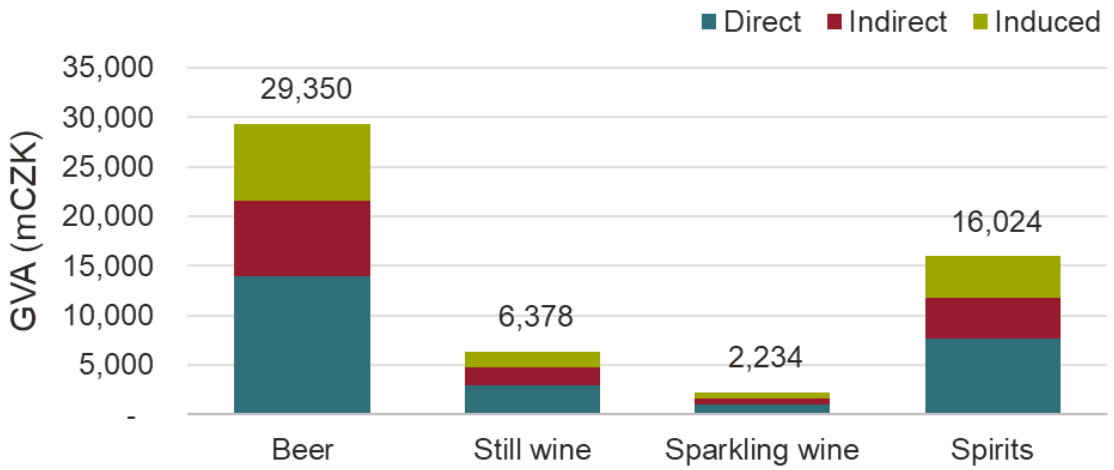
Note: Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments.

B.2 Economic contribution of related downstream activities

Gross value added

B.4 In 2023, the spirits' downstream activities generated more than CZK 16 billion in GVA, nearly double the combined contribution of the downstream activities of still and sparkling wine. Downstream activities related to beer are the largest GVA contributors, reflecting beer's relatively large share of total consumption, with total GVA of almost CZK 30 billion.

Figure 22 Alcoholic beverages' GVA contribution through downstream activities, 2023



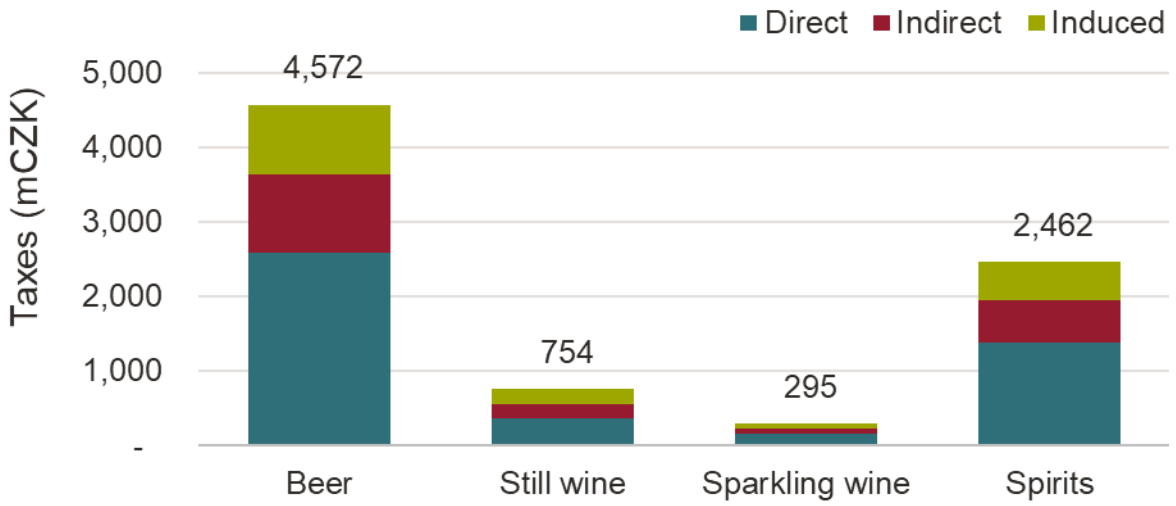
Source: Frontier Economics based on CZSO. See Annex A for more details.

Note: Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments

Taxes

B.5 The downstream activities related to spirits segment almost CZK 2.5 billion in tax revenues, three times the combined contribution of downstream activities related to still and sparkling wine. Downstream activities of beer remained the largest tax contributors, contributing over 50% of the total alcohol-related downstream activities.

Figure 23 Alcoholic beverages' tax contribution through downstream activities, 2023



Source: Frontier Economics based on CZSO. See Annex A for more details.

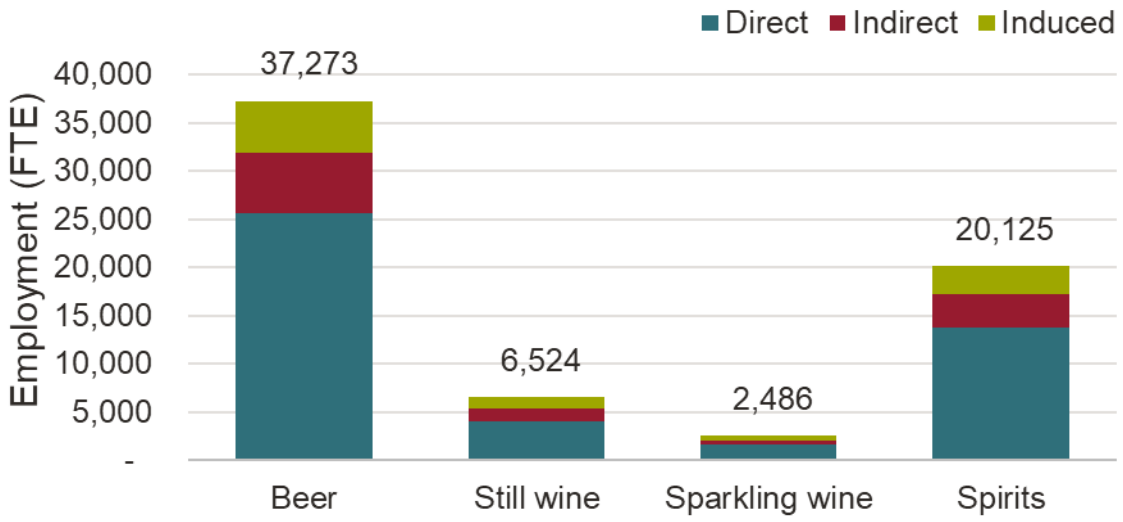
Note: Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcohol segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the alcohol segments

B.6 In addition to the downstream tax contribution associated with the Czech downstream sectors, the alcohol segments' tax contribution also includes VAT collected on the value of imported products, which, although not attributable to any specific downstream Czech economic actor, are considered a relevant contribution to the Czech economy. These amounted to around CZK 122m for beer, CZK 2,088m for still wine, CZK 282m for sparkling wine and CZK 1,714m for spirits.

Employment

B.7 Beyond its contribution to GVA and tax revenues, the Czech spirits-related downstream activities also play an important role in the labour market. In 2023, these activities supported around 20.1 thousand full-time jobs nationwide, equivalent to 30% of the total alcohol-related downstream employment contribution.

Figure 24 Alcoholic beverages' employment contribution through downstream activities, 2023



Source: Frontier Economics based on CZSO. See Annex A for more details.

Note: Latest IO tables for the Czech Republic are from 2022; the multipliers are assumed to have remained unchanged. IO tables do not provide granular information for each respective alcoholic beverage segment. Consequently, the multipliers calculated for the beverage sector are assumed to apply for each of the segments

Annex C Approach to modelling

C.1 As a general point, note that the effects of the considered tax scenarios would differ if firms adjusted producer prices, mark-ups or other sourcing and promotional activity, particularly for large tax changes. The modelling considered in this report holds these factors constant, so as to isolate the first-order demand and fiscal impacts of the tax change. Making pricing, mark-up adjustments, and cost pass-through endogenous would require additional data and assumptions on supply-side behaviour.

C.1 Downstream pricing and mark-up assumptions

C.2 The modelling assumes that downstream mark-ups remain constant in absolute cash terms. The effects of the tax scenario would differ if firms adjusted producer prices, mark-ups or other sourcing and promotional activity, particularly for large tax changes.

C.3 If the downstream sector absorbed some of the tax increase, this would result in smaller consumer price increases and less of a demand-side response. Alternatively, if the downstream sector sought to maintain mark-up in percentage terms, this would imply wider mark-ups in absolute cash terms, larger consumer price increases and more demand-side response.

C.4 In the absence of strong evidence to support either of these downstream pricing behaviours, the assumption of constant mark-up in absolute cash terms is reasonable. This also helps isolate the tax change's first-order demand and fiscal impacts. Making pricing, mark-up adjustments, and cost pass-through endogenous would require additional data and assumptions on supply-side behaviour.

C.2 Approach to GVA, employment and tax effects

Use of multipliers

C.5 Economic multipliers estimate the wider economic effects associated with an activity. They are derived from input-output tables, which map purchases between sectors and show how activity in one sector supports activities elsewhere in the economy.

- **Type I** multipliers capture *direct* and *indirect* effects. Direct effects refer to value added in the main activity (in this case, the manufacture of alcoholic beverages). Indirect effects refer to activity supported further up the supply

chain, as firms buy goods and services from other firms, in turn capturing wider activity.

- **Type II** multipliers additionally capture *induced* effects. Induced effects refer to further activity generated when employees supported by the direct and indirect activity spend their wages in the wider economy. Type II effects are calculated by adding household wage-spending in the input-output model.

C.6 Following the standard approach, output multipliers estimate the total increase in gross output associated with a given increment in sector activity. From these output effects, GVA, employment and tax impacts are derived using sector-specific values per unit of output.

C.7 This gives the following set of impact coefficients per CZK 1 million of beverage manufacturing output. For example, an increase in beverage manufacturing output of CZK 1 million is associated with a direct effect of CZK 0.37 million, an indirect effect of CZK 0.32 million and an induced effect of CZK 0.2 million.

Table 20 Multipliers: increase per CZK 1 million of beverages output

	GVA (mCZK)	Employment (FTE)	Tax contribution (mCZK)
Direct effect	0.37	0.23	0.22
Indirect effect	0.32	0.29	0.04
Induced effect	0.20	0.14	0.02

Source: Frontier Economics (see Annex A for more information on sources)
Note: Example covers upstream (manufacturing) sector only

Direct, indirect and induced effects

C.8 The main scenario results , broken down by direct, indirect and induced effects, are provided in Table 21 below:

Table 21 Breakdown of tax scenario results by direct, indirect and induced effects (upstream segment)

		Delta relative to Baseline results		
	Baseline	Scenario 1	Scenario 2	Scenario 3
GVA (mCZK)				

		Delta relative to Baseline results		
	Baseline	Scenario 1	Scenario 2	Scenario 3
Direct	16,916	-109	-828	-1,498
Indirect	14,667	-94	-718	-1,299
Induced	8,960	-57	-438	-794
Employment (FTE)				
Direct	10,458	-67	-512	-926
Indirect	13,031	-84	-638	-1,154
Induced	6,513	-42	-319	-577
Other tax (mCZK)				
Direct	9,955	-64	-487	-882
Indirect	1,650	-11	-81	-146
Induced	1,081	-7	-53	-96

Source: Frontier Economics
Note: Assumes 100% cost pass-through in absolute cash terms; no cross-price elasticity (no substitution response)

C.9 In addition to the taxes presented in this table, it should be noted that an additional VAT of CZK 193 million under Scenario 1, CZK 1,625 million under Scenario 2 and CZK 3,231 million is estimated to be collected due to the increase in excise duty. These values are reported separately since although higher excise duties may increase the VAT collected on alcohol sales, they may also reduce spending on other goods and services due to demand substitution. The net effect of the additional VAT collected on the increase in excise duty on the overall VAT revenues is therefore uncertain.

Taking into account trade modelling

C.10 In the analysis described in this report, it was assumed that that imports respond proportionately to the overall change in consumption, such that imported and domestically produced beer face the same demand response, while exports are held constant. This is likely to be a conservative assumption. In practice, some of the reduction in domestic consumption would instead be reallocated to export markets through relative price adjustments, with domestic sales being partially reallocated to export markets. This appears plausible given that Czech beer production is already relatively export-oriented, with around 28% exported.

C.11 To test this mechanism, an exploratory trade simulation modelling was conducted, using a single-sector ‘Armington’ model in which domestic trade costs

are shocked and relative prices and trade flows adjust to a new equilibrium. The simulation is carried out using the International Trade and Production Database for Simulation (ITPD-S) dataset from United States International Trade Commission, which has granular data at the sectoral level, including separately splitting out each of beer, wine and spirits. However, some adjustment to the data on domestic production-consumption is required, which in turn affects the quantitative results. The trade simulation results are therefore used to test the possible extent of substitution between domestic sales and exports, and are not intended as an estimate.

C.12 This approach found that 52% of reduced domestic consumption would instead go to export markets. This would imply that the true reduction in GVA would be close to half the size of the modelled result presented here. Economies of scale in the brewery sector would also support this conclusion. That in turn implies that the GVA calculation for upstream effects is likely an upper bound; the actual effects are likely to be smaller.

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