# Appendix

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## Taxation structure by country

This Appendix is based on the following sources unless otherwise specified:

European Commission Directorate-General Taxation and Customs Union. Excise duty tables. 2020 [1]; Statista platform for business data [2], data used for 2020.

Finland**:** Standard rates only

|  |  |  |
| --- | --- | --- |
| **Alcoholic beverage** | **Duty per hectolitre** | **VAT** |
| Beer | 36.50 EUR per °alc per hectolitre | 24% |
| Still wine | 397.00 EUR per hectolitre of the finished product | 24% |
| Ethyl alcohol | 4,880.0 EUR per hectolitre pure alcohol | 24% |

Average % of taxation on the price:

1. Beer

Given an average price of 4.35 EUR per litre beer in 2020[3] and assuming an average alcohol content of 5 Vol% pure alcohol, the proportion of the alcohol tax on the beer price is 41.2%.

Calculation: (36.5 EUR \* 5 °Alc) / (4.35 EUR \* 100) = 0.4195

1. Wine

Given an average price of 27.48 EUR per litre wine in 2020 [3] and assuming an average alcohol content of 12.5 Vol% pure alcohol, the proportion of the alcohol tax on the wine price is 14.5%.

Calculation: 397.0 EUR / (27.48 EUR \* 100) = 0.1445

1. Spirits

Given an average price of 45.80 EUR per litre spirits in 2020 [3] and assuming an average alcohol content of 40 Vol% pure alcohol, the proportion of the alcohol tax on the spirits price is 42.6%.

Calculation: (4,880.0 EUR\* 0.4) / (45.80 EUR\* 100) = 0.4262

Germany**:** Standard rates only (excluding reduced rates for independent small breweries)

|  |  |  |
| --- | --- | --- |
| **Alcoholic beverage** | **Duty** | **VAT** |
| Beer | 0.787 EUR per °Plato per hectolitre | 19% |
| Still wine | 0.00 EUR | 19% |
| Ethyl alcohol | 1,303 EUR per hectolitre pure alcohol) | 19% |

Average % of taxation on the price:

1. Beer

Given an average price of 2.34 EUR per litre beer in 2020 [3] and assuming an average alcohol content of 5 Vol% pure alcohol and an average gravity of 12°Plato, the proportion of the alcohol tax on the beer price is 4.0%.

Calculation: 0.787 EUR \* 12 Plato / (2.34 EUR \* 100) = 0.0404

1. Wine

Excise duty for wine is 0 EUR per hectolitre, thus, there is no tax for wine in Germany.

1. Spirits

Given an average price of 16.47 EUR per litre spirits in 2020 [3] and assuming an average alcohol content of 40 Vol% pure alcohol, the proportion of the alcohol tax on the spirits price is 31.7%.

Calculation: (1,303 EUR \* 0.4) / (16.47 EUR \* 100) = 0.3165

Italy**:** Standard rates only

|  |  |  |
| --- | --- | --- |
| **Alcoholic beverage** | **Duty** | **VAT** |
| Beer | 2.99 EUR per °Plato per hectolitre | 22% |
| Still wine | 0.00 EUR | - |
| Ethyl alcohol | 1,035.52 EUR per hectolitre of pure alcohol | 22% |

Average % of taxation on the price:

1. Beer

Given an average price of 3.34 EUR per litre beer in 2020 [3] and assuming an average alcohol content of 5 Vol% pure alcohol and an average gravity of 12°Plato, the proportion of the alcohol tax on the beer price is 10.7%.

Calculation: 2.99 EUR \* 12 °Plato / (3.34 EUR \* 100) = 0.1074

1. Wine

Excise duty for wine is 0 EUR per hectolitre, thus, there is no tax for wine in Italy.

1. Spirits

Given an average price of 16.85 EUR per litre spirits in 2020 [3] and assuming an average alcohol content of 40 Vol% pure alcohol, the proportion of the alcohol tax on the spirits price is 24.6%.

Calculation: (1,035.52 EUR \* 0.4) / (16.85 EUR \* 100) = 0.2458

Kazakhstan**:**

|  |  |  |
| --- | --- | --- |
| **Alcoholic beverage** | **Duty** | **VAT** |
| Beer | 57 KZT per litre of the finished product | 12% |
| Wines | 35 KZT per litre of the finished product | 12% |
| Alcohol (including vodka) | 2,550 KZT per litre of pure alcohol | 12% |

Exchange course: 1 € = 500 KZH (31/07/2020).

Average % of taxation on the price:

1. Beer

Given an average price of 466 KZT per litre beer in 2020 [4] the proportion of the alcohol tax on the beer price is 12.2%.

Calculation: 57 KZT/466 KZT = 0.122318

1. Wine

Given an average price of 2,593 KZT per litre wine in 2020 [5]and assuming an average alcohol content of 12.5 Vol% pure alcohol in wine, the proportion of the alcohol tax on the wine price is 1.4%.

Calculation: 35 KZT/2,593 KZT = 0.013498

1. Spirits

Given an average price of 2,918 KZT per litre spirits in 2020 [5] and assuming an average alcohol content of 40 Vol% pure alcohol in spirits, the proportion of the alcohol tax on the spirits price is 35.0%.

Calculation: (2,550 KZT \* 0.4) / 2,918 KZT = 0.349554

Sweden**:** Standard rates only

|  |  |  |
| --- | --- | --- |
| **Alcoholic beverage** | **Duty** | **VAT** |
| Beer | 18.6963 EUR °alc per hectolitre | 25% |
| Still wine | 242.3109 EUR per hectolitre of the finished product | 25% |
| Ethyl alcohol | 4,781.3371 EUR per hectolitre of the pure alcohol | 25% |

Average % of taxation on the price:

1. Beer

Given an average price of 5.68 EUR per litre beer in 2020 [3] and assuming an average alcohol content of 5 Vol% pure alcohol, the proportion of the alcohol tax on the beer price is 16.5%.

Calculation: (18.6963 EUR \* 5 °alc) / (5.68 EUR \* 100) = 0.1646

1. Wine

Given an average price of 23.25 EUR per litre wine in 2020 [3]and assuming an average alcohol content of 12.5 Vol% pure alcohol, the proportion of the alcohol tax on the wine price is 10.4%.

Calculation: 242.3109 EUR / (23.25 EUR \* 100) = 0.1042

1. Spirits

Given an average price of 65.67 EUR per litre spirits in 2020 [3] and assuming an average alcohol content of 40 Vol% pure alcohol, the proportion of the alcohol tax on the spirits price is 29.1%.

Calculation: (4,781.3371 EUR \* 0.4) / (65.67 EUR \* 100) = 0.2912

### **Table A1:** Alcohol use indicators for 2008

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **Alcohol *per capita* consumption (APC) \*** | | | | | | | **Percentage of current drinkers in the population** | | | | **Percentage of heavy drinkers (men > 60g/day; women > 40g/day) in the population** | | |
| **Beer** | **Wine** | | **Spirits** | | **Total** | | **Women** | | **Men** | **Total** | **Women** | **Men** | **Total** |
| Germany | 6.35 | | 3.24 | | 2.16 | | 13.26 | | 74.51% | 87.91% | 81.02% | 9.74% | 21.24% | 15.33% |
| Italy | 1.47 | | 4.65 | | 0.72 | | 7.23 | | 63.88% | 81.75% | 72.48% | 3.04% | 11.19% | 6.97% |
| Kazakhstan | 2.81 | | 0.29 | | 4.33 | | 10.30 | | 38.90% | 58.99% | 48.37% | 7.25% | 16.37% | 11.55% |
| Sweden | 2.60 | | 3.10 | | 1.10 | | 9.22 | | 68.43% | 83.95% | 76.09% | 5.14% | 14.77% | 9.89% |

\* The APC of beer, wine and spirits do not add up to total APC as beverage type is only known for recorded consumption.

### **Table A2:** Alcohol indicators for each different taxation scenario

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **Taxation** | **Alcohol *per capita* consumption (APC) \*** | | | | | | | **Percentage of current drinkers in the population** | | | | **Percentage of heavy drinkers (men > 60g/day; women > 40g/day) in the population** | | |
| **Beer** | **Wine** | | **Spirits** | | **Total** | | **Women** | | **Men** | **Total** | **Women** | **Men** | **Total** |
| Germany | +20% | 6.33 | | 3.23 | | 2.06 | | 13.14 | | 74.51% | 87.91% | 81.02% | 9.70% | 21.05% | 15.22% |
| Germany | +50% | 6.31 | | 3.21 | | 1.91 | | 12.97 | | 74.51% | 87.91% | 81.02% | 9.47% | 20.83% | 14.99% |
| Germany | +100% | 6.27 | | 3.18 | | 1.67 | | 12.68 | | 74.51% | 87.91% | 81.02% | 9.08% | 20.47% | 14.61% |
| Germany | Finnish  Taxation | 5.60 | | 3.04 | | 1.99 | | 11.78 | | 74.51% | 87.91% | 81.02% | 8.08% | 19.16% | 13.47% |
| Italy | +20% | 1.45 | | 4.62 | | 0.69 | | 7.15 | | 63.88% | 81.75% | 72.48% | 3.03% | 11.11% | 6.92% |
| Italy | +50% | 1.43 | | 4.57 | | 0.64 | | 7.04 | | 63.88% | 81.75% | 72.48% | 2.89% | 10.84% | 6.72% |
| Italy | +100% | 1.39 | | 4.48 | | 0.56 | | 6.84 | | 63.88% | 81.75% | 72.48% | 2.66% | 10.40% | 6.39% |
| Italy | Finnish  Taxation | 1.25 | | 4.43 | | 0.60 | | 6.56 | | 63.88% | 81.75% | 72.48% | 2.41% | 9.73% | 5.93% |
| Kazakhstan | +20% | 2.78 | | 0.29 | | 4.24 | | 10.18 | | 38.90% | 58.99% | 48.37% | 7.23% | 16.38% | 11.55% |
| Kazakhstan | +50% | 2.74 | | 0.29 | | 4.09 | | 9.99 | | 38.90% | 58.99% | 48.37% | 7.06% | 16.19% | 11.37% |
| Kazakhstan | +100% | 2.67 | | 0.29 | | 3.86 | | 9.68 | | 38.90% | 58.99% | 48.37% | 6.77% | 15.87% | 11.06% |
| Kazakhstan | Finnish  Taxation | 2.48 | | 0.27 | | 4.23 | | 9.44 | | 38.90% | 58.99% | 48.37% | 6.58% | 15.59% | 10.82% |
| Sweden | +20% | 2.56 | | 3.05 | | 1.08 | | 9.07 | | 68.43% | 83.95% | 76.09% | 5.04% | 14.55% | 9.74% |
| Sweden | +50% | 2.50 | | 2.97 | | 1.05 | | 8.84 | | 68.43% | 83.95% | 76.09% | 4.74% | 14.13% | 9.38% |
| Sweden | +100% | 2.40 | | 2.83 | | 1.00 | | 8.47 | | 68.43% | 83.95% | 76.09% | 4.27% | 13.41% | 8.78% |
| Sweden | Finnish  Taxation | 2.30 | | 3.00 | | 1.05 | | 8.49 | | 68.43% | 83.95% | 76.09% | 4.36% | 13.43% | 8.84% |

\* The APC of beer , wine and spirits do not add up to total APC, as beverage type is only known for recorded consumption.

### **Table A3:** Number of incident cancer cases which could have been averted in 2018 in each country for each different taxation scenario

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | **Increasing the excise duties by 20%** | **Increasing the excise duties by 50%** | **Increasing the excise duties by 100%** |
| Germany | 132 (114-158) | 334 (277-398) | 673 (560-807) |
| Italy | 95 (81-110) | 238 (204-276) | 480 (410-556) |
| Kazakhstan | 12  (9-15) | 29 (24-38) | 59 (47-77) |
| Sweden | 20 (17-23) | 49 (42-59) | 100 (85-120) |

### **Table A4:** Proportion of incident cancer cases averted in 2018 in each country for different increases in excise duties applying the Finnish taxation rates (see Table 5 for baseline results)

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | **% Alcohol-attributable cancer cases averted** | | |
| **Increasing current excise duties by 20%** | **Increasing current excise duties by 50%** | **Increasing current excise duties by 100%** |
| Germany | 1.98  (1.65-2.34) | 5.06  (4.19-5.99) | 10.47  (8.64-12.46) |
| Italy | 2.22  (1.88-2.52) | 5.60  (4.74-6.36) | 11.42  (9.65-12.97) |
| Kazakhstan | 1.64  (1.34-2.01) | 4.21  (3.42-5.17) | 8.75  (7.06-10.84) |
| Sweden | 2.67  (2.29-3.13) | 6.76  (5.80-7.95) | 13.83  (11.86-16.26) |

\* The proportion here denotes the cases averted of all cancers from the following categories: lip and oral cavity, oropharynx, oesophagus, colon and rectum, liver, female breast, and larynx cancer.

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