

ECONOMIC EFFECTS OF HIGH EXCISE DUTIES ON BEER



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ECONOMIC EFFECTS OF HIGH EXCISE DUTIES ON BEER

- Final Report -

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EXECUTIVE SUMMARY

Regioplan Policy Research and EY joined forces to carry out a study focusing on the economic impact of high excise duties and/or the changes in excise duty implemented by national governments.

Key messages

- **Analysis of increases in excise duty in the EU (2008-2012) shows that high excise duty rates (such as the ones in the Nordic countries) impact negatively on the economy. In addition to negative effects on employment, excise duty increases also ultimately failed to bring about a proportional increase in total beer-generated government revenues. In eight of the seventeen countries in which an excise duty increase was implemented (16 EU countries and Norway) beer-generated government revenues even decreased.**
- **Both member states operating with lower levels of taxation and consumers benefit from the free movement of goods within the EU allowing consumers to choose where they buy goods from. However for those member states that choose to apply with high rates of taxation - such as the Nordic Members States – there are clear consequences in relation to loss of sales, revenues and jobs.**
- **As a result of the high excise duty rates on beer, 52.7% of the consumers from the Nordic countries purchase beer abroad, amounting to 328.4 million litres (worth 1.0 billion euros) annually. This results in:**
 - a direct loss of VAT and excise duty revenues of approximately 545 million euros;
 - around 2,590 fewer beer-generated jobs in the retail sector alone and consequently a loss of 42 million euros in income tax and social contribution revenues;
 - an approximately 2.0 billion euros spend on other products when travelling abroad to buy beer, resulting in a total loss of 406 million euros in VAT revenue;
 - taking into account the economic effects mentioned above, cross-border shopping for beer can account for a total loss of government revenues amounting to 1.0 billion euros;
 - buying beer is often a traffic builder prompting the purchase of other products abroad. For every euro that is not spent on beer in Nordic retail outlets (due to cross-border shopping for beer), consumers also spend 2.01 euros on other products abroad;
 - an additional 4.3 billion kilometres travelled by car, resulting in approximately 791,800 tonnes of additional CO₂ emissions. There will also be significant CO₂ emission resulting from the use of other means of transport.

The excise duty rates applicable to beer in Denmark, Finland, Norway and Sweden are among the highest in Europe. Our study shows that the high

excise duty rates in these countries, and the large tax differentials with neighbouring countries in particular, have negative economic consequences.

Increasing excise duty has a negative impact on the economy

High excise duty rates lead to higher consumer prices, causing sales volumes to come under pressure. This, in turn, has negative consequences for beer-generated jobs and government revenues. This mechanism becomes clearly apparent when one looks at excise duty increases in the EU (including the Nordic countries) as well as Norway in the period 2008-2012. In most countries in which the excise duty on beer was increased, beer-generated employment decreased. In 8 of the 17 countries where an excise increase took place in the period between 2008 and 2012, there was even a decrease in total beer-generated government revenues.

High volumes of cross-border shopping for beer

High excise duty rates lead consumers to buy beer abroad because of the lower beer prices there. Due to high excise duty rates and restrictive policies with regard to retail sales, cross-border shopping is a significant phenomenon with a high impact on economy and society in the Nordic countries. 52.7% of all Nordic beer consumers bought beer across the border between June 2013 and June 2014.¹ Inhabitants of the Nordic countries purchase 328.4 million litres of beer outside national borders annually. It should be noted that this figure only indicates the loss caused by legal cross-border shopping by consumers. If the loss caused by illegal trade were to be included as well, the figure would be higher still.

Cross-border shopping negatively impacts on economies and environment

Cross-border shopping causes substantial harm to national economies and the environment. When people decide to purchase beer abroad, this of course results in a decline in domestic beer sales. The loss of VAT and excise duty revenues arising directly from cross-border shopping for beer amounts to approximately 545 million euros. In addition to this, cross-border shopping for beer leads to around 2,590 fewer beer-generated jobs in the retail sector and, consequently, a loss of 42 million euros in income tax and social contribution revenues for the governments of the four Nordic countries. Furthermore, we estimate that Nordic consumers spend approximately 2.0 billion euros in total on other products when they travel abroad to buy beer, resulting in a total loss of 512 million euros in VAT revenue. In addition to the negative economic effects of cross-border shopping for beer, the phenomenon has a seriously negative impact on the environment. We estimate the total additional CO₂ emissions resulting from the extra kilometres travelled for cross-border

¹This figure represents consumers that purchase beer abroad themselves and/or let someone else purchase beer abroad on their behalf. It should be noted that the sample for Denmark contained residents from all Danish regions. In the other Nordic countries examined, regions more distant from national borders were excluded. (See Annex I)

shopping (4.3 billion kilometres by car alone) to be approximately 791,800 tonnes.

It should be noted that the figures presented above are minimum figures for beer sales across the Nordic borders, since the study does not cover the Nordic countries in their entirety: parts of Norway, Sweden and Finland were not included in the survey. Furthermore, the figures only pertain to legitimate cross-border shopping by consumers; the illegal trade in beer is not included.

Illegal trade in the Nordic countries

In line with the principles of the internal market, consumers are allowed to buy beer abroad in limited amounts without having to pay import tax. This also applies to high value products such as tobacco, spirits and wine. However, high rates of taxation for beer and high value products may also encourage consumers to explore more affordable options including illegal trade. Even though the high value products are more obvious targets for illegal trade than high volume products such as beer.

Price differences between countries also result in illegal trading activities for beer. This mainly applies to the across-the-border purchase of large amounts of beer (exceeding the admissible quantities) for domestic use or with the purpose of selling it on to consumers in the home country. Publications by both governmental authorities and the academic community point out that illegal trade in alcoholic beverages has many negative consequences including detrimental economic effects and health issues related to its availability to under-aged persons.²

² Under-aged refers to those people under the legal purchasing age for consuming alcohol in the concerned countries.



1 INTRODUCTION

The production and consumption of beer has great economic significance in the EU. Most importantly, it creates jobs – not just those in the approximately 4,500 (2012) small and large brewing companies based in the EU, but also in the supply, retail and hospitality sectors. In 2012 the work of some two million EU citizens was directly or indirectly related to beer. The governments in the Member States also enjoy considerable benefits. Every beer consumed generates tax, VAT and excise duty revenues, and the jobs created bring in income tax and social security contributions. Some 53 billion euros were generated by taxes and social security contributions related to beer production and consumption in the EU in 2012.¹

Excise duties are an important source of revenue for national governments. In 2012, excise duty revenue accounted for 19% of total beer-generated government revenue in the EU.² To be more precise, it was estimated to be as much as approximately 10 billion euros in 2012. Within the EU there are significant differences between excise duty rates on beer in the various Member States, resulting in differing tax burdens on beer. Excise duty in the Nordic Member States (Denmark, Finland and Sweden) is among the highest in the EU; Norway, too, has a high excise duty on beer. It is also important to note that since January 2008, the vast majority of EU Member States have changed the excise duty levied on beer – in most cases, it was increased.

It is expected that continuing increases in the already-high excise duties will negatively impact national economies and potentially reduce government revenues. Regioplan Policy Research and EY conducted a study to look into these effects.

1.1 Scope

In our study we assessed the economic effects of high excise duty rates in the Nordic countries and put the economic effects of high excise duties into an EU-wide perspective. The effects assessed include, inter alia, the impact of excise duty policies on government revenue (not only excise duty revenue, but also VAT and employment-related revenues).

¹Berkhout, B, L. Bertling, Y. Bleeker, W. de Wit, G. Kruis, R. Stokkel, R. Theuws (2013) *The Contribution Made by Beer to the European Economy – EU Report*, Regioplan Policy Research and EY, Amsterdam.

²Excise duty revenue amounted to 10 billion euros, while total government revenue from the production and sales of beer was 53 billion euros. (Source: Calculations by Regioplan)

1.2 Research activities

The results presented in this report are derived from multiple research activities. These activities are:

Consumer survey

To measure the extent and frequency of cross-border shopping, we conducted an online consumer survey of beer consumers in Denmark, Finland, Norway and Sweden. The survey was carried out by Ipsos Interactive Services among 3,200 consumers aged 18 and over within their representative consumer panel. In Denmark, a relatively small country, the questionnaire was completed by consumers from all over the country. For Finland, Norway and Sweden, only consumers living in regions relatively close to the border were selected. Those regions which were selected are listed in Annex I.

For the respondents' convenience, the final version of the questionnaire was made available in the different national languages of the four Nordic countries. The survey was conducted in July 2014 and contained questions pertaining to purchases made between June 2013 and June 2014.

Economic database analysis

As a result of the economic impact studies conducted by Regioplan and EY for The Brewers of Europe in recent years³, we have developed an elaborate database with detailed economic statistics on many European beer markets including all 28 EU Member States and Norway. This database was the starting point for our calculations of the economic effects of excise duty policies on beer.

Desk study and expert interviews

To expand our knowledge of the Nordic beer markets and to place our findings in a broader perspective, we interviewed four experts from the respective countries:

- Denmark: Jan Bentzen (Professor at Aarhus University);
- Norway: Thomas Angell (Director of Trade at Virke)
- Sweden: Carl Eckerdal (Chief Economist at the Swedish Food Federation)
- Finland: Pasi Holm (Managing Director of Pellervon Economic Research)

Carl Eckerdal and Thomas Angell are experts from within the food and beverage sector, and Jan Bentzen and Pasi Holm study border trade from an academic point of view. In addition, the national brewing associations from the four Nordic countries provided us with valuable input on their markets, and we also studied relevant public reports and documents on cross-border shopping, illegal trade and the Nordic beer market.

³ EY/Regioplan (2007-2013) *The Contribution Made by Beer to the EU Economy*.

1.3 Structure of the report

In chapter 2 we will discuss cross-border shopping in Denmark, Finland, Norway and Sweden. Attention will be given to the extent to which cross-border shopping is a phenomenon in these countries and to the economic effects of cross-border shopping, such as loss of excise duty revenue and employment. Illegal shopping abroad is also addressed in this chapter. In the final chapter we will discuss the economic impact of changes in excise duties on the national brewing sectors in the EU and Norway in recent years.



2 IMPLICATIONS OF HIGH EXCISE DUTY ON BEER

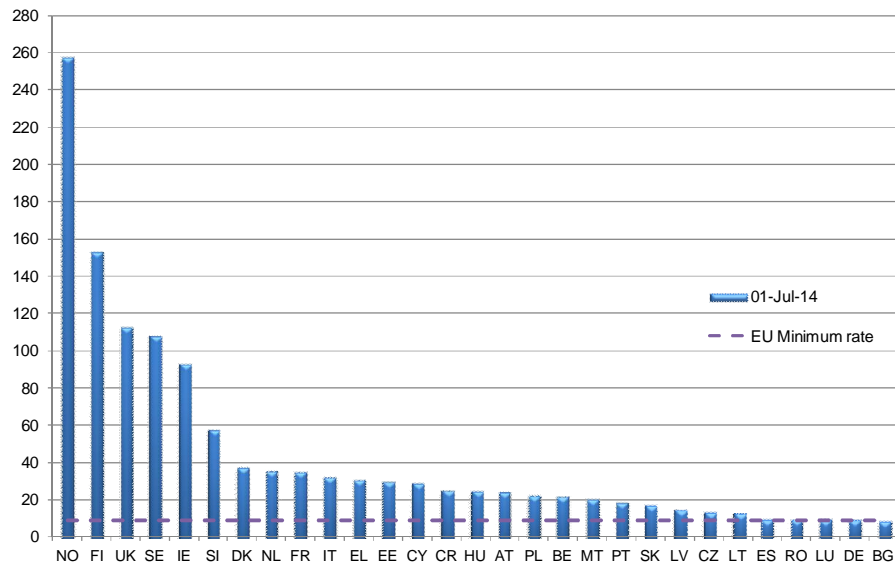
Highlights

- As a result of high excise duty rates on beer, many Nordic consumers purchase beer abroad. A total of 52.7% of Nordic beer consumers bought beer outside the national borders between June 2013 and June 2014 (this figure includes consumers who let someone else purchase beer abroad on their behalf).
- Inhabitants of the Nordic countries purchase 328.4 million litres of beer (worth 1.0 billion euros) outside national borders annually.
- The loss of VAT and excise duty revenues arising directly from cross-border shopping for beer amounts to approximately 545 million euros in the Nordic countries.
- In addition, cross-border shopping for beer leads to at least 2,590 fewer beer-generated jobs in the retail sector alone and, consequently, a loss of 42 million euros in income tax and social contribution revenues for the governments of the four Nordic countries, as well as significant losses in other industries.
- We estimate that Nordic consumers spend approximately 2.0 billion euros in total on other products when they travel abroad to buy beer, resulting in a total loss of 406 million euros in VAT revenue.
- Taking into account the effects mentioned previously, these trips result in a total loss of government revenues amounting to 1.0 billion euros.
- In addition to the negative economic effects of cross-border shopping for beer, the phenomenon has a seriously negative impact on the environment. We estimate the total additional CO₂ emissions resulting from the extra 4.3 billion kilometres travelled by car with the purpose of cross-border shopping to be approximately 791,800 tonnes. There will also be significant CO₂ emissions resulting from the use of other means of transport.

2.1 Cross-border trade

The EU has set a minimum excise duty rate for beer. However, Member States are free to set their own excise duty rates equal to or at a higher level than the minimum rate. Consequently, there are significant differences in the excise duty rates on beer in the various Member States (see Figure 2.1).

Figure 2.1 Excise duty rates per hectolitre of beer in euros (12 degrees Plato, 4.8% alcohol) in the EU Member States and Norway on 1 July 2014.



Source: European Commission and The Brewers of Europe (situation as of July 2014)

A fundamental tax principle that applies to cross-border trade in the EU is that taxes and excise duties should be paid in the country where the product is bought and that the end consumer should not have to pay additional taxes if they take the product to another country. It should be noted that this applies to goods bought in person by the consumer up to a certain amount and not to online purchases. It follows from this that the large differences between European countries in the excise duty levied on beer, as mentioned above, lead to cross-border shopping. It is consumers from countries with relatively high excise duty rates compared to their neighbours who buy beer abroad most. This impact of high levels of taxes on cross-border trade is commonly accepted and has been described in many publications (Lavik & Nordlund, 2009¹; Bentzen, 2013²).

The EU's internal market promotes the free movement of goods, capital, services and people, among other things so that private persons can shop abroad. Cross-border trade can be described as any purchases made by consumers from sellers or providers located in a country other than the one in which they themselves are resident; purchases can be made when travelling abroad or through distance sales channels (European Commission, 2012³). In

¹Lavik, R., S. Nordlund (2009) "Norway at the border of EU – cross-border shopping and its implications". *Nordic Studies on Alcohol and Drugs* (26), 205-231.

²Bentzen, J. (2013) *Cross-Border Trade 2013: Effects on Revenues Given a 50 per cent Reduction of Excise Duties on Beer and Soft Drinks*.

³European Commission (2012) Consumer attitude towards cross border trade and consumer protection. Flash Eurobarometer 294.

line with the principles of the internal market, consumers are allowed to buy beer abroad in limited amounts without having to pay import tax, excise duty or VAT in their home countries.

Box 2.1 Retail systems

The Nordic beer markets not only differ from other European countries in their relatively high excise duty rates, but also in their restrictive policies with regard to retail sales of alcoholic beverages

In Sweden, beer and other alcoholic beverages containing more than 3.5% alcohol cannot be sold in regular stores. Beer, cider, wine and spirits containing more than 3.5% alcohol can only be purchased through the monopoly Systembolaget. In Norway and Finland, sales of beer (and other alcoholic beverages) containing more than 4.75% and 4.7% respectively are restricted to a monopoly. In Denmark there are no such restrictions.

2.1.1 Extent of Nordic cross-border shopping for beer

Our consumer survey shows that 52.7% of Nordic consumers purchase beer abroad themselves and/or let someone else purchase beer abroad on their behalf. It reveals that almost 63% of all Norwegian beer consumers aged 18 and above buy beer outside national borders (see Figure 2.2). In Finland (50.8%), Denmark (49.8%)⁴ and Sweden (47.5%), too, a significant percentage of beer consumers occasionally buy beer abroad.

Figure 2.2 Have you (or someone else within your household) bought beer abroad in the last twelve months?

	Country				
	Denmark (n=802)	Finland (n=800)	Norway (n=800)	Sweden (n=800)	Total (n=3202)
No	50.2%	49.2%	37.2%	52.5%	47.3%
Yes ⁵	49.8%	50.8%	62.8%	47.5%	52.7%

Source: Consumer survey by Regioplan/Ipsos (2014)

Based on the outcomes of the survey we estimate that inhabitants of the Nordic countries purchase at least 328.4 million litres of beer outside national

⁴It should be noted that the sample for Denmark contained residents from all Danish regions. In the other Nordic countries examined, regions more distant from national borders were excluded (see Annex I).

⁵Including respondents who let someone else (for example a friend or relative) purchase beer abroad on their behalf.

borders annually (see Annex III). By means of comparison, this is more than the total beer consumption in Norway in 2012 (280.0 million litres).⁶

Figure 2.3 presents detailed information about the frequency with which Nordic consumers purchase beer across the border. 52.7% purchase beer abroad at least once a year and more than 21% purchase beer abroad more than 3 times a year. Due to the import restrictions applying in Norway, Norwegian consumers purchase beer abroad even more often. Cross-border shopping for beer by Nordic consumers results in an additional 4.3 billion kilometres travelled by car.

Figure 2.3 Approximately how many times have you (or someone else within your household) bought beer abroad in the past twelve months (including purchases made abroad by someone else on your behalf)?

Number of times	Country				Total (n=3202)
	Denmark (n=802)	Finland (n=800)	Norway (n=800)	Sweden (n=800)	
0 times	50.3%	49.2%	37.3%	52.5%	47.3%
1 time	14.4%	17.1%	10.5%	19.6%	15.4%
2 times	17.3%	15.5%	16.4%	14.8%	16.0%
3 times	6.3%	6.5%	9.6%	4.4%	6.7%
4 times	4.5%	3.6%	6.5%	3.6%	4.6%
5 to 9 times	5.1%	4.2%	10.4%	3.8%	5.9%
10 times or more	2.1%	3.9%	9.3%	1.4%	4.1%
Total	100%	100%	100%	100%	100%

Source: Consumer survey by Regioplan/Ipsos (2014)

2.1.2 Countries where cross-border shopping takes place

A large proportion of cross-border shopping for beer by Nordic consumers takes place in Germany (40.7%), as well as on boats and ferries, primarily those en route to Estonia (24.1%). The differences in excise duty rates between the Nordic countries and their neighbours have led to the establishment of (alcohol) shops just across the border and on ferries. Originally, these border shops were based on selling alcoholic beverages. However, their product range has since been extended.

2.1.3 Reasons behind purchasing beer abroad

High excise duties definitely play a crucial role in explaining cross-border purchases. It can be concluded from the literature (Lavik & Nordlund, 2009⁷)

⁶Berkhout, B, L. Bertling, Y. Bleeker, W. de Wit, G. Kruis, R. Stokkel, R. Theuws (2013) *The Contribution Made by Beer to the European Economy – EU Report*, Regioplan Policy Research and EY, Amsterdam.

⁷Lavik, R., S. Nordlund (2009) "Norway at the border of EU – cross-border shopping and its implications". *Nordic Studies on Alcohol and Drugs*, (26), 205-231.

and interviews conducted with experts on this topic that high excise duty rates lead to differences in beer prices in comparison with neighbouring countries and consequently result in intensive and frequent cross-border shopping.

As mentioned earlier, price differences (resulting from differences in the excise duty levied) are the pivotal reason to shop for beer across the border. This is underlined by the results of our questionnaire. As can be seen in Figure 2.4, nearly 80% of the respondents in Denmark, Finland, Norway and Sweden consider lower prices a reason for buying beer abroad. Other reasons mentioned are the fact that shops abroad sell more types of beer and that consumers – especially those from Denmark and Norway – buy other items there as well.

Figure 2.4 Why do you (or someone else within your household) buy beer abroad?

	Country				Total (n=1690)
	Denmark (n=401)	Finland (n=407)	Norway (n=502)	Sweden (n=380)	
Beer is cheaper there	82.1%	85.9%	73.6%	76.8%	79.3%
There are more types of beer available	10.1%	31.8%	34.5%	20.0%	24.8%
Shopping is more comfortable there	2.8%	7.8%	5.2%	5.5%	5.3%
I buy other groceries there	28.2%	13.3%	40.8%	10.5%	24.4%
Other	22.9%	10.5%	16.8%	21.3%	17.7%

Source: Consumer survey by Regioplan/Ipsos (2014)

2.2 Employment

Obviously, the extent of cross-border shopping estimated for the four Nordic countries as presented in the previous sections has an impact on the national economies of these countries. Cross-border shopping naturally reduces domestic sales of beer. This in turn has an economic impact on the brewing sector in these countries.

We have made an estimate as to the negative impact on employment in the retail sector.⁸ The lower national consumption of beer leads to at least 2,590 fewer beer-generated jobs in the retail sector in the four Nordic countries. The negative impact is most noticeable in Sweden.

It should be noted that retail is not the only sector that is affected negatively by cross-border shopping for beer. In other sectors, too – such as the brewing sector itself and those which supply it – there is a negative impact on

⁸The loss of employment is calculated by dividing the reduction in retail turnover (see Annex III) by the average turnover per employee in the retail sectors in the respective countries (Eurostat 2014).

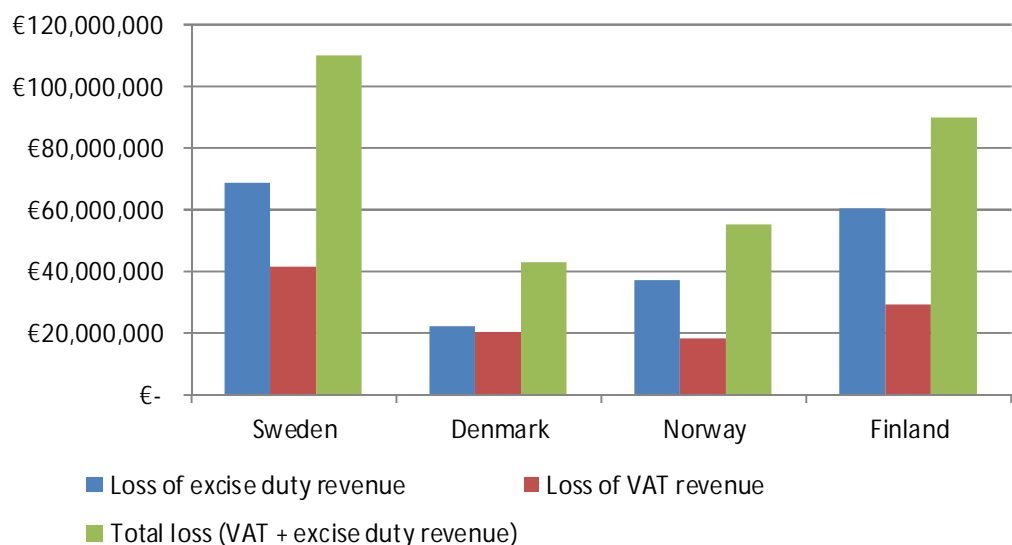
employment. This means that in addition to the 2,590 retail jobs that are lost, there are also fewer beer-generated jobs in other sectors.

In interviews with experts, the effect of cross-border trade on the retail sector is also acknowledged. Moreover, the interviews suggest that cross-border trade affects the entire structure of the retail sector. For example, cross-border trade affects retail near the border, leaving little scope for small-scale shop selling regional products and local beers. This means that cross-border trade negatively impacts on the number of retail outlets and associated jobs, as well as restricts the range of products offered.

2.3 Loss of government revenues

For the governments of Denmark, Finland, Norway and Sweden, we also calculated the loss of VAT and excise duty revenues arising from legal cross-border shopping for beer by the inhabitants of these countries. We calculated this loss of revenues from beer to be approximately 545 million euros for the four countries together. The results of these calculations for the four countries are presented in Figure 2.5. Insight into the full calculation is given in Annex III of this report. In addition to the loss of VAT and excise duty revenues, it is important to note that, as a result of the loss of jobs in the retail sector, beer also generates less income tax and social contributions revenue for the governments of the four Nordic countries. We estimate the extent of this effect to be 42 million euros. It should be noted that this only includes the loss arising from legal cross-border shopping by consumers. If the loss caused by illegal trade were to be included as well, this figure would be even higher.

Figure 2.5 Loss of VAT and excise duty revenues incurred by national governments



Source: Calculations by Regioplan Policy Research.

2.4 Beer, a traffic builder for purchasing other products abroad

Our consumer survey shows that cross-border shopping by inhabitants of Denmark, Finland, Norway and Sweden is not just limited to buying beer. In fact, our study shows that buying beer is often a traffic builder prompting the purchase of other products abroad. Assuming that consumers spend approximately 150 euros (weighted average based on Figure 2.6) on other products whenever they travel abroad to buy beer, we estimate that this effect accounts for a total turnover of about 2.0 billion euros. This means that for every euro that is not spent on beer in Nordic retail outlets (due to cross-border shopping), consumers also spend 2.01 euros on other products abroad. This also results in VAT losses for the governments of the four Nordic countries. We calculated these losses to be 406 million euros for the four countries annually.

Figure 2.6 How much do you (or someone else within your household) spend on average on other goods –for example groceries or services – when buying beer abroad?

	Country				
	Denmark (n=401)	Finland (n=407)	Norway (n=502)	Sweden (n=380)	Total (n=1690)
Less than 50 euros	19.2%	17.2%	16.9%	26.1%	19.6%
50-100 euros	25.9%	31.6%	19.9%	24.2%	25.1%
100-200 euros	28.4%	30.1%	34.2%	18.2%	28.3%
200-500 euros	20.2%	15.7%	23.7%	17.1%	19.4%
More than 500 euros	3.0%	2.9%	3.8%	5.3%	3.7%
I do not purchase any other goods when I am buying beer abroad	3.2%	2.5%	1.6%	9.2%	3.9%
Total	100%	100%	100%	100%	100%

Source: Consumer survey by Regioplan/Ipsos (2014)

2.5 Environmental impact

In addition to the negative economic impact of cross-border shopping for beer, the phenomenon has a seriously negative impact on the environment. Our consumer survey reveals that, especially in Denmark, people who buy beer abroad mainly travel by car (see Figure 2.7).

Figure 2.7 How do you (or someone else within your household) travel when you go abroad to buy beer? (multiple answers possible)

	Country				
	Denmark (n=401)	Finland (n=407)	Norway (n=502)	Sweden (n=380)	Total (n=1690)
By car	90.3%	36.4%	75.3%	57.9%	65.6%
By ferry	14.3%	71.4%	25.9%	47.1%	38.9%
By train/bus	3.7%	13.1%	3.2%	14.5%	8.3%
Riding along with someone else	6.6%	6.1%	4.9%	3.4%	5.3%
Other	6.4%	11.9%	26.4%	13.2%	15.2%

Source: Consumer survey by Regioplan/Ipsos (2014)

On average, these trips add up to a total of 461 kilometres. By means of comparison, people buying beer in their own country only travel 21 kilometres in total. Obviously, the extra kilometres driven by consumers in order to buy beer abroad have an adverse environmental effect. We estimate the total number of additional kilometres travelled for cross-border shopping to be about 4.3 billion a year⁹. Assuming average CO₂ emissions of 184 grams per kilometre (ING, 2013)¹⁰, total additional CO₂ emissions amount to approximately 791,800 tonnes. This is equivalent to approximately two-thirds of the total annual CO₂ emissions of Oslo.¹¹ The figure only includes the additional CO₂ emissions from cars. Because emissions from boats and other means of transportation are not included in our calculation, total additional CO₂ emissions will be even higher than 791,800 tonnes.

2.6 Illegal trade

Cross-border shopping for beer for domestic consumption is legal in limited amounts. This also applies to high value products such as tobacco, spirits and wine. However, high rates of taxation for beer and high value products may also encourage customers to explore more affordable options including illegal trade. Even though the high value objects are more obvious targets for illegal trade than high volume products such as beer. Price differences between countries also result in illegal trading activities for beer. This primarily applies to the trade in large amounts of beer from abroad for domestic consumption exceeding the admissible quantities¹² or with the purpose of selling it on to consumers in the home country. Beer-generated economic activities which

⁹This is calculated by multiplying the number of times inhabitants of the Nordic countries travel abroad to purchase beer (see Annex III) by the additional kilometres travelled: 9,780,200 * (461-21) = 4,303,288,000.

¹⁰http://www.ing.nl/Images/EBZ_Veroudering-wagenpark-remt-verlaging-CO2-uitstoot_tcm7-139747.pdf.

¹¹http://www.siemens.com/press/pool/de/events/corporate/2009-12-Cop15/European_Green_City_Index.pdf

¹²In Norway the maximum tax-free beer quota is four litres, while in Denmark, Finland and Sweden, residents are allowed to import up to 110 litres of beer for domestic consumption.

circumvent the legal tax system have received a lot of attention in public and academic debate, especially in the Nordic countries.

Box 2.2 Illegal trade in the Nordic countries

Denmark	In 2011 the Danish Ministry of Taxation ¹³ estimated the volume of the illegal trade in beer at 35 million litres. Illegal trade constitutes 25.9% of the total amount of cross-border shopping for beer.
Sweden	According to the Swedish Retail Institute (2009) ¹⁴ , in 2002-2008 the total illegal trade in beer amounted to 420 million litres.
Finland	In 2008, unrecorded trade in alcoholic beverages amounted to 18% of total alcohol consumption. ¹⁵
Norway	In 2007, 25% of Norwegian consumers occasionally brought home more than the allowed quota. ¹⁶

2.6.1 Implications of illegal trade

Like legal cross-border trade, illegal cross-border trade has negative consequences. In addition to the aforementioned economic impact, experts also see a relationship between illegal trade and negative effects on public health. As confirmed by interviews with experts and the literature¹⁷, it is mainly under-aged who consume illegally imported beer. In Sweden under-aged up to the age of 20 are not allowed to purchase beer in retail outlets and therefore turn to alternative (i.e. illegal) distribution channels.

In conclusion, differing beer prices in neighbouring countries created by discrepancies in tax levels not only lead to cross-border trade for domestic consumption, but also to cross-border trade with the aim of reselling and making a profit. The latter is against the law and ends up increasing opportunities for under-aged to consume alcoholic beverages.

¹³ Skatteministeriet (2012), *Status over grænsehandel*.

¹⁴ The Swedish Retail Institute (2009) *Swedish alcohol policy – An effective policy?* Research Report.

¹⁵ Karlsson, T. (Ed.) (2009) *Alcohol in Finland in the early 2000s: Consumption, harm and policy*. National Institute for Health and Welfare, Helsinki.

¹⁶ Lavik, R., S. Nordlund (2009) *Norway at the border of EU – cross-border shopping and its implications*. Nordic studies on alcohol and drugs, (26), 205-231.

¹⁷ The Swedish Retail Institute (2000) *Swedish alcohol policy – An effective policy?* Research report.



3 THE CONSEQUENCES OF HIGH EXCISE DUTY RATES FROM AN EU-WIDE PERSPECTIVE

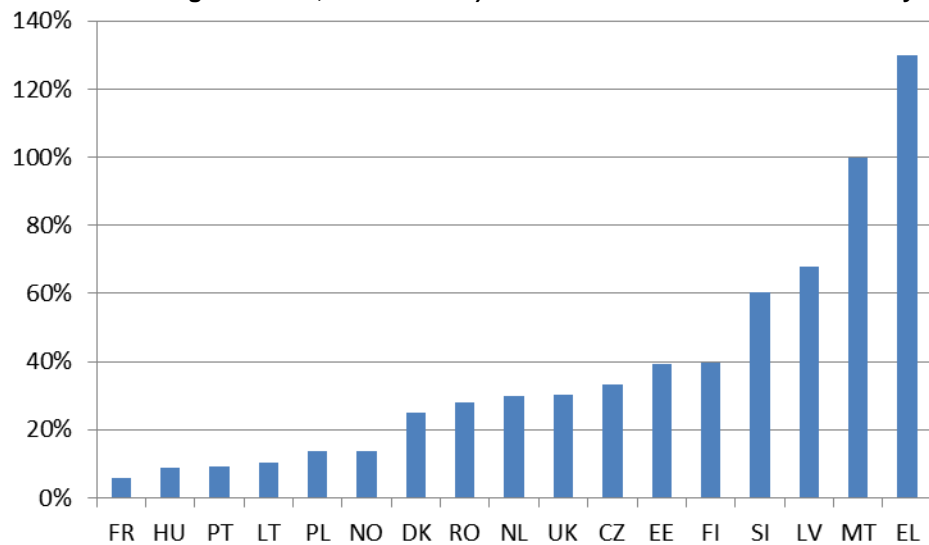
Highlights

- A study on the effects of excise duties in 2008-2012 shows that in most countries where excise duty rates have increased excise duty revenue has increased as well. However, the negative impact on employment significantly affect government revenue from income tax and social security contributions.
- Increases in excise duty do not result in a proportionate increase in the total beer-generated government revenues. In 8 of the 17 countries where an excise increase took place, total beer-generated government revenues even decreased.
- Increases in excise duty result in a reduction of beer-generated employment. In 15 of the 17 countries that increased the excise duty on beer, beer-generated employment decreased.
- High excise duty rates lead to a decrease in beer sales as well as increased cross-border sales. Both have a negative impact on employment and government revenues.

3.1 Rising excise duty

Although the excise duty rates applying to beer in the Nordic countries were already among the highest in the EU, three of these four countries (Denmark, Finland and Norway) further increased these rates in the period between 2008 and 2012, making them stand out even more (see Section 2.1). Sweden introduced an increase after 2012. In total, 20 countries made changes to the excise duty on beer (see Figure 3.1). In 17 countries this was an increase, while in three countries (Ireland, Croatia and Slovakia) the excise duty on beer decreased over the specified period.

Figure 3.1 Increases in the excise duty on beer in local currency 2008-2012 (12 degrees Plato, 4.8% alcohol) in the EU Member States and Norway.



Source: European Commission

In this study the period 2008-2012 is analysed. However, it is important to note that some of the countries that did not change their excise duty rate within this period did introduce an increase after 2012. In France the excise duty on beer was increased by more than 160% in 2013.

3.2 Impact on government revenues

Increases in excise duty do not result in a proportionate increase in total government revenues.¹ The 2013 economic impact study for The Brewers of Europe shows that although 17 countries increased the excise duty levied, total beer-generated government revenues in the EU decreased by 2.2% in the period 2008-2012. Moreover, as can be derived from Figure 3.2, in many cases an increase in excise duty did not lead to an increase in total government revenues from beer in the individual countries either:

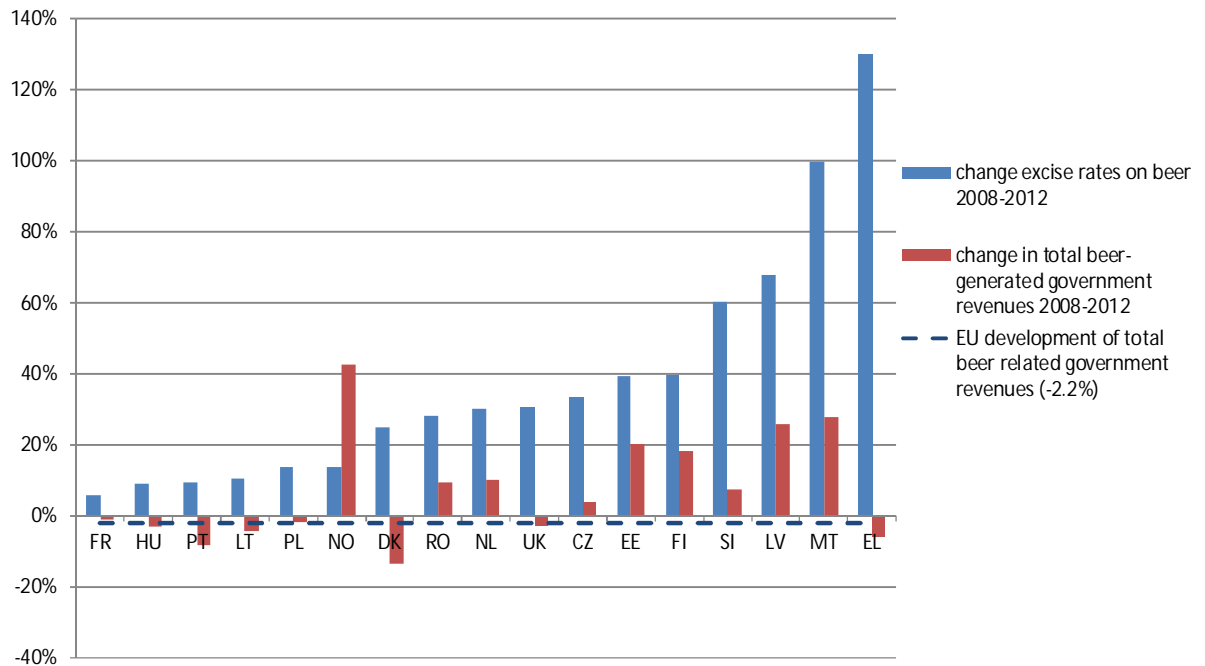
- In only one country did total government revenues increase commensurate with or by a greater degree than the excise duty hike.
- In 8 countries the percentage increase in total government revenue was significantly less than the excise duty increase percentage.
- 8 countries even saw a negative impact on total government revenues after the excise duty increased.

Although in most countries where the excise duty has increased, excise duty revenue has increased as well, the negative impact on employment associated with an increase in excise duty significantly affected government revenues

¹See also: PWC (2010) *Taxing the Brewing Sector: A European Analysis of the Costs of Producing Beer and the Impact of Excise Duties*.

from income tax and social security contributions. Furthermore, when the mean inflation rate of 9.1% in the period between 2008 and 2012 is taken into account, the net development of government revenues in these countries is even more negative.

Figure 3.2 Changes in total beer-generated government revenues in those EU Member States (plus Norway) where the excise duty on beer increased (2008-2012)



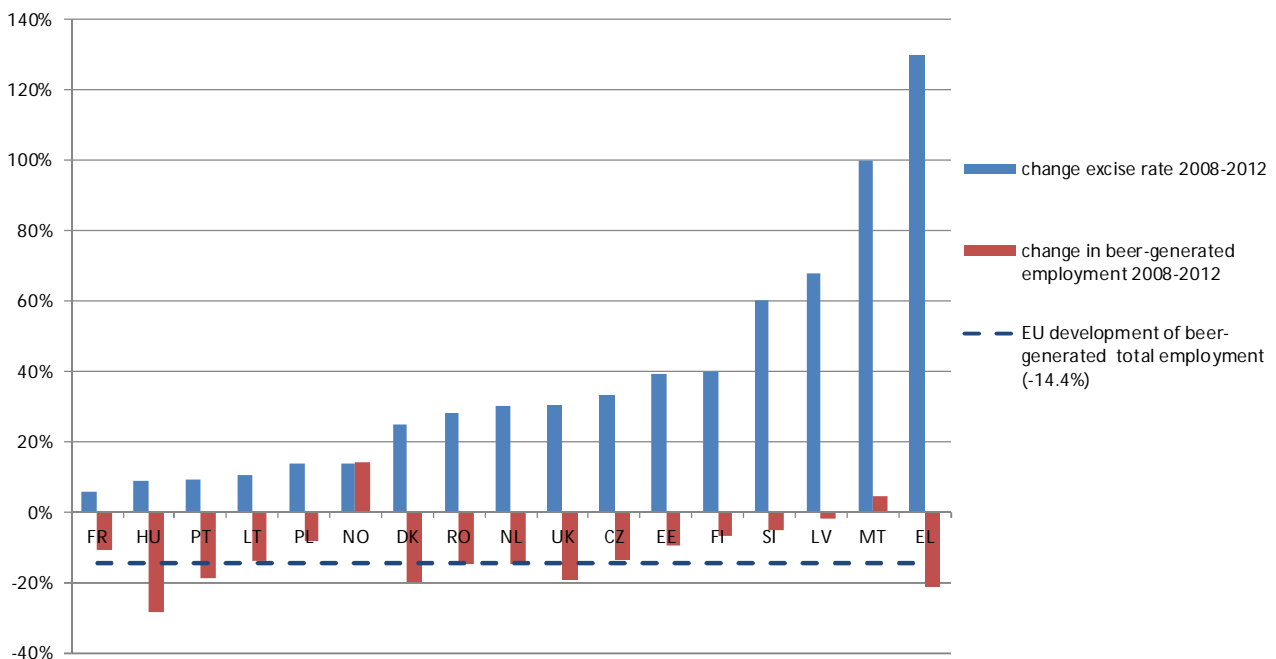
Source: Economic impact database brewing sector (Regioplan)

3.3 Impact on beer-generated employment

While excise duty rates increased in 17 countries, the European brewing industry lost 330,000 jobs between 2008 and 2012.² In most countries where the excise duty on beer was increased, beer-generated employment decreased. Figure 3.3 presents statistics concerning the relationship between excise duty increases and total beer-generated employment in the countries concerned. It shows that, in 15 of the 17 countries where the excise duty increased between 2008 and 2012, total beer-generated employment declined.

² Regioplan & EY (2007, 2009, 2011, 2013) *The Contribution Made by Beer to the EU Economy*.

Figure 3.3 Changes in beer-generated employment in the EU Member States (plus Norway) where the excise duty on beer increased (2008-2012)



Source: Economic impact database brewing sector (Regioplan)

Most of the beer-generated jobs that are lost are positions in the hospitality sector. In most of the countries that increased the excise duty and where a decline in beer-generated hospitality jobs was observed, this decline was higher than the EU average of -18.7%. Given the fact that the hospitality sector plays a pivotal role in providing employment opportunities for younger workers, it can be stated that the negative impact of rising excise duties on employment in the hospitality sector hits young people hard.

Furthermore, we can conclude that in those countries where the excise duty increased, government revenue was negatively affected by a decline in beer-generated government revenues resulting from employment. It should be noted that the costs of unemployment have not been included in these calculations. Taking these into account would have produced an even more negative picture.

The Nordic countries are examples of nations with high excise duty rates where the figure for beer-generated employment is relatively low compared to the rest of the EU. Beer sales in the hospitality industry in particular, and the associated demand for employment, are relatively low in these countries.³ Although there are also cultural factors involved in this, it is most probably also related to the high levels of taxation.

³ Regioplan & EY (2007, 2009, 2011, 2013) *The Contribution Made by Beer to the EU Economy*.



ANNEXES



CONSUMER SURVEY

A.I.1 RESULTS

For Denmark, Norway and Finland the age distribution of the response on our consumer survey differs from the factual age distribution of population of these countries. So we have weighed the response for these countries.

Figure A.I.1 How much beer do you (or someone else within your household) shop on an average per month within Sweden / Denmark / Norway/ Finland?

Country	Mean (in litres)	Corrected mean*	N	Std. Deviation
Sweden	5,2	5,2	800	7,1
Denmark	6,1	6,1	805	10,6
Norway	6,4	5,5	798	7,4
Finland**	9,3	8,6	797	13,5
Total	6,8	6,4	3200	10,1

* 4 people said they bought 160 to 370 litres, these were excluded from the corrected mean.

** One person did not answer this question.

Figure A.I.2 Did you (or someone else within your household) shop for beer abroad during the last twelve months? (multiple answers possible)

	Country				
	Sweden (n=800)	Denmark (n=805)	Norway (n=800)	Finland (n=801)	Total (n=3206)
No	52,5%	50,2%	37,2%	49,2%	47,3%
Yes, I purchased beer abroad myself	33,4%	39,2%	57,4%	41,0%	42,7%
Yes, someone else (for example a friend or relative) purchased beer for me abroad	17,5%	13,6%	9,5%	13,8%	13,6%

Figure A.I.3 How many times did you (or someone else within your household) approximately shop for beer abroad during the last twelve months?

Country	Average number of times	N	Std. Deviation
Sweden	1,3	800	3,3
Denmark	1,5	805	2,7
Norway	3,2	800	6,3
Finland	1,7	801	4,1
Total	1,9	3206	4,4

Figure AI.4 How many times did you (or someone else within your household) approximately shop for beer abroad during the last twelve months?

Number of times	Country				Total (n=3206)
	Sweden (n=800)	Denmark (n=805)	Norway (n=800)	Finland (n=801)	
0 times	52,5%	50,3%	37,3%	49,2%	47,3%
1 time	19,6%	14,4%	10,5%	17,1%	15,4%
2 times	14,8%	17,3%	16,4%	15,5%	16,0%
3 times	4,4%	6,3%	9,6%	6,5%	6,7%
4 times	3,6%	4,5%	6,5%	3,6%	4,6%
5 to 9 times	3,8%	5,1%	10,4%	4,2%	5,9%
10 times or more	1,4%	2,1%	9,3%	3,9%	4,1%
Total	100%	100%	100%	100%	100%

Figure AI.5 In which countries did you (or someone else within your household) shop for beer during the last twelve months?

	Country				Total (n=1690)
	Sweden (n=380)	Denmark (n=401)	Norway (n=502)	Finland (n=407)	
Germany	56,6%	92,8%	11,3%	8,4%	40,1%
Estonia	2,6%	0,0%	1,0%	74,6%	18,8%
Sweden	0,0%	1,7%	69,0%	9,9%	23,3%
Poland	3,9%	1,4%	3,1%	2,1%	2,6%
Norway	1,6%	3,2%	0,0%	1,3%	1,4%
Denmark	23,2%	0,0%	20,7%	0,8%	11,6%
Finland	5,3%	0,2%	4,0%	0,0%	2,4%
On a boat/ferry (tax free)	23,9%	3,3%	25,3%	43,2%	24,1%
Other:	17,6%	9,3%	28,3%	19,3%	19,2%

Figure AI.6 How do you (or someone else within your household) travel when you are going abroad to shop for beer? (multiple answers possible)

	Country				Total (n=1690)
	Sweden (n=380)	Denmark (n=401)	Norway (n=502)	Finland (n=407)	
By car	57,9%	90,3%	75,3%	36,4%	65,6%
By ferry	47,1%	14,3%	25,9%	71,4%	38,9%
By train/bus	14,5%	3,7%	3,2%	13,1%	8,3%
Riding along with someone else	3,4%	6,6%	4,9%	6,1%	5,3%
Other:	13,2%	6,4%	26,4%	11,9%	15,2%

Figure AI.7 Could you please indicate the approximate distance between your regular shopping place for beer abroad and your home?

Country	Average distance in km	N	Std. Deviation
Sweden	317,9	362	252,6
Denmark	207,0	400	131,0
Norway	160,3	474	167,0
Finland	259,5	386	201,0
Total	230,6	1622	199,1

Figure AI.8 Could you please indicate the approximate distance between your regular shopping place for beer abroad and your home?

Distance in km	Country				
	Sweden (n=362)	Denmark (n=400)	Norway (n=474)	Finland (n=386)	Total (n=1622)
1 - 50	17,7%	9,3%	21,6%	9,9%	14,9%
51 - 100	12,7%	12,5%	24,1%	22,9%	18,4%
101- 150	4,4%	18,5%	27,1%	6,8%	15,1%
151 - 200	8,8%	23,8%	9,9%	14,3%	14,1%
201 - 250	5,5%	9,3%	3,0%	5,7%	5,7%
251 - 300	8,6%	12,3%	4,2%	10,6%	8,7%
301 - 350	2,5%	7,0%	1,1%	3,6%	3,5%
351 - 400	8,3%	2,3%	1,3%	6,0%	4,2%
more than 400	31,5%	5,0%	7,8%	20,3%	15,4%
Total	100%	100%	100%	100%	100%

Figure AI.9 Could you please indicate the approximate distance between your regular shopping place in your own country/ town and your home?

Country	Average distance in km	N	Std. Deviation
Sweden	12,2	378	43,9
Denmark	17,1	398	55,9
Norway	8,2	500	29,6
Finland	5,1	407	12,1
Total	10,4	1683	38,5

Figure AI.10 Could you please indicate the approximate distance between your regular shopping place in your own country/ town and your home?

Distance in km	Country				
	Sweden (n=378)	Denmark (n=398)	Norway (n=500)	Finland (n=407)	Total (n=1683)
1	27,2%	56,1%	49,5%	42,3%	44,3%
2	17,2%	11,5%	18,0%	17,0%	16,0%
3	10,8%	4,3%	9,2%	10,3%	8,7%
4	6,6%	2,8%	4,2%	4,2%	4,4%
5	11,1%	10,3%	5,4%	8,1%	8,5%
6 - 10	9,8%	5,0%	5,4%	8,8%	7,1%
11 - 15	4,0%	1,5%	1,8%	2,5%	2,4%
16 or more	13,2%	8,5%	6,4%	6,9%	8,6%
Total	100%	100%	100%	100%	100%

Figure AI.11 How many litres of beer do you (or someone else within your household) purchase on average each time when you are shopping for beer abroad?

Country	Mean (in litres)	N	Std. Deviation
Sweden	31,2	376	43,7
Denmark	36,6	400	43,5
Norway	5,8	502	7,0
Finland	23,3	406	35,1
Total	23,0	1683	36,5

Figure AI.12 How many litres of beer do you (or someone else within your household) purchase on average each time when you are shopping for beer abroad?

	Country				
	Sweden (n=376)	Denmark (n=400)	Norway (n=502)	Finland (n=406)	Total (n=1683)
1 - 5	20,5%	8,8%	65,8%	20,6%	31,3%
6 - 10	24,7%	15,5%	23,1%	26,3%	22,4%
11 - 15	2,4%	0,5%	2,4%	1,5%	1,7%
16 - 20	12,2%	7,0%	7,0%	18,7%	11,0%
21 - 25	9,3%	30,3%	0,6%	8,1%	11,4%
26 - 50	14,6%	22,3%	0,8%	16,2%	12,7%
51 - 100	10,6%	10,3%	0,4%	6,4%	6,5%
more than 100	5,6%	5,3%	-	2,2%	3,0%
Total	100%	100%	100%	100%	100%

Figure AI.13 Why do you (or someone else within your household) shop for beer abroad? (multiple answers possible)

	Country				
	Sweden (n=380)	Denmark (n=401)	Norway (n=502)	Finland (n=407)	Total (n=1690)
Beer is cheaper there	76,8%	82,1%	73,6%	85,9%	79,3%
There are more types of beer available	20,0%	10,1%	34,5%	31,8%	24,8%
Shopping is more comfortable there	5,5%	2,8%	5,2%	7,8%	5,3%
I am buying other groceries there	10,5%	28,2%	40,8%	13,3%	24,4%
Other	21,3%	22,9%	16,8%	10,5%	17,7%

Figure AI.14 How much do you (or someone else within your household) spend on average on other goods (for example groceries or services) when you are shopping for beer abroad?

	Country				
	Sweden (n=380)	Denmark (n=401)	Norway (n=502)	Finland (n=407)	Total (n=1690)
Less than 50 euros	26,1%	19,2%	16,9%	17,2%	19,6%
50-100 euros	24,2%	25,9%	19,9%	31,6%	25,1%
100-200 euros	18,2%	28,4%	34,2%	30,1%	28,3%
200-500 euros	17,1%	20,2%	23,7%	15,7%	19,4%
More than 500	5,3%	3,0%	3,8%	2,9%	3,7%
I do not purchase any other goods when I am buying beer abroad	9,2%	3,2%	1,6%	2,5%	3,9%
Total	100%	100%	100%	100%	100%

Figure AI.15 The price differences compared to your home country of which products are important reasons to shop abroad? (multiple answers possible)

	Country				
	Sweden (n=380)	Denmark (n=401)	Norway (n=502)	Finland (n=407)	Total (n=1690)
Soft drinks, waters, juices and/or syrups	8,4%	61,7%	29,6%	13,1%	28,5%
Beer	59,2%	63,5%	54,4%	61,3%	59,3%
Other alcoholic beverages (spirits and wine)	66,6%	52,2%	55,7%	57,2%	57,7%
Cigarettes	12,9%	10,8%	24,6%	29,5%	19,9%
Fuel	2,4%	2,1%	10,7%	16,7%	8,2%
Other products	13,4%	37,0%	42,3%	21,0%	29,4%
Price differences are not a reason to shop abroad/ I do not shop abroad	17,1%	13,3%	14,8%	17,9%	15,7%

Figure AI.16 Are price difference compared to your home country a reason to travel abroad to consume beer over there?

	Country				
	Sweden (n=800)	Denmark (n=805)	Norway (n=800)	Finland (n=801)	Total (n=3206)
Yes, price differences were a major reason for me to travel abroad to consume beer over there in the last twelve months.	7,5%	3,5%	6,4%	5,0%	5,6%
Yes, price differences were one of the reasons for me to travel abroad to consume beer over there in the last twelve months.	5,6%	5,2%	8,1%	12,2%	7,8%
No, I did consume beer abroad in the last twelve months but not because of price differences.	49,6%	49,7%	61,4%	52,1%	53,2%
No, I did not consume beer abroad in the last twelve months.	37,3%	41,6%	24,1%	30,7%	33,4%
Total	100%	100%	100%	100%	100%

A.I.1 DETAILS RESPONS (UNWEIGHTED)

Figure AI.17 Response by country

	Frequency	Percent
Sweden	800	25%
Denmark	802	25%
Norway	800	25%
Finland	800	25%
Total	3202	100%

Figure AI.18 Response by region - Norway

	Frequency	Percent
Akerhus	150	18,8%
Aust-Agder	17	2,1%
Buskerud	43	5,4%
Hedmark	39	4,9%
Nordland	46	5,8%
Nord-Trøndelag	28	3,5%
Oslo	198	24,8%
Østfold	69	8,6%
Sør-Trøndelag	75	9,4%
Telemark	31	3,9%
Troms	47	5,9%
Vest-Agder	18	2,3%
Vestfold	39	4,9%
Total	800	100%

Figure AI.19 Response by region - Denmark

	Frequency	Percent
Nordjylland	84	10,5%
Midtjylland	168	20,9%
Syddanmark	177	22,1%
Sjælland	123	15,3%
Hovedstaden	250	31,2%
Total	802	100%

Figure AI.20 Response by region - Sweden

	Frequency	Percent
Blekinge	15	1,9%
Gotland	6	0,8%
Hallands	28	3,5%
Jonkoping	35	4,4%
Kalmar	18	2,3%
Kronoberg	13	1,6%
Orebro	39	4,9%
Östergötland	40	5,0%
Skåne	119	14,9%
Södermanland	33	4,1%
Stockholm	208	26%
Uppsala	36	4,5%
Värmland	27	3,4%
Västmanland	18	2,3%
VästraGötaland	165	20,6%
Total	800	100%

Figure AI.21 Response by region - Finland

	Frequency	Percent
Satakunta	9	1,1%
Pirkanmaa	22	2,8%
Uusimaa	265	33,1%
Kymenlaakso	226	28,3%
PaijaneTavastia (Lahti)	13	1,6%
Tavastia Proper (Hameenlinna)	2	0,3%
Southwest Finland (Turku)	147	18,4%
Central Finland (Jyväskylä)	36	4,5%
Southern Savonia (Mikkeli)	80	10,0%
Total	800	100%

Figure AI.22 Average age respondents

Country	Mean	N	Std. Deviation
Sweden	48,4	800	16,7
Denmark	56,7	802	13,6
Norway	44,9	800	16,0
Finland	44,2	800	14,3
Total	48,5	3202	16,0

Figure AI.23 Response by age

	18 - 24 yrs	25 - 34 yrs	35 - 44 yrs	45 - 54 yrs	55 +	Total
Sweden	9,5%	15,4%	19,0%	17,4%	38,8%	100%
Denmark	3,2%	5,7%	8,2%	19,8%	63,0%	100%
Norway	12,8%	18,0%	18,9%	22,6%	27,8%	100%
Finland	9,1%	21,1%	21,1%	25,1%	23,5%	100%
Total	8,7%	15,1%	16,8%	21,2%	38,3%	100%

Figure AI.24 Response by age (resp.) compared to data Eurostat (pop.)¹

	Sweden		Denmark		Norway		Finland	
	Pop	Resp	Pop	Resp	Pop	Resp	Pop	Resp
18 - 24	11,7%	9,5%	11,4%	3,2%	12,0%	12,8%	10,8%	9,1%
25 - 34	15,8%	15,4%	14,9%	5,7%	17,0%	18,0%	15,8%	21,1%
35 - 44	16,6%	19,0%	17,2%	8,2%	18,4%	18,9%	15,1%	21,1%
45 - 54	16,7%	17,4%	18,2%	19,8%	17,5%	22,6%	17,1%	25,1%
55 +	39,2%	38,8%	38,4%	63,0%	35,2%	27,8%	41,2%	23,5%

Figure AI.25 Response by gender

	Male	Female	Total
Sweden	55,6%	44,4%	100%
Denmark	58,0%	42,0%	100%
Norway	51,9%	48,1%	100%
Finland	48,6%	51,4%	100%
Total	53,5%	46,5%	100%

Figure AI.26 Response by driver's license

	Country				Total
	Sweden	Denmark	Norway	Finland	
Yes	89,1%	90,4%	87,5%	88,4%	88,9%
No	10,9%	9,6%	12,5%	11,6%	11,1%
Total	100%	100%	100%	100%	100%

¹Especially in Denmark, younger respondents were underrepresented in the survey. To correct for this, we added weighting factors to the results of the survey. By doing this we made sure that all the results in tables in this report are representative for the total population in the four Nordic countries.

ANNEX II

LITERATURE

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ANNEX III

CALCULATION EFFECT CROSS BORDER SHOPPING ON VAT AND EXCISE DUTY REVENUES

	Sweden	Denmark	Norway	Finland	Total
Households (within border regions)¹	3,912,500	2,339,100	1,470,000	2,352,700	10,074,300
% beer consumers	81%	86%	75%	74%	
Target group	3,169,100	2,011,600	1,102,500	1,741,000	8,024,200
Number of times per year	1.3	1.5	3.2	1.7	
Total number of visits per year	4,119,800	3,017,400	3,528,000	2,959,700	13,624,900
Litres of beer	31.2	36.6	5.8	23.3	
Total volume of beer purchased abroad (litres)	128,538,700	110,436,800	20,462,400	68,961,000	328,398,900
Average consumer price per liter (€)	3.19	1.76	6.62	4.05	
Total value of beer purchased abroad (€)	410,038,500	194,368,800	135,461,100	279,292,100	1,019,160,500
Excise duty per liter beer (€)	1.05	0.38	2.72	1.60	
% VAT	25%	25%	25%	24%	
Loss of excise duty revenues (€)	135,029,900	41,966,000	55,596,300	110,337,600	342,929,800
Loss of VAT revenues (€)	82,007,700	38,873,800	27,092,200	54,056,500	202,030,200
Total loss of government revenues (€)	217,037,600	80,839,800	82,688,500	164,394,100	544,960,000

¹ The number of households in Denmark is obtained from Eurostat. The figures for the other Nordic countries refer only to the regions that were included in the survey.



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