ROLE OF SUPPLY AT LOCAL AND NATIONAL LEVELS: CONSUMPTION AND CONSEQUENCES

Unrecorded alcohol consumption: its economics and its effects on alcohol control in the Nordic countries

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Abstract
The starting point of this paper is the fact that no country has complete records of alcohol consumption. In addition to being a matter or statistical accuracy, unrecorded alcohol also plays an important role in alcohol policy discussions. Furthermore, its quantity is bound to basic economic laws. These latter two aspects are the main interest in this paper, which discusses, first, what is really meant by unrecorded alcohol consumption and what kind of categories are included in it. The next task is to discuss the economics of different categories of unrecorded alcohol and the mechanisms which lead to increases or decreases in them. The examples in this part of the paper come from the Nordic countries. Arguments about increased smuggling and illegal distilling have always been used against alcohol policy restrictions in the Nordic countries. Recently the level of travellers’ alcohol imports and border trade have also been used for the same purpose. In the European Union the task to harmonise alcohol excise taxes is partly given to increased travellers’ duty-free allowances and market forces. This policy has already led to reductions in alcohol taxation both in Denmark and Sweden.

Introduction
The Nordic countries, Denmark, Finland, Iceland, Norway and Sweden, are among those few nations in the world which have tried to control alcohol-related harms with a conscious alcohol control policy. Four of the five Nordic countries have, at times, built up a comprehensive state alcohol monopoly system consisting of monopoly rights on production, import, export, wholesale and retail sales. Denmark is the only one which has not relied on a state alcohol monopoly in its alcohol control, but like the other Nordic countries it has used high alcohol taxes as a means to control alcohol consumption and to collect alcohol tax money for the state.

In connection with Finland’s and Sweden’s membership in the European Union (EU) and Iceland’s and Norway’s participation in the European Economic Area Agreement, in the mid-1990s these countries were forced to abolish all alcohol monopolies except the off-premise retail sales monopoly on alcoholic beverages (see e.g. Holder et al., 1998). This has resolved one controversy regarding EU regulations in the al-

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The role of unrecorded alcohol consumption

In the industrialized western world official alcohol consumption figures are usually good indicators of the total amount of alcoholic beverages that have been drunk in the country. In some of these countries, as well as in many developing countries, recorded alcohol consumption figures may, however, be highly misleading. In every country recorded consumption figures are somewhat inaccurate in giving the real level of total alcohol consumption, no matter how it is defined. The amount of unrecorded alcohol consumption is, therefore, an important issue when trying to reveal how much alcohol people in a specific country really drink and how much they drink in relation to inhabitants of other countries.

In broad terms recorded alcohol consumption can be defined as the amount of alcoholic beverages sold to consumers through legal retail outlets in a country, or as the amount of legal commercial alcoholic beverages consumed by the inhabitants of that country. Consequently, unrecorded alcohol consumption can be characterized as, for one reason or another, the amount of alcohol left out of the statistics. To be clear, in the following we are dealing only with alcohol that is drunk by people, not with alcohol used for industrial, technical or medical purposes or as fuel.

In addition to being a matter of statistical accuracy, unrecorded alcohol also plays another important part in the alcohol field. Like recorded alcohol, unrecorded alcohol, partly legal and partly illegal, is also bound to basic economic laws, and there is often an interplay between different categories of recorded and unrecorded alcohol consumption. For instance, it is clear that the more travellers take alcoholic beverages with them when returning home from abroad the less alcoholic beverages they buy from domestic sources. To take another example, a growing alcohol black market means decreases in recorded alcohol consumption and lost taxes for the state. These aspects of unrecorded alcohol consumption are our main interest in this paper.

First, this paper will discuss what is really meant by unrecorded alcohol consumption. Why is some part of alcohol consumed for drinking purposes left outside the statistics? What kind of categories are included in unrecorded alcohol consumption? Next, the economics of different categories of unrecorded alcohol will be discussed. Why, for instance, do people carry fairly heavy alcoholic beverages with them when returning home from abroad, and why are they becoming involved with such illegal activities as smuggling or moonshining? What kind of economic and social consequences do these behaviours have? The examples in this part of the paper come from the Nordic countries. Further, the mechanisms which lead to increases or decreases in different categories of unrecorded alcohol will be discussed, and the effects and consequences these changes have on alcohol control policies and state finances.

Different categories of unrecorded alcohol consumption

The concept of recorded alcohol consumption has developed in each country in conjunction with local alcohol legislation (see e.g. Room, 1993). When governments started to tax the production, import, wholesale or retail sale of alcoholic beverages they had to define how this taxation should be carried out. If the tax was put only on the right to produce, import or sell alcoholic beverages there was no special need to know the amounts of alcoholic beverages involved. However, most countries have developed an alcohol taxation system which is related to the amounts of alcoholic beverages involved, and therefore a system of registration of these amounts has become necessary. In the main, this is the way alcohol statistics have developed in different countries at different times. In some countries the definition of recorded alcohol con-
Unrecorded alcohol consumption also has a connection with the control of the amount of alcohol consumed because of the social order and public health consequences of drinking alcohol.

Statistics concerning the consumption of alcoholic beverages are based on different types of data in different countries. Some countries rely mainly on production data, some mainly on data of wholesale or on data from off- and on-premise retail sales (see e.g. Finnish Foundation, 1977). Strictly speaking, outputs from these types of sources are not figures on alcohol consumption. It would be more precise to call them production or sales figures, depending on the type of basic data. Usually this discrepancy does not cause problems at the national level, but at the local level production and even sales data often lead to difficulties in estimating real alcohol consumption.

The accuracy and reliability of official figures on alcohol consumption probably vary considerably depending, for instance, on the economic importance of alcohol taxation. In countries with low or no alcohol taxes the necessity of producing reliable alcohol consumption figures is, of course, lower than in countries where a large fraction of government revenues comes from alcohol taxation. Also the mode of production and trade affects the reliability of data as it is much easier, for instance, to collect the relevant figures from a highly concentrated brewery industry than from wine-making based on a large number of relatively small family firms.

It is a matter of definition as to what is meant by recorded alcohol consumption in each country, and every country that produces official alcohol consumption figures has to agree on such a definition. When recorded alcohol consumption is defined the unrecorded alcohol consumption is, of course, defined at the same time. All alcohol consumption that is not recorded is unrecorded. This definition is, however, too general for most practical purposes. If, for instance, one wants to estimate the total amount of unrecorded alcohol consumption it is often convenient first to estimate separately specific categories of this consumption and to calculate an estimate for the total unrecorded consumption on the basis of these estimates.

Estimates of separate categories of unrecorded alcohol consumption may also be important in their own right. The quantities of alcoholic beverages that are imported legally or illegally by travellers might, for instance, in some countries, or in some periods, reduce government’s alcohol tax revenues considerably, and in order to adjust the taxation to an optimal level reliable estimates of this unrecorded import are necessary. It is also helpful for police and customs officials to have reliable estimates of the magnitude of illegal production and import of alcoholic beverages in order to allocate their control resources in an optimal way.

Some of the alcohol which is drunk within a country is not drunk by the inhabitants of the country, and some of the alcohol drunk by the inhabitants of a country is consumed abroad or on travels to or from foreign countries. Most of this consumption is actually recorded, but it is not included in the official statistics of the consumers’ native country, so this consumption is, in a sense, misrecorded. This might lead to misleading figures for official per capita alcohol consumption in some countries or regions, particularly in the most popular tourist regions, or in small countries intentionally offering the inhabitants of their neighbouring countries the possibility of cross border-shopping for cheap alcohol.

If every country estimated their total per capita alcohol consumption by adding to recorded alcohol consumption an estimate of alcohol consumed abroad or imported by travellers, the total alcohol consumption on a global level would be overestimated. For instance, what is imported into one country legally or illegally by travellers is often, but not always, a part of the recorded consumption in another country. Therefore, the unrecorded alcohol consumption in a country or region can mean two different things. On one hand it can be defined as the consumption of alcohol by the inhabitants that is not included in the country’s or region’s own statistics, irrespective of where the consumption takes place. On the other hand, it can be defined as the consumption of alcohol within the borders of the country or region that is not recorded in the country’s or region’s own statistics, irrespective of who is consuming it. In most cases, however, this possible difference in definition will not be of much practical significance, either because the quantities of alcohol the inhabitants drink outside the borders and the non-residents within the borders are both relatively small, or both are of about the same magnitude and, therefore, more or less counter-balance each other.
Table 1. Different categories of unrecorded alcohol consumption

1. Consumption of privately imported alcohol
   (a) Alcoholic beverages imported by travellers within the legal quotas either from tax-free outlets or through cross border shopping
   (b) Illegal alcohol imports by travellers (small-scale smuggling)
   (c) Large-scale smuggling of alcohol

2. Consumption of privately produced alcohol
   (a) Beer (in most countries legal, but might be illegal) either traditional home-brew or made from ready-made kits
   (b) Wine (in most countries legal, but might be illegal) either made from grapes, fruit, berries, rice and flowers, etc. or made from ready-made kits
   (c) Spirits (in most countries illegal)

3. Drinking alcohol that is meant for industrial, technical or medical use, or drinking products involving alcohol not produced for drinking purposes

4. Consumption of alcoholic beverages that are sold duty-free to foreign embassies, foreign military personnel, etc.

5. Travellers’ consumption of alcoholic beverages abroad and during travels

6. Consumption of alcoholic beverages by sailors and other people who are living outside their native country for longer periods

7. Consumption of beverages that contain alcohol, but are not defined as alcoholic beverages in the official statistics

8. Over- or underestimation of the officially recorded consumption due to inadequacies in the collection of data for official statistics

The general definition of unrecorded alcohol consumption discussed above can be given a more detailed content with the different categories of unrecorded alcohol consumption presented in Table 1. The first two categories in Table 1 are the most important, since in most places they cover a large part of the total unrecorded alcohol consumption. Categories three and four certainly belong to the unrecorded alcohol consumption but usually they are of no great significance in quantitative terms. Categories five and six belong to those categories we have earlier called misrecorded consumption. If these categories are to be included in the unrecorded alcohol consumption one should subtract the consumption by non-residents from the recorded consumption figures. The last two categories in Table 1 are cases which are usually not included in unrecorded alcohol consumption. Beverages in category 7 are, for instance, low-alcohol beer or wine coolers. These beverages are sometimes included in recorded alcohol consumption, but in most countries they are not.

The definition of “alcoholic beverage” by giving the minimum alcohol content of alcoholic beverages also defines other beverages as “non-alcoholic beverages” or “alcohol-free beverages”, even if these beverages include some alcohol. As this definition varies in different countries so the product range of low-alcoholic beverages varies somewhat from country to country. The quantities covered by point 8 in Table 1 are, in most western European and North American countries, probably of small magnitude, but might be significant in some countries and should be taken into consideration.

Most of the officially recorded alcohol is distributed through legal channels to the consumers, but there also exist non-standard and clearly illegal channels of alcohol distribution in most countries. According to legality four combinations of products and distribution channels are possible. In Table 2 some examples are given that illustrate the variation in market. The alcohol quantities involved in each market vary over time, from country to country and also within countries, depending on the possible profits on the market and on the efforts and resources of the police and other controlling bodies. In some countries it seems that a market that is irregular, but not really illegal, has evolved and constitutes a large part of the alcohol market. For instance, it is usual in many developing countries to have homebrew of different types sold in simple private bars, licensed or not. It might not be legal, but it is tolerated and it is a very common phenomenon. In developed countries some illegalities are also tolerated. For instance, smallscale private production of strong beer and spirits for personal use is illegal in
Table 2. The combinations and examples of legal and illegal distribution channels of alcoholic beverages and legal and illegal alcohol products

<table>
<thead>
<tr>
<th>Legal alcohol products</th>
<th>Illegal distribution channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legally produced or imported products sold in licensed alcohol shops and licensed restaurants, bars, etc.</td>
<td>Legally bought alcohol products served in unlicensed bars, clubs, etc. or sold on the street to minors, homeless people, etc.</td>
</tr>
<tr>
<td>Contraband sold in licensed shops, restaurants, bars, etc.</td>
<td>Contraband or illegally produced products sold on the street or through unlicensed bars, clubs, or other distribution networks</td>
</tr>
</tbody>
</table>

Norway, but almost never reported to police and punished.

**Economics of unrecorded alcohol consumption**

With regard to the economics of unrecorded alcohol consumption, all categories under miscalculations (categories 5 and 6 in Table 1) as well as categories 4, 7 and 8 in Table 1 fall outside our interest. The reason for ignoring these categories is that they do not have their own economic dynamics in the overall domestic alcohol system and, therefore, these categories have not been included in discussions where unrecorded alcohol consumption has been used as an argument for changing the prevailing alcohol control policy. Those categories of unrecorded alcohol that have been relevant in these discussions are of all privately imported alcohol and privately produced alcohol. Also, the drinking of alcohol that is meant for industrial, technical or medical use, and of surrogates such as denatured spirits, medicine or car chemicals containing alcohol, or alcohol-containing products meant for washing windows and so on, has some relevance in these discussions.

**Drinking of alcohol produced for industrial, technical and medical purposes as well as surrogates**

Why are people drinking alcoholic products meant for industrial, technical and medical use or other products containing alcohol? There is one very clear answer to this question: a certain amount of alcohol in these forms is much cheaper than in alcoholic beverages sold legally in ordinary shops or restaurants for drinking purposes. A second answer could be that the availability of legal or ordinary alcohol is so restricted that people simply resort to these types of alcohol products if they are willing to become intoxicated. This explanation is valid, for instance, during periods of prohibition or other unusual circumstances when the legal alcohol supply has been exhausted.

With regard to drinking alcohol produced for industrial, technical and medical use we usually have an impression of severely dependent alcoholics drinking whatever they are able to procure. This picture is usually quite accurate, but we should not forget that pharmacies also sell alcoholic products for medical purposes. For instance, in Finland during the time of prohibition in the 1920s pharmacies were places where physicians, veterinarians and the so on could obtain pure spirits, cognac and different types of fortified wines, officially for medical purposes but in practice for drinking purposes (Kallenaoutio, 1979). Even nowadays a percentage of the spirits bought from pharmacies for medical purposes ends up in drinking glasses, but its occurrence nowadays is quite small in Nordic countries because of harsher controls by authorities (see e.g. Mäkelä, 1979, 1982; Österberg, 1987).

Drinking surrogate alcohol as well as alcohol produced for industrial, technical and medical purposes has clearly decreased in all Nordic countries during the last decades. This can be explained by the increased availability of legal commercial alcoholic beverages, the general rise in the standard of living and a better social security system, giving even severe alcoholics the possibility to resort to ordinary alcoholic beverages. The importance of these developments is highlighted when comparing Nordic countries today and in the early 1960s. It can therefore be shown that it would be much easier today to procure surrogate alcohol, it would be easier and
healthier to drink it, and the price difference between it and legal commercial alcohol is still as huge as it was three decades ago. The drinking of alcohol produced for industrial, technical and medical purposes as well as surrogates has decreased to practically nothing (Österberg, 1987; Holder et al., 1998). However, there still may be epidemic increases from time to time. In Finland, for instance, the last epidemics date back to the late 1960s and early 1970s, as well as to the times of strikes in the Finnish State Alcohol Monopoly in 1972 and 1985 (see eg. Ahlström & Österberg, 1981; Österberg & Säilä, 1991). The reason for the epidemic increase in the use of surrogate alcohol in the late 1960s was the change in the denaturing agent used for an alcohol product meant for window-washing, which still retained the product’s bad taste and bad smell but was no longer immediately hazardous to health.

**Home production**

Historically, home production of alcohol has been very important. For instance, if we go some 150 years back we note that in the Nordic countries almost all distilled spirits were produced legally in small stills in the countryside. One aim of the banning of home distillation in the Nordic countries in the mid-19th century was to concentrate distilling of spirits in large distilleries, in order to be able to collect tax money more efficiently.

Some decades ago wine-making at home was based mainly on fruit and berries cultivated or collected personally by the wine maker. Nowadays people also use ready-made kits for wine-making. This commercial invention has affected wine-making in all Nordic countries. In Finland the selling of wine-making kits started by mail-order companies in larger quantities in the 1970s (Pöysä & Simpara, 1978). In the late 1980s and early 1990s Finland experienced a boom in making wine at home, with many small speciality stores selling wine-making equipment. The main reason for this boom was the economic recession in Finland at the beginning of the 1990s, giving people a stronger motivation to produce cheap alcohol. Furthermore, equipment and materials sold by the special stores have developed: nowadays any layman can produce reasonably good, or at least drinkable, wine at home with practically no risk of spoiling the batch.

In Nordic countries producing beer at home follows in many ways the same trends as wine-making at home, but at a much lower level. In Finland, for instance, home-made beer used to be special *sahti* beer, a traditional home-made ale. It is laborious to make *sahti*, which has had and partly still has its place in certain parts of Finland at local fiestas and family gatherings. In the late 1980s beer-making kits appeared on the market, but in beer-making the economic advantages are smaller than in wine-making. This is the reason why making beer at home in Nordic countries has never grown to the same level as has wine-making.

The reasons for producing alcoholic beverages at home both legally and illegally are basically economic. Making alcoholic beverages at home is economically beneficial because production costs for home-made alcohol are clearly lower than the prices of commercial alcoholic beverages, because prices of commercial alcohol include excise taxes. A good example of the role of high excise taxes in home production comes from Denmark, where alcohol control has been less restrictive than in other Nordic countries. However, in Denmark there was also a market for wine-making kits in the 1980s. After Denmark cut wine excise taxes by half at the beginning of the 1990s this market disappeared. Because of the increase of alcohol availability and the decrease in real prices of alcoholic beverages, wine- and beer-making at home also seems to be decreasing in other Nordic countries (Holder et al., 1998).

Unlike home production of beer and wine, home distilling is an illegal activity. In distilling spirits the difference between the costs of distilling at home and buying the same amount of alcohol in the form of legal commercial distilled beverages is clearly greater than the difference in wine- and beer-making. This is explained partly by the fact that in the Nordic countries a certain amount of alcohol is taxed more heavily in the form of distilled spirits than in the forms of beer or wine. Alcohol is also heavier and more space-consuming in the form of beer and wine than in the form of distilled spirits. Therefore, besides producing distilled spirits for personal consumption, illegally distilled spirits also have had and still have a commercial market in Nordic countries.

Traditionally, Norway has had a reputation for widespread home distilling of spirits. In par-
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ticular, during the prohibition from 1919 to 1927 home distilling flourished and even after that time, as a reaction to the high-price and low-availability alcohol policy, home distilling has been common in Norway, particularly in certain parts of the country. The sale of equipment for distilling spirits was forbidden in Norway in 1973. For several years subsequently the producers of such equipment found a legal export market in other Nordic countries, especially in Sweden.

In Norway in 1991 home-distilled spirits were estimated to account for 25% of the total consumption of distilled spirits. The corresponding figure for home-made wine was 30% and for home-made beer 1%. The figure for total alcohol consumption of home-produced alcohol was about 15% (Nordlund, 1992). In Sweden in 1996 the share of home-distilled spirits of total consumption of distilled spirits was about 20% and the corresponding figure for home-made wine was about 10%. The figure for total alcohol consumption of home-produced alcohol was about 9% (Kühlhorn et al., 2000). In Finland home distilling is uncommon, and therefore the figure for home-made alcohol has clearly been smaller in Finland than in Norway and Sweden. In 1998 home-produced alcohol was estimated to account for about 3% of total alcohol consumption. Furthermore, home production has been decreasing since the mid-1990s. However, of total wine consumption the proportion of home-produced wine was still about 10% (Intoxicants Statistical Yearbook, 1999).

Smuggling

Large-scale smuggling is motivated by economic profits, which means that there must be a margin between the purchase price of the smuggled alcohol and the price at which smugglers are able to sell the beverages in the country of destination. In practice this means that countries which are taxing alcoholic beverages very highly are potential markets. On the other hand, the costs of smuggling can be too high, and clearly the higher these costs are the the more smuggling is controlled by the authorities. Furthermore, in order to benefit from price differences smugglers must have a channel for retailing the beverages they have been able to smuggle into the country.

At certain periods smugglers have been extensively active. For instance, during the Norwegian and Finnish prohibition periods professional smuggling reached a very high level, and illegal distribution networks spread throughout all social groups and classes. Despite harsher controls, smuggling could not be stopped, and large-scale smuggling and illegal distribution became two of the strongest arguments against the prohibition.

Smuggling has been on the decrease in the Nordic countries since the Second World War and—with the exception of small-scale smuggling by travellers—it almost died out in the early 1980s. One explanation for this is that ships spent less and less time in harbour and it became increasingly difficult for ships’ personnel to use smuggling as a private business. From the mid-1980s, however, a new wave of large-scale, more or less professional, smuggling seems to have taken place in Norway triggered by strikes at the Norwegian State Alcohol Monopoly. After establishing contacts, networks and transport possibilities during the strikes the large profit potential in this activity was realized, and the business simply continued after the strikes were over. Nowadays smugglers seem mainly to bring alcoholic beverages over the borders by car, and often in very large trucks. The opening of the borders within the EU has made this traffic easier, and is the reason why large-scale smuggling also appeared in the mid-1990s in Sweden and Finland. During later years the large-scale smuggling of alcohol has been linked increasingly to other criminal activities such as prostitution, smuggling of drugs and tobacco, money-laundering, etc. and the criminal milieu has become more violent and organized.

It is extremely difficult to estimate the extent of the smuggling. The Swedish KALK study in 1996 estimated the amount of smuggling to be 8% of the total consumption of distilled spirits and 3% of total alcohol consumption (Kühlhorn et al., 2000). In Finland the corresponding estimates were 8% and 2%, respectively, in 1998 (Intoxicants Statistical Yearbook, 1999). In Norway the rate of smuggled spirits has been estimated to be between 7% and 16% of total spirits consumption (depending on the estimation method), and between 2% and 5% of total alcohol consumption (Nordlund, 1992). Data from 1999 show that the quantities of smuggled spirits seem to have decreased somewhat during the latter part of the 1990s.
Privately imported alcohol

Like home production and smuggling of alcoholic beverages, alcohol imports by travellers are basically motivated by economic reasons. This holds true whether alcohol imports are related to tax-free purchases or cross-border shopping, or if the imports of travellers are within the legal quotas or exceeding them, which we referred to earlier as small-scale smuggling. If the difference between the prices of alcoholic beverages in tax-free shops or in the neighbouring countries is large enough compared to domestic prices, it is worthwhile for travellers to carry alcoholic beverages with them when returning home even if wine and beer, in particular, may be heavy in relation to the economic savings one can obtain by carrying them.

There has been border trade for as long as there have been borders between countries, because national borderlines drawn on the map and marked out on the terrain have always appeared to be artificial obstacles in the eyes of the people living on the frontier. Thus, the volume of border trade is influenced by the same factors that affect the volume and orientation of trade in general; or, where the necessary products are available, what these products cost in different trading places, the buying power of the population and what travelling expenses connected with shopping.

In addition to the natural factors affecting the orientation of border trade, volume is also controlled by artificial factors which manifest themselves in rules and practices imposed by countries in order to either limit or advance the border trade and in the control of these rules and regulations. Furthermore, the total volume of border trade is naturally affected by the number of people living close to the crossing-points and their social relations, such as family connections and friendships.

As living standards have risen, the volume of border trade has also begun to be influenced by such factors as possibilities to connect shopping trips with various forms of entertainment. Moreover, the supplying party has often actively endeavoured to make good use of the demand beyond the border by, for example, advertising its products in the neighbouring country or building shops especially suited for customers from the other side of the border. For instance, at the Germany–Denmark border in post-Second World War times these shops have developed from banana kiosks to modern hypermarkets (Bygvrå, 1992).

Tax-free sales form a special issue in relation to border trade, and its role has been important in Nordic countries with respect to alcoholic beverages for several reasons. Geographical facts in general and concentrations of population in particular, as well as the location of the Nordic capitals and the distances between them, have resulted in the fact that waterborne and air traffic at the borders is extremely busy. By means of this traffic, as opposed to the traffic over national borders simply marked on the terrain, travellers have been offered an opportunity to buy certain products tax-free from special shops for that purpose. These products have been mainly alcoholic beverages, tobacco products, cosmetics and sweets, which are subject to special excise taxes in all Nordic countries.

Because alcoholic beverages have been heavily taxed in all Nordic countries the role of tax-free sales in travellers’ alcohol imports has been most important. In fact, during the post-Second World War period until the mid-1990s, with the exception of Denmark, almost all alcoholic beverages taken with them by Nordic travellers when returning home from abroad were bought from tax-free outlets. Still today alcoholic beverages bought from tax-free outlets are highly important among travellers’ alcohol imports in Norway and Finland. After Sweden joined the EU in 1995 more Swedes have began to shop for alcoholic beverages from ordinary outlets both from Denmark and Germany. By the mid-1980s between Denmark and Germany this type of border shopping had already increased.

As a partner to the EEA agreement but not as a member of the EU, Norway still has very strict limits on how much alcoholic beverages travellers are allowed to bring in duty-free. Furthermore, the abolishment of tax-free sales in inter-EU traffic did not affect Norway. This explains why the role of tax-free alcohol in travellers’ alcohol imports is still very important in Norway. The fact that tax-free alcohol is also important for Finnish travellers is two-fold. First, during travels to Estonia and Russia travellers are able to buy alcohol from tax-free shops. Secondly, the ferries plying between Finland and Sweden now stop in the Åland Islands in order to be able to continue with tax-free sales.

According to the KALK study travellers’ alcohol imports in 1996 accounted for nearly
15% of total alcohol consumption. Counted for each beverage group the corresponding figures were 20% for distilled spirits, about 15% for wine and 10% for beer (Kühlhorn et al., 2000). In Finland the rate of travellers’ alcohol imports of total alcohol consumption in 1998 were just over 10%. With respect to different beverage groups the corresponding figures were about 16% for distilled spirits, about 14% for wines and about 8% for beer (Intoxicants Statistical Yearbook, 1999). According to recent estimates travellers’ imports accounted for nearly 10% of total alcohol consumption in Norway in 1999. For spirits the rate was about 20%, for wine 9% and for beer just over 1%.

Potential effects of unrecorded alcohol consumption on alcohol control measures
The existence of different categories of unrecorded alcohol consumption is, of course, bound up with the incompetence of the official statistical system to record them. However, the basic explanation for that is not to be found in some technical inability of the recording system, but from the willingness of people to keep part of their alcohol consumption outside official statistics because it is economically profitable for them. In Nordic countries the main explanation for smuggling alcohol, producing it at home and carrying it in luggage when returning home from abroad in large quantities is the price difference between unrecorded alcohol and those alcoholic beverages sold through legal domestic outlets. The explanation for this price difference is that those alcoholic beverages sold in legal domestic outlets are heavily taxed.

The volume of unrecorded alcohol has an impact on alcohol tax revenues. For instance, the more travellers bring alcoholic beverages with them when returning home from abroad the less they buy alcoholic beverages in domestic shops and the less they pay taxes on alcoholic beverages. The same is true for home production of alcoholic beverages and also for smuggled alcohol. This means that the state has a clear interest in restricting the volume of different categories of unrecorded alcohol consumption with different kinds of laws, regulations and enforcement practices, such as trying to stop smuggling with efficient checking by custom officials or trying to combat illegal alcohol sales with active police surveillance. The state may also regulate travellers’ imports of alcoholic beverages by strict limits on the amounts of duty-free alcohol imports, a minimum time limit for staying abroad in order to obtain the right to duty-free imports and strict personal control by custom officials and penalties for breaking the rules.

The volume of unrecorded alcohol consumption also affects domestic alcohol production and trade, as well as employment in domestic alcohol-related businesses. Domestic economic actors can, of course, support the rules and regulations imposed by the state for controlling unrecorded alcohol consumption, but for these actors a better solution in combating unrecorded alcohol consumption would be the lowering of alcohol excise taxes. Besides giving less incentive to alcohol consumers to procure unrecorded alcohol and to change from unrecorded to recorded alcohol, the lowering of alcohol taxes would also mean incentives for alcohol consumers to buy more alcoholic beverages. Therefore, alcohol industries as well as their employees are usually very eager to resolve the problem of large unrecorded alcohol consumption with lowered alcohol excise taxes. In most cases the state is not willing to follow this policy, as lower alcohol excise taxes in most cases mean lower levels of alcohol-related tax incomes. However, if the state is no longer able to control the amount of unrecorded alcohol consumption by different kinds of legal administrative restrictions the only remaining way to counteract, for instance, huge increases in travellers’ border trade with alcoholic beverages or an expansive illicit alcohol market is to lower the price difference between unrecorded and recorded alcohol by decreasing excise taxes on alcoholic beverages.

Taking advantage of the market forces
The idea of harmonized excise taxes inside the European Community dates back to the Treaty of Rome. In trying to build the European single market in the mid-1980s this target once again became important. Attempts to harmonize alcohol excise taxes in the EC and EU must be seen against this background. The basic target was to harmonize value-added taxes and all excise taxes, alcohol excise taxes among them.

In 1987 the European Commission issued a proposal for the harmonization of excise duties on alcoholic beverages (Österberg, 1993). The proposal was based on plans for centralized and
administrative implementation of unified excise duties for four different categories of alcoholic beverages: distilled spirits, intermediate products, wines and beer. The proposed rates were either an average or an adjusted weighted average of the prevailing rates of alcohol excise duties in the member states. Therefore, accepting this proposal would have meant quite dramatic reductions of alcohol excise duties in Denmark, Ireland and the United Kingdom, but also clear increases in alcohol excise duties in many other member states. It is important to note that in most EC member states there were not at that time excise duties on wine.

After sharp criticism, the Commission came up with a new proposal in autumn 1989, including minimum excise rates and target excise rates for different categories of alcoholic beverages. The proposed target rates were the 1987 uniform rates raised by 10%. The minimum rates for beer and wines were half the target rates. For distilled spirits the proposed minimum rate was about 90% of the uniform rate proposed in 1987. Even this proposal was not accepted by member states.

In 1992 the Commission again came up with a new proposal for excise duties on alcoholic beverages, and this time the proposal was finally accepted in autumn 1992 (österberg, 1993). According to the new directive there is a minimum excise rate on distilled spirits, ECU 550 per hectolitre of pure alcohol, half the minimum rate in the 1989 proposal. Every member state has to apply at least this rate. The target excise rate for distilled spirits was set to ECU 1000. Countries where the current excise rate is below the target rate cannot reduce their excise duties on distilled spirits. Countries where the current excise duty on distilled spirits exceeds the target rate can decrease their excise duties, but the decreased rate cannot go below the target rate. There are, however, no obligations to decrease the excise taxes on distilled spirits if they are above the target level. The minimum excise rate for wine was set at zero, whereas the minimum rate for beer was put to ECU 1.87 per hectolitre and degree of alcohol in the finished product, the same as the minimum rate in the 1989 proposal. Target rates for beer and wine were dropped altogether.

The 1992 directive for alcohol excise taxes may be seen as a totally watered-down version of the 1987 and 1989 proposals. However, in 1989 the Commission had already seemed to change its strategy of harmonization of value-added taxes and excise duties. Instead of trying to implement uniform taxes and duties the Commission began to encourage neighbouring countries to negotiate bilaterally and to stress the right of travellers to import duty-free goods across the borders. As the Commission had earlier wanted only to extend current levels for tax-free imports of private citizens it now adopted the abolition of all restrictions as its goal. The idea was that market forces should take care of the harmonization which the Commission was not able to do administratively. Consequently, there should appear to be pressure on high alcohol taxes through the border trade without any directive on how the excise taxes are to be harmonized.

From theory to practice: the case of Denmark

Prices of alcoholic beverages have long been lower in Germany than in Denmark. Despite the differences in price levels travellers’ imports of alcoholic beverages from Germany to Denmark were insignificant before Denmark joined the EC in 1973. This was because Danish travellers returning home from a trip of less than 3 days were not allowed to bring with them any alcoholic beverages, and this order was strictly controlled (Bygvrå & Hansen 1987, p. 144). Danish EC membership did not immediately lead to a marked boost in the border trade on alcoholic beverages, because for a long time Denmark could limit the amounts of alcoholic beverages travellers crossing the border could bring in (see Table 3).

Since 1993, when returning home from short trips, the Danes have been allowed to bring with them alcoholic beverages according to the recommendation associated with the creation of the single European market (Council Directive 92/12/EEC). In other words, one can bring with himself/herself from another EU country 110 litres of beer, 90 litres of wine and 20 litres of intermediate products. Even today Denmark is, however, restricting the import of distilled spirits so that distilled spirits cannot be brought in if the trip has lasted less than 24 hours, and if returning from a trip longer than 24 hours, the maximum amount is 1.5 litres of distilled spirits. It should, however, be emphasized that in the EU
Table 3. Regulations concerning the import of alcoholic beverages by adult Danes crossing the border with Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Beer</th>
<th>Table wine</th>
<th>Fortified wine</th>
<th>Distilled spirits</th>
</tr>
</thead>
<tbody>
<tr>
<td>–1973</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1973</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>1985</td>
<td>*</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>1987</td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>1989</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>1990</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>1993–</td>
<td>110</td>
<td>90</td>
<td>20</td>
<td>0</td>
</tr>
</tbody>
</table>


Table 4. Estimates of the amounts of alcoholic beverages imported by returning Danes from Germany in millions of litres based on the surveys carried out by the Danish Border Research Institute

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer</td>
<td>6.6</td>
<td>7.0</td>
<td>6.0</td>
<td>86.2</td>
</tr>
<tr>
<td>Table wine</td>
<td>7.6</td>
<td>8.0</td>
<td>7.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Fortified wine</td>
<td>1.5</td>
<td>1.6</td>
<td>1.4</td>
<td>1.9</td>
</tr>
</tbody>
</table>


travellers’ imports of alcoholic beverages are meant for own consumption only. This also means that the above-mentioned limits are only indicative. The traveller can bring more than the indicative amounts if he or she is able to prove that imported alcoholic beverages are for their own consumption only.

Since 1977 the Border District Research Institute in Denmark has studied the volume of border trade several times. According to the May 1977 survey, 92% of Danes returning home had taken advantage of the opportunity to buy goods from Germany. In March 1989, the corresponding figure was 96% and in 1991 purchases were made by 91% of Danes returning home from Germany. Thus, shopping has played an important part in trips by Danish travellers crossing the borderline.

The number of Danish private cars in the early 1970s which have crossed the border between Denmark and Germany was about 1.5 million. As Denmark joined the EC, the yearly number of cars rose by 1978 to over 2.5 million. This boom was followed by a slight drop in the late 1970s and the early 1980s. After 1984 the number of Danish cars crossing the border began to increase rapidly, and in 1989 it reached a top rate of over 5 million cars a year. The number of Danes crossing the borderline between Denmark and Germany grew to over 14 million in the same year. By 1991 the annual number of Danish cars crossing the border had decreased to about 3 million.

Table 4 gives estimates of the amounts of alcoholic beverages imported by returning Danes from Germany in millions of litres based on the surveys carried out by the Danish Border District Research Institute (Thorsen, 1988). The table shows clearly that a loosening-up of import restrictions in the mid-1980s led to a huge increase in travellers’ duty-free imports of beer, but also to a clear increase in wine imports. The Danish beer industry was not, however, concerned about this increase as the beer Danes imported from Germany was mainly Danish beer first exported to Germany. We may also speculate that the state was not concerned of the increase in travellers’ beer imports from Germany, as this was for the most part an addition to the beer consumption of Danes. In other words, according to the official statistics beer sales inside Denmark decreased in the 1983–86 period from 666 million litres to 628 litres, or by 38 million litres, which is about half the increase in border trade. Furthermore, during the same period wine sales increased in Denmark from 96 to 101 million litres (Nordisk alcoholstatistik, 1982–1987, 1989).

In the longer term, however, the brisk border trade with beer and wine caused Denmark to revise its alcohol taxation, as there most certainly would have been a further increase in border trade after the new regulations coming into force in 1993 in connection with the single European market. The decreases in excise duty on beer and wine in July 1991 and in October 1992 meant that excise taxes on beer and wine were cut by
50% (Brazeau et al., 1993). A declared aim was to cut down border trade.

Lowered taxation of beer and wine has reduced border trade of alcohol. According to Milhøj (1993), beer bought abroad had fallen to under 10% of the aggregate consumption in the first quarter of 1993 and wine bought abroad to under 15% (Milhøj, 1993, p. 323). The important conclusion, therefore, is that the amount of wine and beer imported by travellers seems not to have increased in 1993, despite the fact that the import restrictions were essentially alleviated at the outset of 1993 (see Table 3).

**Emerging trends**

When Finland and Sweden joined the EU in 1995 they were granted derogation from the general EU limits on private importation of alcoholic beverages for the first 2 years of membership. The limits were set to 1 litre of spirits or 3 litres of intermediate products and 5 litres of wine and 15 litres of beer. In 1996 this derogation was continued for Finland until the end of 2003 and for Sweden until 1 July 2000 (Holder et al., 1998). Sweden has renegotiated its derogation and agreed to adjust to normal EU limits by the end of 2003, the same day that Denmark has to give up its remaining derogation for travellers’ imports of distilled spirits. Consequently, in the beginning of 2004 Denmark, Finland and Sweden will join the same rules and restrictions concerning travellers’ imports of alcoholic beverages as other EU countries.

Even with the derogation, travellers’ duty-free import allowances for beer and wine increased in Finland and Sweden in 1995 both from other EU member states and from third countries. For third countries the new import allowances were 1 litre of distilled spirits or 2 litres of intermediate products and 2 litres of wine and 15 litres of beer. Before 1995 the corresponding limits were 1 litre of spirits and 1 litre of wine and 2 litres of beer or 2 litres of wine and 2 litres of beer, wine defined as both fortified and table wine (Holder et al., 1998). In Finland this led to an increase in travellers’ alcohol imports especially from third countries, Russia and Estonia (Österberg & Pehkonen, 1996). In Sweden travellers’ alcohol imports rose especially from trips to Denmark and Germany (Trolldal, 1998; see also Kühlhorn et al., 2000).

Thus far the increase in travellers’ alcohol imports and the increase in smuggling of alcohol has not led to a general decrease in alcohol excise taxes. However, Sweden lowered its excise taxes on beer at the beginning of 1997 by nearly 40% due to increased cross-border trade, and in Finland excise taxes of wine and intermediate products were decreased by 17% on 1 January, 1998 (Holder et al., 1998). In both countries there is a lively continuing debate of the pros and cons of decreasing alcohol taxes and in both countries the discussion seems to indicate that decreases in alcohol taxation will be realized around the 2004 (see e.g. Österberg et al., 1998).

EU-induced border trade with alcoholic beverages has not affected Norway as much as it has affected Sweden or Finland (Lund, Trolldal & Ugland, 1999), and it will most certainly not affect Norway as directly as Sweden and Finland in the future. However, Norway has a long border with Sweden and if Sweden decreases alcohol tax levels the price difference of alcoholic beverages between Norway and Sweden will grow even larger than it is now, leading to increases in border trade with alcoholic beverages and putting more pressure on Norwegian alcohol tax levels.

**Conclusions**

No country has complete records of alcohol consumption. In all countries people drink some alcohol that is unrecorded, some percentage of it being legal and some percentage illegal. In particular, the illegal percentage has the potential to lead to political, social and economic problems. The size of these problems vary greatly, and it is evident that the problems are greater in countries with strict rules for alcohol production, distribution, sales and consumption as well as in countries with high excise taxes on alcoholic beverages. On the other hand, it is also evident that countries with strict rules and high taxes have lower per capita consumption than the more liberal countries, even when unrecorded consumption is included. Therefore, much of the alcohol policy debate is about weighing what is most important: low criminality related to alcohol handling (illegal production, smuggling, etc.) or low alcohol consumption and thereby low rates of alcohol-related health and social problems.

Especially in the Nordic countries, restrictive
alcohol policy measures have been used for generations to moderate alcohol consumption and related problems, and the alcohol policy debate has been very intense in these countries. Arguments about increased smuggling and illegal distilling have always been used against alcohol policy restrictions. For instance, these arguments were crucial for the abolition of the prohibition in Finland and Norway. Also the level of travellers’ alcohol imports and border trade have, in certain periods, been used for the same purpose.

In recent years all these arguments have again been heavily used in the alcohol policy debate in Nordic countries, but in particular border trade arguments have gained more importance due to European economic integration. Whatever views one has in general about the European single market, it is obvious that in the field of alcohol taxation this integration is a serious threat to traditional Nordic alcohol policy, with high taxes and prices on alcoholic beverages. Importantly, the directives that imply that in practice market forces should take care of the harmonization of alcohol excise taxes indicate an undermining of a very important part of Nordic alcohol control. It has already led to reductions in alcohol taxation, both in the old and new EU member states (Denmark, Finland and Sweden) and in the EEA countries (Norway and Iceland).

Not only does the EU act as a threat to the restrictive alcohol policy in the Nordic countries. Internal forces such as commercial economic actors in each of these countries have also been active in the same direction. It is obvious that the views of the people have changed in a more liberal direction throughout most of the postwar period. This is also mirrored in the countries’ parliaments. The political power to defend the traditional restrictive policies has weakened, together with the number of members in the temperance movement. In this way different processes act in the same direction, triggered by EU integration, making it difficult to shape and uphold an independent policy in the alcohol field in the way it used to be.

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