

## **Illegal activities – experimental calculations of prostitution, narcotics and smuggling of alcohol and tobacco**

Background.....	1
What should be included in Swedish output and consumption? .....	4
Prostitution .....	5
Legislation .....	5
Changes in prostitution practice following the adoption of the law ..	6
Trafficking in human beings for the purpose of performing sexual services .....	7
Demand - Estimating output value for prostitution .....	8
Different types of prostitution .....	9
Street prostitution.....	9
Internet.....	12
Sex clubs.....	14
Summary.....	19
Bibliography .....	21
Narcotics.....	23
Final consumption expenditure of households .....	23
Output .....	35
Import .....	38
Export .....	41
What is currently included in the National Accounts? .....	41
Summary.....	42
Bibliography .....	44
Alcohol and tobacco smuggling .....	46
General.....	46
The principles governing calculations .....	46
Calculation of alcohol and tobacco smuggling and home-produced alcohol.....	48
The final consumption expenditure of households.....	48
Imports.....	55
Output .....	59
What is currently included in the national accounts? .....	61
Summary.....	62
Sources.....	63

### **Background**

The Member States of the European Union estimate national accounting aggregates on the basis of the methodological criteria and standards laid

down in Council Regulation 2223/96, better known as ESA95<sup>1</sup>. Though it is not the only purpose of accounting aggregates, one of their main uses is to determine the contribution of all Member States to the European Communities' own resources. Council Decision 2000/597 identifies ESA95, GNI<sup>2</sup> as the basis for budgetary and own-resource calculations starting from budget year 2002.

The ESA95 Regulation has three main aims; that the national accounts should be internationally comparable (methodologically and numerically), reliable and exhaustive. These aims may be achieved by application of a common methodology<sup>3</sup> and use of a sufficiently robust structural-statistics basis, such that the estimation methods used generate figures that reflect as closely as possible the economic structure of Member States.

ESA95 explicitly states that production forbidden by law should also be included in GNI, (see notably paragraph 1.13g of ESA95). Therefore, Member States will have to make estimates of illegal activities and include them in their ESA95-based national accounts estimates. This makes the need to clarify issues relating to the treatment of illegal activities for own-resource GNI purposes very pressing. However, there are big difficulties because of the problems of collecting suitable and reasonably reliable data on the main activities customarily referred to as illegal.

Eurostat set up a task force on these matters in 2002, but its results were not very straightforward. The test compilations made could show very different results depending on which underlying assumptions were made. Therefore the models tested were not considered to be good enough to be the sole recommendation for inclusion of these activities in the core of national accounts.

To be included in value-added, an economic flow, legal or illegal, must satisfy the definition of a transaction, which presupposes a mutual agreement between the units involved (ESA95, paras 1.33 and 1.42) and must fall within the production boundary (ESA95, paras 3.07 to 3.08). Drugs, prostitution, fencing of stolen goods, and trade in illegal copies of originals appear to meet these two criteria. On the other hand, Eurostat have doubts as to whether theft (ESA95, para. 1.42) and extortion should be regarded as transactions or retained in the suggested list, given that generally there is no mutual agreement in these activities. As for bribery, while a mutual

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<sup>1</sup> European System of Accounts

<sup>2</sup> GNI=Gross National Income

<sup>3</sup> ESA95, Annex A

agreement can generally be assumed, it is debatable whether it may be considered as falling within the production boundary.

Secondly, the aim should be that the various countries compile exhaustive national accounts estimates including illegal activities. To that end, attempts should be made to set up harmonised data sources and calculation methods, building on and extending experience already gained in several countries.

The term “illegal” refers to (criminal) law. The definition of “illegal activities” depends on the laws of each country. Laws, however, may differ between countries and over time. Production and consumption of alcoholic beverages is a good example. In some countries it is illegal, whereas in most countries it usually is legal. Looking at comparisons over time, prohibition periods could be mentioned. Another example is prostitution, which in some countries is illegal, while other countries have all kinds of approaches to the (il)legality of prostitution. From a theoretical point of view, this point may be less relevant as the national accounts should be exhaustive, i.e. all activities, legal as well as illegal, should be included. In practice, most countries have excluded illegal activities. In that case, it becomes quite relevant how illegal activities have been defined, what illegal activities have been registered implicitly, how the intertwinement of legal and illegal transactions has been handled, etc.

Under ESA95, therefore, illegal activities must be included in the accounts. Illegal activities that fit the characteristics of transactions – particularly that there is mutual agreement between the parties – should be treated the same way as legal activities.

Illegal activities like drugs transactions, prostitution and smuggling are usually not covered in the national accounts. Nevertheless, illegal activities do contribute to output and income in the (national) economy. As such they should be registered accordingly, as laid down in the 1993 SNA<sup>4</sup>. Obtaining the data needed for the estimation of illegal production is usually difficult.

Great practical difficulties are encountered when estimating illegal production. Very few reliable sources can be found and a problem with the registration of illegal activities is the fact that in several countries some illegal activities may be included implicitly in the national accounts data. For example, units providing prostitution services are often included in the Business Register, under massage salons, renting of rooms, cafés, film studios, etc. As a consequence, some prostitution services are implicitly included, while grossing up the survey data, and simply adding explicit

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<sup>4</sup> System of National Accounts

estimates of illegal activities to GDP<sup>5</sup> may lead to double-counting. Transactions could also be covered by balance of payments data, and therefore have to be excluded to avoid double-counting. Similarly, laundering of revenue from these activities needs to be eliminated as well, but there is no statistical information to handle these problems.

Sweden has therefore on commission from Eurostat<sup>6</sup> tried to calculate the economic consequences of illegal activity and this text covers prostitution, drugs and the smuggling of alcohol and tobacco. Some general recommendations and theoretical models for making calculations were developed at seminars and in working parties organised by Eurostat.

No matter how good the models for compiling statistics are, they serve no purpose if the requisite data are not available. There is a great deal of uncertainty involved in measuring activities in this sector. For obvious reasons, no reliable data are available, so instead we have to deduce as much as possible from the information available in different contexts. Such data have primarily been compiled to illustrate the various problems faced by those involved and to which the activities give rise, and to monitor the effects of related amended legislation.

## **What should be included in Swedish output and consumption?**

For an activity to be included in the Swedish national accounts it has to have a centre of economic interest on the economic territory of Sweden (in accordance with ESA 1.30). This means engaging for an extended period (one year or more) in economic activity on this territory. It must also involve a transaction – an economic flow – based on mutual agreement between the parties. Swedish household final consumption expenditure can take place both at national and non-national level. If Swedes are outside the country for a period of less than one year, their final consumption expenditure in the other country is included in the Swedish national accounts. This expenditure is recorded under the heading “Consumption by Swedes Abroad” when compiling household final consumption expenditure. The data are based on figures relating to credit purchases and bureaux de change, and consequently consumption by Swedes abroad is included in our current national accounts.

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<sup>5</sup> GDP=Gross Domestic Product

<sup>6</sup> Statistical body of the European Union

However, we unfortunately have little information on the breakdown by different goods and services under this heading.

If a person who was resident in Sweden for less than a year sells services in Sweden, this is recorded as an import in the Swedish national accounts.

## Prostitution

### Legislation

On 1 January 1999, the Law prohibiting the purchase of sexual services<sup>7</sup> was adopted in Sweden. The prohibition applies everywhere, irrespective of whether the purchase occurs on the street, in dwellings, in restaurants, in brothels or via the Internet.

The law makes prostitution a criminal offence only for the purchaser and the offence is deemed to begin as soon as the purchaser contacts the seller/prostitute, e.g. on the street, and offers payment for sexual services.

However, the courts require high standards of proof to institute legal proceedings and sentence a purchaser of sex. This means that prosecution of a crime being committed requires members of the police to engage in such reconnaissance that it makes them eye witnesses to the dealings between the parties. In principle this means that only dealings which take place in a car or somewhere else outside can be verified. In the case of sexual services provided indoors it becomes almost impossible to prosecute.

According to statistics compiled by the National Council for Crime Prevention (*Brottsförebyggande Rådet*), the number of reported sex-purchase infringements of Law 1998:408 were:

1999: 94  
2000: 92  
2001: 86  
2002: 110  
2003: 300  
2004: 156

The prosecution ratio, i.e. the ratio between the number of suspected infringements and the number of infringements which resulted in indictment and the imposition of penalties, is just under two-tenths for infringement of

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<sup>7</sup> Law 1998:408.

the law prohibiting the purchase of sexual services. In cases where the accused was convicted only of the purchase of sexual services the penalties varied between 40 and 80 “day fines” [corresponding to 33.3% of a person's daily income, with social exemptions].. In one of the cases the accused was also convicted of serious assault and sentenced to one year in prison. The large number of cases reported in 2003 follows the discovery of a client register in connection with the detection of a brothel business.

### **Changes in prostitution practice following the adoption of the law**

In Sweden, the government has asked the National Board of Health and Welfare, *inter alia*, to constantly monitor and collect information on the scope and development of prostitution.

The report *Prostitution in Sweden (Kännedom om prostitution) 1998-1999* gives an initial description of the situation before and after the adoption of the law. The report is based on information collected via surveys of all police authorities and police sectors, all municipalities and a sample of restaurants, hotels and similar businesses and the local offices of RFSL<sup>8</sup>. Internet sites linked to prostitution were also identified and interviews were conducted with key informants including, *inter alia*, the police, social and health services, and a number of purchasers of sex.

A follow-up to this report, *Prostitution in Sweden 2003*, is based primarily on interviews with approximately 35 persons whose work places them in close contact with prostitutes. This report presents their knowledge of prostitution – or rather their perceptions and assessments.

The Swedish law against purchasing sex has been criticised for being ineffectual, for moving prostitution indoors and making the situation of prostitutes more difficult. However, the police and social workers who are in close contact with prostitutes agree that the sex trade has declined and in any event it is clear that street prostitution has decreased. There are indications that there are fewer clients on the street, as they are possibly afraid of being caught, but also that there is a larger proportion of clients who want to do “worse things” and have “weird cravings”.

In the preliminary work on *SOU 1995:15* [SOU = *Statens offentliga utredningar* (Reports of official commissions of inquiry)] it was estimated that the total number engaged in prostitution in Sweden was about 2 500, of

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<sup>8</sup> National Federation for Sexual Equality

which approximately 650 were engaged in street prostitution. Estimates made since the adoption of the law indicate a total of 425 engaged in street prostitution in 2003. However, it is much more difficult to get a clear view of indoor prostitution. Access to mobile phones and the Internet means that contacts between purchaser and seller can take place in secret. There is information that contacts are initiated at certain restaurants, hotels and dance halls, in connection with conferences and private parties, and on the Sweden/Finland ferries. In the case of the Internet, estimates vary – the same person may appear in different contexts and the advertisements may be out of date. However, there are a number of reports which indicate that there are about 100 people in Sweden who sell sexual services via the Internet.

### **Trafficking in human beings for the purpose of performing sexual services**

The national police force estimates that there are between 400 and 600 female victims of trafficking each year in Sweden<sup>9</sup>. Most are from the Baltic countries, Eastern Europe or Russia and there are even women from Thailand. These women become prostitutes in brothels and in sex clubs and are isolated from society in general. The women are guarded by pimps who often appropriate most of their earnings. The women do not know the language and have no permit to be in the country, so pimps have almost complete control over them. Sexual services are sought primarily via the Internet.

On 1 July 2002, trafficking in human beings for sexual purposes became a new crime in Sweden and, on 1 July 2004, criminal responsibility was extended to include trafficking within national borders and trafficking for the purpose of other forms of exploitation than sexual services, such as forced labour and trade in organs. Consequently, Sweden has a comprehensive legal framework against trafficking for the purpose of performing sexual services. According to the national police, the Law against purchasing sex is hindering the establishment of trafficking in Sweden. The profits are low, since traffickers do not dare to place the women on the street owing to the risk of discovery.

The following is a description of the conditions to which these persons may be exposed.

*The woman was lured to Sweden by the man she loved. On arrival her passport was taken from her and she was locked in an apartment, and*

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<sup>9</sup> Report 6: 2003

*forced to accept clients to perform sexual services on the grounds that she had a debt to pay off. She was forced to remain silent, as her pimps told her that if she revealed to anyone what she was doing in Sweden she would be thrown into prison, since prostitution was a serious crime and she was also an illegal immigrant. The woman succeeded in escaping and took her life by throwing herself from a bridge over a motorway.*

My assessment is that these women do not enter into a voluntary agreement regarding the services which they must perform, and figures for such activities should therefore not be included in the national accounts. However, since the Internet is used as a channel for selling sexual services, it is difficult to exclude this particular subset of the activity.

### **Demand - Estimating output value for prostitution**

A potential and very rough effort has been made to estimate demand on the basis of data from an interview survey conducted by the Swedish National Institute of Public Health in 1996<sup>10</sup>, according to which one in eight men in Sweden purchases sex on some occasion during his life. This means that almost 14 per cent of Swedish men have paid for sexual services at some time. This is equivalent to more than 430 000 men over the age of 18. The majority had done this on one or very few occasions, while a smaller group had had more than 20 contacts with prostitutes, and of these a group of 20 had had almost 700 such contacts. The majority, 77.9 per cent of contacts with prostitutes, had occurred abroad when travelling on holiday or for work and on mission.

Number of times	Approx. Average	%	Of total 430 000	Total number of purchases	Average price per occasion	Total consumption
1	1	33.9	145 770	145 770		
2-3	2.5	24.1	103 630	259 075		
4-10	7	30.5	131 150	918 050		
11-20	15	5.2	22 360	335 400		
21-50	35	5.2	22 360	782 600		
51-100	75	1.1	4 730	354 750		
Total			430 000	2 795 645	2 000	5 591 290 000

The columns "Number of times" and "Percentage" are based on the survey, otherwise the tables comprise own assumptions and calculations.

<sup>10</sup> Sex in Sweden, Swedish National Institute for Public Health

77.9% of sex purchases had taken place abroad, which means that domestic consumption represents only SEK 1 123 849 290.

Since the survey concerns the number of purchases during a respondent's life, it is in fact not possible to calculate an annual value on the basis of these data. However, assuming that a period of five years is involved, annual consumption is SEK 224 769 858. Price data also are assumed, but are to some extent based on price data mentioned in this context. Since a large proportion of the purchases took place abroad, SEK 2 000 may perhaps be on the high side.

This calculation is not considered usable for the following analysis. In addition, with the high proportion of purchases abroad, it would mean that 80% of all consumption, i.e. purchases which took place abroad, is already included in the final consumption expenditure of households. In that case the Swedish domestic market would only have a turnover of approximately SEK 225 million.

## **Different types of prostitution**

### **Street prostitution**

According to the National Board of Health and Welfare report "Prostitution in Sweden 2003", there is street prostitution in Stockholm, Gothenburg and Malmö.

The social services prostitution group in Stockholm knows of approximately 180-200 women per year with experience of prostitution. It is estimated that there are 25-30 women on the street every evening. The police in Stockholm report a significantly lower figure. They estimate that there are 50-60 women engaged in street prostitution, and that only 5-7 women are on the street every evening. The police report that some of the women have a substance-abuse problem. The prostitution group has also noted that some men are engaged in prostitution.

The social services prostitution group in Gothenburg knows of approximately 100 women per year with experience of prostitution. About 10-15 women are reported to be offering sexual services on the street each evening and very occasionally this figure can rise to around 20 women. It is also believed that there are fewer heroin addicts currently engaged in street prostitution. A group of women in their 40s, who had been in prostitution circles for many years, are reported to be leading more regular lives. Over the last five years the prostitution group has encountered about twenty women whom they suspect are trafficking in victims.

The social services prostitution group in Malmö reports that it knows of approximately 135 women in street prostitution. It is estimated that there are approximately 30-35 women on the street every evening. It is also estimated that the majority of the women, perhaps 90%, are heroin addicts.

### **Summary of street prostitution**

Street prostitution in Stockholm: approximately 190 (1998: 280 individuals)

In Gothenburg: fewer than 100 (1998: 286 individuals)

In Malmö: just under 135 (1998: 160 individuals)

This gives a **total of approximately 425 individuals**.

The drop in the number of prostitutes is primarily the result of the law prohibiting the purchase of sexual services, which entered into force on 1 January 1999.

The substance-abuse problem among women in street prostitution differs in the three cities. In Malmö the overwhelming proportion of prostitutes are reported to be heavy abusers, primarily of heroin, and figures of up to 90 per cent are mentioned. In contrast, in Stockholm and Gothenburg, the majority do not have serious substance-abuse problems. There are more non-abusers than abusers. In total, approximately half are estimated to be substance-abusers. Some individuals suffer from psychiatric disorders. Some are receiving sickness benefits and there are also some who are receiving social-assistance benefits. In general, the average age among street prostitutes has increased in recent years and there are few new recruits.

According to data from informants, those who are active in street prostitution have lived in Sweden for a long time and are not casual visitors.

An effort to calculate income from street prostitution is outlined below.

In *SOU 1981:71*, an attempt was made to calculate gross income for the approximately 900 persons engaged in street prostitution at that time. A conversion to 130 man-years and an annual income of SEK 300 000 gave a total income of SEK 40 million. The average income for the 900 part- and full-time prostitutes then becomes almost SEK 45 000. Calculated at 2004 values on the basis of the Consumer Price Index, this is equivalent to an average income of just under SEK 124 000.

However, since many are heavy substance-abusers, here we try instead to calculate the level of income necessary to finance an individual's substance abuse. This is based on the estimates made in *SOU 1998:18, Utredningen om*

*tullens verksamhet* [Report on customs' operations]. This report makes a calculation based on various scenarios of what volume of drugs are consumed in Sweden and what quantities are consumed by different consumer groups. However, the report is not specific about the volume of consumption. Instead, various consumption levels are discussed on the basis of different assumptions regarding annual consumption and the number of days of active substance-abuse. The following alternatives relate to heroin and amphetamines.

<b>Heroin</b>	<b>Different abuse alternatives</b>				<b>Average</b>
	<b>Alt 1</b>	<b>Alt 2</b>	<b>Alt 3</b>	<b>Alt 4</b>	
Dose in grams per day of substance abuse	0.5	0.5	0.8	0.8	
Number of days of substance abuse	100	250	200	250	
Annual consumption, in grams	50	125	160	200	134

  

<b>Amphetamines</b>	<b>Different abuse alternatives</b>				<b>Average</b>
	<b>Alt 1</b>	<b>Alt 2</b>	<b>Alt 3</b>	<b>Alt 4</b>	
Dose in grams per day of substance abuse	0.8	1	0.8	1	
Number of days of substance abuse	100	100	200	200	
Annual consumption, in grams	80	100	160	200	135

According to the above tables, average consumption by a heavy substance-abuser is calculated at 134 grams/year. The price of a gram of brown or white heroin is between SEK 900 and SEK 1 300, and of a gram of amphetamines approximately SEK 190<sup>11</sup>. On this basis, own-consumption of heroin costs between SEK 120 000 and SEK 174 000 per year, and own-consumption of amphetamines approximately SEK 25 000 per year.

Added to this are average living costs, which on the basis of various calculations<sup>12</sup> are estimated at between SEK 50 000 and SEK 60 000 per year for a single woman. However, these calculations do not include the costs of rent and holidays. A reasonable assumption is that such expenditure

<sup>11</sup> See section on drugs

<sup>12</sup> See also The Swedish Consumer Agency (Konsumentverket), Institutet för privatekonomi (Personal Finance Institute), LO-föreningssparbanken.

can be a further SEK 100 000 per year. In such a situation, an income of between SEK 125 000 and SEK 274 000 per year would be necessary.

This is about the level of the illegal earnings of between SEK 10 000 and SEK 20 000 per month that are offered when trying to attract new prostitutes<sup>13</sup>.

#### **Income from street prostitution**

Average income per prostitute per year	200 000
Number of prostitutes in street prostitution	425
Total output	<b>85 000 000</b>

(this thus requires 200 occasions per year at SEK 1000).

*SOU 1981:71* reports that the majority of prostitutes in Malmö have an annual income of over SEK 200 000. However, the report also points out that annual incomes above SEK 200 000 are likely to be a clear exception, but it is likely that the average income is above SEK 100 000. An income of SEK 150 000 in 1980 converted on the basis of the CPI is equivalent to SEK 417 000 in 2004. However, it is not self-evident that earnings from these activities have kept pace with the CPI trend over the same period.

In some cases there is also evidence that prostitutes support another person out of their own income. This can be someone the prostitute is living with or has some other form of relationship with. In some cases the prostitute finances the substance-abuse of both parties out of his/her own income.

#### **Internet**

Prostitution activity via the Internet is substantially more difficult to tackle than street prostitution. A certain portion of what is offered via the Internet comes under the heading of trafficking in human beings. Net prostitution occurs in all parts of the country and the prostitutes travel around to different places to remain anonymous or to get new clients. Many of the women have a permanent dwelling and sometimes family and friends who do not know that they are working as prostitutes. Substance-abuse is not as common as among street prostitutes, but it does exist. Few use narcotics, but many are addicted to alcohol or pills.

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<sup>13</sup> See SOU 2001:14, page 382.

The women are not always acting alone. There are people who set up websites for a lump sum, a commission or a combination of money and sex. The cost for a website can vary between SEK 1 500 and SEK 10 000 and to update the website can cost around SEK 5 000<sup>14</sup>.

Sven-Axel Månsson and Peder Söderlind, who have done considerable research on sexual exploitation on the Internet and have also published the book "*Sexindustrin på nätet*" (The sex industry on the net), report that at least 80-100 women market themselves on Swedish websites. The newspaper *Aftonbladet* conducted a survey in 2000 and found that 106 women sold sexual services on the Internet.

The prices indicated on the websites varied for different services and in February 2005 were between SEK 1 000 and SEK 4 000.

An average price of SEK 2 500 for 100 women who have 500 contacts per year amounts to a turnover of SEK 125 million annually, equivalent to SEK 1.25 million per woman.

#### Internet prostitution

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Average income per prostitute and occasion	2500
Number of prostitutes via Internet	100
Number of contacts per year per person (assumed)	500
Total output	<b>125 000 000</b>

(Equivalent to an average income per year of SEK 1.25 million per person)

However, this category also includes active women who have spent less than one year in Sweden. Their income should not be included in Swedish output,

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<sup>14</sup> According to articles in *Aftonbladet* in December 2000.

but it is very difficult to estimate the scale. These women generally have somebody who organises their activity, and who takes a share of the income. Probably the organisers have lived for longer than one year in Sweden in order to create a contact network, and in that case those persons' incomes should be included.

### **Sex clubs**

#### **Numbers and employees**

In 1998, the National Commission on Sex Crimes [*Sexualbrottskommitté*] (2001:14) conducted surveys of the national police authorities and social services in Stockholm, Gothenburg, Malmö and Norrköping in order to obtain information, *inter alia*, on the activity and scope of sex clubs. The surveys related to the situation in spring 1999. Replies were supplemented by interviews with representatives of the social services, the public prosecutor's office and police authorities, and by study visits to sex clubs. All the material indicated that there were a total of **13 sex clubs in Sweden**: four in Stockholm, three in Gothenburg, two in Karlstad and one each in Eskilstuna, Borås, Jönköping and Strömstad. Stockholm and Visby also had a sex club, the activity of which consisted solely of a bar service and on-stage nudity, such as striptease.

The survey responses indicated that the majority of women in the sex-club branch are active in Stockholm and Gothenburg. The police authorities report that approximately 400 women work in Stockholm's sex clubs. In Eskilstuna and Visby the figures are 9 and 6 women respectively. In the Jönköping club, one or two women work simultaneously but the total numbers could not be ascertained. In one of the clubs in Karlstad there is only one woman. Internet data suggest that approximately 40 women work in one of the clubs in Gothenburg and approximately 50 in another.

#### **Turnover**

There is not enough information to estimate the turnover of the sex clubs. However, a ruling from *Svea Hovrätt* (court of appeal) in November 1998 gives an indication of the sums circulating in the branch. The representatives of the Stockholm clubs *Studio Anna / New Studio Anna* and *Tusen och en Natt (1001)* were convicted, *inter alia*, of financial crimes. From the case it

emerged that the surplus liquidity from the activity in the clubs over a two-year period had amounted to about SEK 20 million<sup>15</sup>.

### **Range of activities**

The visible portion consists of striptease performances on stage. This portion can also include the sale, rental and showing of pornographic films (on large video screens and in private booths) and the sale of pornographic magazines and sex articles. After the performance the women circulate among the audience and take orders for private/personal posing.

Posing generally occurs in a booth or adjacent room. During the posing the woman and the client are separated by a plate of glass or chicken wire. Another type of private posing, which is offered to individuals or smaller groups of clients, is known as “table dancing”, where the woman poses standing on a table or a raised stage. Also in some of the Stockholm clubs there are special rooms for massage and bubble pools, where the client is allowed to bathe together with the woman.

The clubs serve coffee, soft drinks, light and medium-strength beer and some light snacks. The clubs do not have a serving licence under the Alcohol Act.

### **Price data**

Generally there is a price list for the various services offered. The price for a private posing at a club in Gothenburg can vary between SEK 300 and SEK 1 000. The sex club *Tusen och en natt (1001)* in Stockholm had the following price list:

Erotic body massage: SEK 2 000 per 30 minutes

Bath in bubble pool with your favourite girl: SEK 3 500 per 30 minutes

VIP room, accompany the girl to her own bedroom: SEK 5000 per 30 minutes

Spend the whole night with the girl of your choice, do what you will, for as long as you like: SEK 15 000<sup>16</sup>.

### **Payment**

The services provided in *Studio Anna / New Studio Anna* and *Tusen och en natt (1001)* were paid for in 80 per cent of cases with some form of

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<sup>15</sup> Svea Hovrätt (Court of Appeal), Case No B1103/98, DB 113 (no leave to appeal to the Supreme Court).

<sup>16</sup> The price list has been taken from the Court of Appeal judgment, district court appendix No 7.

electronic payment card<sup>17</sup>. A survey of the clients at the two clubs shows that many had paid with a company card. The survey was based on 6 500 card purchases for a total of SEK 23 800 000 over a two-year period.

Approximately half of the men were businessmen or company directors. The 4 000 visitors included persons who had paid almost SEK 100 000 in one evening. In most cases the invoices were issued on a number of restaurants and other companies around the country, thereby concealing the fact that a visit to a sex club was involved. The businesses named in the judgments of Svea Court of Appeal are included in Statistics Sweden's company database for the period in question and in the national accounts, with the data reported to the tax authorities. Thus income and expenditure for club activities are already included in the national accounts under SNI [Swedish Industrial Classification] branches 93022, 93040 and 55300.

### **Crime**

Various forms of crime arise in connection with sex club activity, e.g. drug crimes, illegal threats, fraud, assault and battery, blackmail, infringement of safety and health regulations, pimping, and violation of the law prohibiting the purchase of sexual services. Some crime data are based on criminal convictions, others on responses to surveys of police authorities and social services, and others on information received from people who have spent time in a sex-club environment.

One example, provided by police authorities, of a crime carried out in the above-mentioned sex clubs is that a client's credit card can be debited several times for the same amount. This could be SEK 5 000 for a glass of water or SEK 140 000 for a full night, while the client has no memory of the night because somebody drugged him. Those clients who protested, were silenced, in some cases by threats.

### **Prostitution contacts formed in sex clubs**

In connection with the investigation of the sex clubs, it emerged that in one of the smaller clubs the owner might sell prostitution services for SEK 1 000. In another small club it might be possible to pay SEK 1 200 partly to enter the club premises, partly to watch nude performances on stage and partly to have access to a prostitute who was waiting in an apartment or hotel room.

Via contacts with women who have experience of working in sex clubs, the prostitution team in Gothenburg has obtained information that certain

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<sup>17</sup> Data from the Court of Appeal judgment, district court judgment, p.26

women offer prostitution services. The services are provided outside the club's premises, since the club owners take care that prostitution does not take place in the actual club.

### **Nationality**

*SOU 2001:14* reveals that women of foreign origin are involved in the sex clubs. If these persons reside in Sweden for less than one year, the income should not be recorded under Swedish output, but rather as imported services.

### **Wages and working conditions**

*SOU 2001:14* states that police in Stockholm have observed that the recruitment of girls to the sex clubs often takes place in schools. They are tempted by the undeclared wages of between SEK 10 000 and SEK 20 000 per month.

The women do not have any job security, since in principle they are never employed formally by the clubs. Frequently the income is undeclared. Some of the club owners ensure that the women have an "F" tax form. In that way, by virtue of the fact that the women are self-employed, the club owners believe that they have no obligations as an employer. However, it has been shown to be difficult for the women to declare and pay tax on their income. For instance, in certain cases in Gothenburg the tax authorities accepted that tax should be paid for dancing, but refused in the case of stripping, on the grounds that such activities are not legal.

The economic transactions of the women and the club owners take different forms. Some club owners require that the woman pay to reside on the premises. In some cases the woman has a right to a commission based on the client's payment. In one sex club in Stockholm the women had a commission on both drinks which the client purchases in the bar and services he purchases in the club's private rooms. The commission amounted to 25 per cent or 50 per cent. The result is that the women are largely at the mercy of the club owners. It is not uncommon that the women fall outside the social safety net, e.g. the social security system.

Some women in the sex club use drugs for their own consumption. These are primarily amphetamines, cocaine and smoked heroin. There are some cases where the women are introduced to substance-abuse in the clubs.

### **Sex clubs as an introduction to prostitution**

It may perhaps be said that sex clubs occupy a grey zone with regard to the sale of sexual services<sup>18</sup>. Some of those interviewed in the Board of Health and Welfare indicated that women in prostitution had often spent some time in a sex club before taking the step into prostitution and that the women's work in the sex club can thus mean a gradual acclimatisation to the prostitution environment.

*SOU 2001:14* reports that it is reasonable to assume that the total number of women working in sex clubs is at least 500. The majority are active in Stockholm and Gothenburg.

A rough calculation gives the following estimate:

#### **Prostitution in connection with sex clubs**

Average income per prostitute and occasion	5000
Number active in sex clubs	500
Number of contacts per year per person (assumed)	150
Total output	<b>375 000 000</b>
(Gives an average income per year of SEK 750 000 per person)	

The calculations are based on the view that the people who work in sex clubs do not sell sex in the clubs, but only arrange contacts there. The sale of sex then takes place outside the club business, on other premises, hence the low number of contacts. This restrictiveness arises because the clubs do not want to risk selling sexual services on their premises. Such persons are or should be self-employed.

The activity in which the women are engaged in the sex club is not illegal, but it may not be recorded if the clubs are not included in the population for the national accounts – in principle the business register. Adjustments are then made to the national accounts in order to cover up for such concealed activities.

#### **Other prostitution**

There is information that prostitution occurs in certain restaurants, hotels, conferences and escort services etc. However, this activity is among the most difficult to survey and for this reason no estimate could be made.

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<sup>18</sup> Social security report *Information on prostitution 1998-1999, SoS-report 2000:5*, p.56ff

Experienced analysts of this activity consider that it takes place on a very small-scale.

## Summary

To sum up, this very rough estimate would mean that turnover on prostitution is about SEK 585 million. However, as pointed out earlier, some of this money probably accrues to people who reside in Sweden for less than one year.

## Overview of data

### Number of prostitutes

Street	425
Internet	100
Clubs	500
	1025

### Average number of contacts per prostitute and year

Street	250
Internet	500
Clubs	150

### Average price per occasion

Street	1000
Internet	2500
Clubs	5000

**Average turnover per prostitute: SEK 571 000 per year**

**Total turnover: SEK 585 000 000**

Prostitutes working in the context of clubs and via the Internet incur certain expenses for premises, travel and working clothes. These expenses should be deducted from the gross income. A standard reduction of about 20% gives a **value added for the activity of SEK 470 million.**

A prostitute who had worked in the sector for 19 years and applied for an "F" tax form, reported her estimated annual income as SEK 900 000 per year in her application to the tax authorities.

In *SOU 1981:71*, gross income from prostitution in Sweden was calculated. The total income added up to SEK 120 million. Indexed in line with the CPI at 2004 values, this is equivalent to SEK 334 million. The number of prostitutes was estimated at just under 2 000.

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## Narcotics

The aim of this study is to survey the availability and use of narcotics from the perspective of the Swedish national accounts. At present there is no separate explicit subheading for narcotics in the national accounts. However, the calculation methods used to compile the national accounts take narcotics into consideration to some extent. Purchases made abroad are included under “foreign exchange for travel”, which is calculated on the basis of data on foreign exchange and credit-card transactions. However, a relatively large proportion of the transactions are not included. Including narcotics in the Swedish national accounts will primarily have an impact on the final consumption expenditure of households and output.

The statistical office of the EU, Eurostat, has been trying to define the best possible methods and sources for the relevant calculations<sup>19</sup>. Eurostat suggests that drugs with different areas of use and prices should be studied separately. This report makes a distinction between the following substances: amphetamines, heroin, cannabis, ecstasy and narcotic medicines.

The report investigates the possibility of estimating narcotics flows for a given year (2001), the idea being that this year can then be taken as a benchmark from which extrapolations can be made using suitable indicators. Which indicators might be suitable for such extrapolation is not discussed here.

Narcotics is a wide term which covers many different substances. In Sweden, all use of drugs covered by the “Medical Product Agency’s regulations on listing narcotics” is classified as drug abuse. This list changes over time, e.g. when new substances appear.

Below we calculate the significance of narcotics for the final consumption expenditure of households, output, import and export.

### Final consumption expenditure of households

The basic premise is that all narcotics used are consumed by households. Efforts have been made to estimate total consumption in various reports<sup>20</sup>. These estimates are based primarily on assumptions regarding the number of

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<sup>19</sup> EUROSTAT, Measurement of illegal activities.

<sup>20</sup> *SOU 1998:18*, *Ds 1999:46* and report of Swedish Customs etc. ”Att mäta samhällsnyttan av myndigheternas insatser” (Measuring the social benefit of public sector activities), 2000.

addicts and their average consumption. A similar model will be adopted here, with data on the number of addicts, prices, average dose and days of abuse as input. The model is constructed as follows:

Household final consumption expenditure per substance = Price (SEK/gram) x number of addicts x average dose (grams per day of abuse) x number of days of abuse.

The calculation of drug consumption is spread across five types of drugs: cannabis, heroin, amphetamines, ecstasy and narcotic medicines. This is obviously a simplification of the reality. For example, there is also small-scale consumption of cocaine, GHB and khat. However, the market for these is small in Sweden. Cocaine abuse has increased slightly in recent years, but is nonetheless considered to represent a very small portion of total drug consumption<sup>21</sup>. Ecstasy abuse occurs primarily at rave parties and in club and restaurant circles<sup>22</sup>.

Drug abuse encompasses everything from brief or one-off experiments to daily abuse. In calculating household final consumption expenditure on drugs it is therefore relevant to make a distinction between heavy abuse and other abuse. By "heavy abuse" is understood all abuse via injection, irrespective of the substance and frequency, and all daily or almost daily use of drugs, irrespective of the method of intake. In the case of heavy abuse, a number of surveys and estimates have been made of the number of abusers and their consumption.

By "other abuse" is meant all abuse which is not classified as heavy abuse, i.e. everything from brief/experimental use to more regular use which is not daily or almost daily. Various interview and questionnaire surveys provide some data on this group. Below, there are estimates for heavy abusers and other abusers.

### **Heavy abusers and their consumption**

It is the heavy users, i.e. the more regular abusers, who account for the major portion of drug consumption. To estimate the consumption of this group, we need data on the number of heavy abusers, the prices of different drugs, which substances are consumed and how often the abuse occurs, i.e. the number of days of active abuse.

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<sup>21</sup> See e.g. *SOU 1998:18*.

<sup>22</sup> The National Criminal Investigation Department and Swedish Customs report "Drug situation in Sweden", 2001.

### Number of heavy addicts

National surveys of heavy addicts were conducted in three different studies for the years 1979, 1992 and 1998<sup>23</sup>. In these surveys, respondents with knowledge of narcotics abuse reported the number of addicts known to them. A number was then calculated for unreported cases using a special statistical method (case-finding method) and this number was added, i.e. the number of addicts unknown to the authorities. In the 1998 survey, the previous calculations of unreported cases were revised, since certain assumptions had changed and the statistical methods had been refined. The 1979 survey was a total survey, while the two others were based on a sample of municipalities.

In Granath, Svensson and Lindström's (2003) report, the number of heavy addicts was estimated for the years 1997–2001. The report is based on medical data, and the number of heavy addicts was estimated at 26 000 in 1998<sup>24</sup>. It was estimated that the number of addicts rose thereafter to approximately 28 000 in 2001 (between 27 640 and 28 870). The following table presents a summary of the available estimated data on the number of heavy addicts.

### Number of heavy addicts

Year	Number of heavy addicts
1979	15 000
1992	19 000
1998	26 000
2001	28 000

Source: Olsson, Adamsson Wahren and Byqvist, 2001 and Granath, Svensson and Lindström, 2003.

### Prices

The Swedish Council for Information on Alcohol and Other Drugs (*CAN*) collects price data for the most common drugs. For the period 1988–2003 price data are available for hashish (and to some extent marijuana), amphetamines, cocaine and heroin. From the year 2000 onwards, price data were also collected for ecstasy, khat, LSD and GHB. Prices are collected by selecting persons with a good insight into the local drug situation in different municipalities to respond twice a year to a questionnaire which includes questions on the street price of different drug substances. The respondents

<sup>23</sup> Olsson, Adamsson Wahren, Byqvist, 2001.

<sup>24</sup> Olsson, Adamsson Wahren, Byqvist (2001) also arrived at an estimate of 26 000 heavy drug addicts in 1998.

are asked to give the “street prices” on the basis of the usual amount dealt, converted to SEK per gram as appropriate.

### Average prices for various drugs 1999-2004

Year	Hash SEK/g	Mari- juana SEK/g	Am- Cocaine SEK/g	Am- Cocaine SEK/g	Brown heroin SEK/g	White heroin SEK/g	LSD SEK/ trip	Ecstasy SEK/ tabl.	Khat SEK/ bunch	GHB SEK/ Capsule
1999	95	86	297	1 112	1 708	1 750				
2000	85	70	266	860	1 331	2 267	103	159	269	36
	84	69	265	914	1 314	1 910	87	144	243	34
2001										
2002	83	65	268	870	1 473	1 953	96	137	333	39
2003	84	76	271	842	1 310	1 974	80	130	300	39
2004	83	77	267	842	1 290	1 847	82	122	270	40

Source: Ulf Guttormsson, *CAN*. “*Narkotikaprisutvecklingen i Sverige 1988-2004*” [Drug price trends in Sweden 1988-2004].

The average price does not take account of regional price differences, volume discounts, variations in purity levels, etc. In terms of regional price differences, prices are lower in the cosmopolitan regions and in southern Sweden, and lowest of all in the most southern administrative provinces. There are probably substantial volume discounts. A relatively common phenomenon is that addicts finance their abuse by buying larger volumes of drugs at a lower unit price and then sell some on at the “normal” street price (interview with *CAN* and the National Criminal Investigation Department). In *CAN*'s view it is not impossible that the real price, taking account of volume discounts, is about 70% of the street price. The data are rough estimates and no reliable data are available. However, the conclusion must be that it is best to take account of volume discounts. In the following table *CAN*'s prices have been adjusted on the assumption that the real price is 70% of the street price.

### Estimated prices for various drugs 1999-2004, taking account of volume discounts.

Year	Hash SEK/g	Mari- juana SEK/g	Am- Cocaine SEK/g	Am- Cocaine SEK/g	Brown heroin SEK/g	White heroin SEK/g	LSD SEK/ trip	Ecstasy SEK/ tabl.	Khat SEK/ bunch	GHB SEK/ Capsule
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1999	67	60	208	778	1 196	1 225				
2000	60	49	186	602	932	1 587	72	111	188	25
2001	59	48	186	640	920	1 337	61	101	170	24
2002	58	46	188	609	1 031	1 367	67	96	233	27
2003	59	53	190	589	917	1 382	56	91	210	27
2004	58	54	187	589	903	1 293	57	85	189	28

Source: Own calculation. Estimated price = 0.7 x CAN's average prices.

### Dominant drugs of abuse

Central stimulants (primarily amphetamines), opiates (primarily heroin) and cannabis are the dominant narcotic substances used by heavy drug abusers in Sweden. Of these, central stimulants used to be the most common drugs and the ones most frequently dominating the abuse pattern. On comparing the 1979, 1992 and 1998 surveys, it emerged, *inter alia*, that the proportion of heavy addicts using central stimulants and cannabis had fallen slightly in the 1998 survey, while opiates had become more common.

In the 1998 survey, there were also fewer respondents who could state which substance dominated the abuse pattern. This was probably due to an increase in combined abuse where it was difficult to determine what dominated, as well as less knowledge among those working with drug issues in the various agencies.<sup>25</sup> Despite the risk that the pattern may look slightly different today, the 1998 survey is the only source available to calculate heavy consumption of various substances. The following table records narcotics use broken down by dominant abuse.

### Users and abusers broken down by dominant substance, %

Substance	Proportion
Central stimulants	32.2%
Opiates	27.5%
Cannabis	8.1%
Alcohol	7.9%
Tablets	3.0%
Combined drug abuse	1.3%
Not specified	20.1%
Total	100.0%

Source: Olsson, Adamsson Wahren and Byqvist, 2001.

Central stimulants consist primarily of amphetamines, and opiates primarily of heroin. By tablets is meant mainly different types of narcotic medicines.

<sup>25</sup> Olsson, Adamsson Wahren and Byqvist, 2001.

In the following, these data have been streamlined so that the number of abusers in 2001 is broken down only by amphetamines (central stimulants are assumed to consist primarily of amphetamines), heroin (opiates are assumed to consist primarily of heroin), cannabis and narcotic medicines; tablets are assumed to consist primarily of narcotic classified medicines. This means that where it was not possible to determine the dominant substance, abusers are broken down according to the same pattern as abusers where the dominant substance could be identified. In addition, the assumptions that only amphetamines, heroin, cannabis and narcotic medicines are consumed are a simplification of the reality. For example, there is consumption of khat, cocain and ecstasy.

Among narcotic medicines, substances which contain benzodiazepines are the most common. Within this group, rohypnol is the most common medicine available on the illegal market<sup>26</sup>. Medicines classified as drugs are used separately or in combination with other substances in order to increase the effect of the drug in question.

#### Number of abusers in 2001 broken down by main substance

Substance	Abusers	Proportion
Amphetamines	12 742	46%
Heroin	10 891	39%
Cannabis	3 195	11%
Narc. Medicines.	1 172	4%
Total	28 000	100%

Source: Own calculation. According to Olsson, Adamsson Wahren and Byqvist (2001), for 1 783 addicts central stimulants were the dominant substance, for 1 524 opiates, for 447 cannabis and for 164 tablets. Calculated as a percentage this gives the following breakdown 46% central stimulants (here interpreted as amphetamines), 39% opiates (here interpreted as heroin), 11% cannabis and 4% tablets (here interpreted as narcotic medicines). This breakdown applies to the number of abusers in 2001.

*SOU 1998:18* estimates how many drugs are consumed in Sweden and the volumes used of the different substances. However, the report does not give any exact data regarding the scale of consumption. Instead different consumption levels based on different assumptions of annual consumption and the number of active days of abuse are discussed. The following table outlines the various assumptions/scenarios based on dose in the form of grams per day of abuse and number of active days of abuse. It is very difficult to estimate the number of active days of abuse. A heavy addict does

<sup>26</sup> The National Criminal Investigation Department and Swedish Customs report "Drug situation in Sweden", 2003".

not use drugs daily because of combined abuse, or because the person has been placed in care/prison etc. The following table also shows that the number of active days of abuse have a major impact on the annual consumption per abuser.

For amphetamines, the annual consumption per abuser was estimated at between 80-200 grams. The lower limit can be said to apply to combined abusers and the upper limit to those who only use amphetamines on a large scale. For heroin, the range is between 50 and 200 grams and for cannabis between 25 and 300 gram. In the case of cannabis the lower estimate relates to small-scaled consumer, i.e. primarily users and abusers who cannot be denoted as heavy or combined drug users and abusers.

#### **Annual consumption per user/abuser for amphetamines, heroin, cannabis and cocaine**

Substance	Text	Scenario			
		A	B	C	D
Amphetamines	Grams per day of abuse	0.8	1	0,8	1
	Number of days of abuse	100	100	200	200
	Annual consumption, grams	80	100	160	200
Heroin	Grams per day of abuse	0.5	0.5	0.8	0.8
	Number of days of abuse	100	250	200	250
	Annual consumption, grams	50	125	160	200
Cannabis	Grams per day of abuse	1	1	0.5	
	Number of days of abuse	150	300	50	
	Annual consumption, grams	150	300	25	

Source: The data are compiled by the National Institute of Public Health and reported in Annex 1 to *SOU 1998:18*. Annual consumption in grams is our own calculation.

Calculations of consumption of amphetamines, heroin and cannabis have also been compiled by Swedish Customs etc.<sup>27</sup> The annual consumption of amphetamines per user/abuser is estimated at 360 grams/year (1.5 grams/dose x 240 days), heroin at 274 grams/year (1.5 grams/dose x 182.5 days) and cannabis at 365 grams/year (1 gram/dose x 365 days). The estimates are higher than those of the National Institute of Public Health, but they are not corrected for users/abusers placed in care or in prison. This therefore indicates that consumption is at the higher end of the National Institute of Public Health's range.

<sup>27</sup> Swedish Customs etc. "*Att mäta samhällsnyttan av myndigheternas insatser*" ("Measuring the social benefit of public sector activities"), 2000. The estimates of annual consumption are based on calculations made in *Ds 1999:46*.

### Calculation of consumption by heavy abusers

As shown from the above, there is a relatively large degree of uncertainty regarding the level of annual consumption of the respective substances. Certain assumptions must be made to estimate total consumption. The annual consumption per abuser is assumed to be 160 grams for amphetamines, 160 grams for heroin and 300 grams for cannabis. In the case of amphetamines and heroin, alternative C of the National Institute of Public Health's four scenarios is thus used, while for cannabis the higher range is used. The National Institute of Public Health's data include an assumption regarding combined abuse, where the number of abusers is broken down by dominant substance. Annual consumption by these abusers should lie in the upper part of the National Institute of Public Health's range. For medicines classified as narcotics a dose of 5 tablets per occasion is assumed (based on discussions with the National Criminal Investigation Department), the number of active days of abuse per year is estimated at 200 days, giving an annual consumption of 1 000 tablets.

On the basis of the above assumptions regarding the substances used by abusers, their annual consumption and the street prices arrived at by *CAN* (corrected for volume discounts), total consumption is estimated at around SEK 2.2 billion. Consumption expenditure per abuser is substantially higher for heroin than for other substances. Heroin is also the drug where quitting is most difficult.

### Consumption of drugs 2001 broken down by types of substances

Substance	Number users	Annual consumption g/person (1)	Annual consumption. Kg (1)	Price SEK/g (1)	Annual consumption SEK '000 /person	Annual consumption SEK million
Amphetamines	12 742	160	2 039	186	30	378
Heroin	10 891	160	1 743	1 003	161	1748
Cannabis	3 195	300	959	58	17	55
Narcotic medicines	1 172	1000	1 172 000	18	18	21
Total	28 000					2 203

(1) Narcotic medicines: number of tablets and price per tablet.

Source: Own calculation. Annual consumption Kg = (number of abusers x annual consumption gram/pers)/1 000. Annual consumption SEK million = (number of abusers x annual consumption gram/pers x price SEK/gram)/1 000 000. Prices: With the exception of narcotic medicines, the prices are based on *CAN*'s prices corrected for volume discounts. For cannabis, a weighted price between hashish (90%) and marijuana (10%) is used. The weights are based on Swedish Customs and police seizures in 2004. For heroin, a weighted price between brown heroin (80%) and white heroin (20%) is used. The weights are taken

from the "World drug report 2004" of the United Nations Office on Drugs and Crime. Narcotic medicines are based on the National Criminal Investigation Department and Swedish Customs price data for rohypnol (Drug situation in Sweden, 2001). The unit price on the street is SEK 25-30. For larger quantities, e.g. about 500 tablets, the price falls to SEK 10 per unit. Here a price of SEK 18 per unit is assumed.

The above estimates are uncertain since they are based on several assumptions regarding the number of abusers per substance, quantity per day of abuse and number of days of abuse. An example of this uncertainty is that simply by varying the size of the dose and the number of days of abuse in accordance with the National Institute of Public Health's lowest or highest scenario, the annual consumption of amphetamine and heroin varies between SEK 736 million and SEK 2 659 million.

#### **Other users/abusers**

Other users/abusers consist of users who are not classified as heavy users. This includes in part those who engage in occasional/experimental use and in part those who are at a stage between occasional use and heavy abuse. The information available in this field comes from various interview and questionnaire surveys. Since 1971, annual surveys have been conducted among school children in grade 9 (aged 15) and recruits for military service. Certain information is also obtained in interview surveys with young people aged 16–24 years, and in the total population.<sup>28</sup>

The school and recruit surveys ask, *inter alia*, if the respondents have ever used drugs and if they have used drugs any time in the past month, and about their attitude to drugs. According to these surveys, 8% of school children and 18% of recruits had tried drugs on some occasion in 2002. About 3% of school pupils and recruits stated that they had used drugs in the past month (over the period 1998–2002). Their experience of drugs consisted primarily of cannabis use. In later years, almost 60% of those with drug experience in these surveys had used only cannabis, while 5–10% had used only drugs other than cannabis. Ecstasy and amphetamines are now almost the most common. If illegally used medicines (generally sleeping tablets/tranquilisers) are included in the picture, these substances are as common as ecstasy and amphetamines. The surveys indicate changes in attitudes to and experience of drugs on the part of young people. However, the underlying data are not sufficient to calculate the drug consumption of other users/abusers.

Drug use by young people has also been studied in telephone surveys in 1994, 1996, 1998 and 2000. The proportion of 16- to 24-year-olds in these

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<sup>28</sup> The surveys are discussed *inter alia* in CAN's report "Drug trends in Sweden – 2003 Report".

studies who said that they had tried drugs was 4%, 10%, 11% and 13% respectively. In 1996, 1998 and 2000, approximately 5% had used drugs in the previous 12 months. Broken down by age group, approximately 3% of 16- to 18-year-olds, approximately 6% of 19- to 21-year-olds and approximately 4% of 22- to 24-year-olds said that they had used drugs in the previous month.

Direct interviews of the population aged between 15 and 75 years were conducted between 1988 and 2000 (up to 1991, between 16 and 74 years). In these studies, approximately 12% of the population stated that they had tried drugs on some occasion. About 1% of the population had used drugs in the past 12 months. Experience of drugs was highest amongst the younger respondents and almost non-existent in the group aged between 50 and 75 years. In most cases the experience involved only cannabis. About 1–2% stated that they had tried amphetamines or cocaine, while even fewer listed other types of drugs. The table below indicates the proportion having used drugs in the previous 12 months. As seen from the table, the proportion of 15- to 29-year-olds who had used drugs in the previous 12 months is lower than in the youth surveys conducted.

**Proportion (%) of persons who had used drugs in the previous 12 months, broken down by age**

Years	15-29	30-49	50-75	All
1988	2	1	-	1
1989	2	1	-	1
1990	2	1	-	1
1991	2	1	-	1
1992	2	0	-	1
1993	2	0	-	1
1994	2	0	-	1
1996	1	0	-	1
1998	2	1	-	1
2000	2	1	-	1

Source: The table is taken from *Drogutveckling i Sverige* [Drug trends in Sweden] – 2003 report. The surveys were conducted by the market and opinion research companies *SIFO* and *TEMO*.

To calculate drug consumption by other users/abusers, some assumptions need to be made. It is assumed here that the direct interviews of the total population reflect use which is not classified as heavy abuse. The 2001 survey covered 6 547 861 persons aged between 15 and 75 years. If 1% of these had used drugs in the previous year, this is equivalent to approximately 655 000 inhabitants.

Apart from estimating the number of users, assumptions must be made regarding the substances and quantities used. All the above surveys indicate that cannabis accounts for an absolute majority of consumption. Direct interviews of the entire population show cannabis use to be slightly higher than emerges in surveys of school children and military recruits. What this may indicate is that other drugs are more widespread in the younger age groups. However, since any such calculation will only be a rough estimate, there is no differentiation by age. Instead it is assumed, on the basis of the results of the population surveys and youth surveys, that 95% use cannabis, 2% use amphetamines, 2% use ecstasy and 1% use narcotic medicines.

In the report *SOU 1998:18*, the National Institute of Public Health estimated drug consumption (see section on the number of heavy users/abusers and their consumption levels). There it was assumed that small-scale cannabis users smoke around 0.5 grams per week. That calculation by the National Institute of Public Health did not include those who had consumed cannabis only on a few isolated occasions, as is the case here. Consumption should thus be somewhat lower than 0.5 grams per week. Here it is assumed that every user consumes 0.5 grams on 25 occasions per year. The same report also includes different dose sizes for, *inter alia*, amphetamines. These are based on health-care records and refer to consumption by those who use drugs on a more continuous basis. The report points out that sporadic users use small doses at irregular intervals. The lowest option for amphetamines put the daily dose at 0.8 grams and the number of days of active use at 100 annually. Thus small-scale consumers should have a lower dose and a lower number of annual days of use. Here the assumption is 25 days of use per year with a dose of 0.4 grams per day<sup>29</sup>. In the case of ecstasy and narcotic medicines, the assumption is a dose of 3 tablets per day of use and an average of 25 days of use per year.

In the following table, consumption is calculated by multiplying the above assumptions regarding the number of small-scale consumers, dose sizes, days of use and prices. The price is not corrected for discounts, since only large consumers should be able to obtain discounts. As can be seen, consumption by small-scale consumers is minor compared with heavy users/abusers and the assumptions made regarding dose sizes and number of days in the case of amphetamines and ecstasy do not influence the outcome to any great extent.

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<sup>29</sup> According to staff at the Stockholm County Council Centre for Drug Dependence, the dose for ecstasy varies between about ½ and 5 tablets per day of use.

**Drug consumption by other users/abusers, 2001**

Substance	Number users	g/dose (1)	Number doses/yr	Annual consumption on Kg (1)	Price SEK/gramme (1)	Annual consumption SEK million
Amphetamines	1 310	0,4	25	13	265	3
Cannabis	62 205	0,5	25	778	82.5	64
Narcotic medicines	654	3	25	49 050	25	1
Ecstasy	1 310	3	25	98 250	144	14
Total	65 479					83

(1) Ecstasy and narcotic medicines, number of tablets and price per tablet.

Number users = 1% of population aged between 15 and 75 years

Consumption kg = (Number users x g/dose x number doses/year)/1 000

Consumption SEK million = (number users x g/dose x number doses/year x price SEK/g)/1 000 000

Prices: The prices are based on CAN's data, but in the case of narcotic medicines the price quoted by the National Criminal Investigation Department is used. The prices are not corrected for discounts. In the case of cannabis, a weighted price between hashish (90%) and marijuana (10%) is used.

**Summary – Final consumption expenditure of heavy users/abusers and other users/abusers**

Household final consumption expenditure consists of the combined consumption of heavy users and other users. Above, the consumption of heavy users was estimated at SEK 2 203 million and consumption by other users at SEK 83 million. The total final consumption expenditure of households was estimated at SEK 2 286 million.

**Household final consumption expenditure (SEK million) and quantity consumed (kg and number of tablets) broken down by substance**

Substance	Quantity Kg (1)	Value SEK million
Amphetamines	2 052	382
Heroin	1 743	1 748
Cannabis	1 736	120
Narcotic medicines	1 221 050	22
Ecstasy	98 250	14
Total		2 286

(1) For narcotic medicines and ecstasy the number of tablets is given

### Comparison with previous calculations

Consumption of heroin, cannabis and amphetamines was estimated in the past in *SOU 1998:18* and *Ds 1999:46*. In these reports, consumption was estimated at about SEK 1 100 million and 1 200 million respectively. In both surveys consumption was calculated on the basis of various assumptions concerning the number of users per substance and the cost per day of use. The number of users was based on the 1992 survey of user numbers. The quantity of drugs consumed was calculated in two different reports<sup>30</sup>. There are substantial differences in these reports, particularly in the case of cannabis. In one instance, cannabis consumption is estimated at 3 000 kg<sup>31</sup> and in the other at 1 090 kg<sup>32</sup>. Cannabis is the drug which is used most in combined abuse, thereby making it considerably more difficult to estimate consumption. In both reports, heroin abuse was at a lower level than is the case here. However, this can be explained by the fact that heroin abuse has increased since those estimates were made<sup>33</sup>.

### Output

Output arises through domestic output and through trade margins which exist in the trade chain. In Sweden, most indications are that domestic output is non-existent, which is why only trade margins are considered.

### Domestic output

In Sweden domestic output is on a very small-scale. In the case of heroin and cocaine, there is no indication that they are manufactured in Sweden. There is a certain degree of limited home cultivation of cannabis plants for own consumption, but the effect on total supply is considered very marginal. In the case of synthetic drugs, the manufacture of ecstasy is considered almost non-existent and the manufacture of amphetamines as very small. It has been several years since the police found a laboratory of considerable size. In the past, demand for GHB was mainly considered to have been met through illegal manufacture. However, since GHB has been classified as a drug, manufacture has largely moved on to other similar substances which are not classified as drugs, e.g. GBL<sup>34</sup>.

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<sup>30</sup> *SOU 1998:18* and the Swedish Customs report "*Att mäta samhällsnyttan av myndigheternas insatser*" ["Measuring the social benefit of public sector activities"], 2000

<sup>31</sup> *SOU 1998:18*

<sup>32</sup> Swedish Customs report "*Att mäta samhällsnyttan av myndigheternas insatser*" ["Measuring the social benefit of public sector activities"], 2000.

<sup>33</sup> *SOU 1998:18*

<sup>34</sup> Carlsson and Goede, 2002.

No attempt is made here to calculate domestic output, as consistent data reveal this to be very marginal. Instead it is assumed that all drug consumption in Sweden is supplied through imports.

### Trade margins

In the national accounts, the margin collected within the sale chain of the drug, from the time it is imported until it reaches the final consumer, is regarded as output.

Trade margins = (street price – import price) x quantity.

Corrections have to be made in the above formula since the degree of purity of the substance can differ at the import and/or street stage.

The National Criminal Investigation Department estimates the wholesale price<sup>35</sup>. This price is the price which the Swedish wholesalers pay for the drug. The price data are very uncertain. In the national accounts, the import price should refer to the price at Sweden's border. Thus the import price should include the freight price up to the border, while trade and transport margins within the country should not be included. It is not certain that the wholesale price refers to the price including transport up to the Swedish border.

### Wholesale price for different drugs in 2001 and 2003, SEK '000 per kg

	2001	2003
Amphetamines	60-100	50-100
Heroin	280-400	280-400
Cannabis	30-40	25-40
Narcotic medicines(1)	10	10
Ecstasy(1)	40	40

(1) The price for ecstasy and rohypnol is the price per tablet when purchasing 1 000 ecstasy tablets or 500 rohypnol tablets.

Source: National Criminal Investigation Department and Swedish Customs report "Drug situation in Sweden, 2001 and 2003". The price for heroin is a weighting between brown heroin (80%) and white heroin (20%). For narcotic medicines, the price for rohypnol is used.

Presumably some transport costs up to the Swedish border are included in the above prices. The import price is thus assumed to be equal to the higher level in the range. However, for cannabis the average is used since the wholesale price for marijuana is not available. The street price for marijuana

<sup>35</sup> The National Criminal Investigation Department and Swedish Customs annual report "The drug situation in Sweden".

is somewhat lower, which is why it is assumed that the wholesale prices for hashish and marijuana are also somewhat lower.

Of the various drugs only heroin, amphetamines and cocaine are diluted. Tests carried out on seized drugs show that cocaine is diluted 2.4 times, heroin 2.2 times and amphetamines 2.5 times<sup>36</sup>. If the quantity of drugs consumed at street level are corrected for the dilution, we get the quantity of imported drugs.

### Imported quantity of drugs 2001

Substance	Quantity at	Diluted	Quantity
	street level		imported
	kg (1)		Kg (1)
Amphetamines	2 052	2.5	821
Heroin	1 743	2.2	792
Cannabis	1 736	No	1 736
Narcotic medicines	1 221 050	No	1 221 050
Ecstasy	98 250	No	98 250

(1) Ecstasy and narcotic medicines refer to the number of tablets.

Source: Own calculation

Imported quantity = Quantity consumed at street level / the degree of dilution of the drug

In the following table, the trade margins are calculated for the respective substances. As can be seen, the margins are very high. Heroin and amphetamines have the highest margins. The total trade margins are calculated at SEK 1 810 million, which is equivalent to 79% of the street value. For the purpose of comparison, it can be mentioned that the trade margins for drugs in the United Kingdom have been estimated at 70%<sup>37</sup>.

<sup>36</sup>Swedish Customs etc., "Measuring the social benefit of public sector activities", 2000.

<sup>37</sup> Office of National Statistics (ONS), "Developing a Methodology for Measuring Illegal Activity for the UK National Accounts", 1998.

### Trade margins for different substances, 2001

Substance	Import price SEK '000/kg (1)	Import Kg (1)	Import value SEK million	Street value SEK million	Trade margin SEK (margin/street million)	% (margin/street stage)
Amphetamines	100	821	82	382	300	78%
Heroin	400	792	317	1 748	1431	82%
Cannabis	35	1 736	61	120	59	49%
Narcotic medicines	10	1 221 050	12	22	10	45%
Ecstasy	40	98 250	4	14	10	72%
Total			476	2 286	1 810	79%

(1) For ecstasy and narcotic medicines price per tablet and number of tablets.  
 Trade margin = (street price - import price) x quantity in terms of purity = street value - import value (the street value is based on the above calculations regarding heavy users and other users)

### Intermediate consumption

Since domestic output consists only of the trade margins which accrue before the drug reaches the final consumer, intermediate consumption should be very low. Any intermediate consumption may consist of e.g. rental cost of premises, telephone costs and transport costs. However, it is probable that these costs are already included in part in the national accounts, but they may be in the wrong sector. Here it is assumed that intermediate consumption which may not have already been covered in the national accounts is very low, which is why no estimate is made.

### Imports

Above, imports are estimated by using import prices and the estimated amount of drugs consumed, corrected for differences in degree of purity. Another way to calculate imports is to base this calculation on the quantities seized and an assumption of what share of the total quantity has been seized. However, it is difficult to use statistics on seizures to calculate imports of drugs. This is because the quantities seized can vary sharply from one year to the next. However, some commentators<sup>38</sup> consider seizure statistics a relatively good indicator of market changes if longer time-series are used.

<sup>38</sup> United Nations Office on Drugs and Crime, 2004. Swedish National Council for Crime Prevention "Police efforts to combat drug crime – scope, character and effects", report 2003:12.

but it is probable that seizures are affected in the short term by the level of resources, working methods, priorities etc. of national control bodies. For example, drug consumption itself became a criminal offence in 1988, and in 1999 and in 1993 stricter penalties were imposed for this crime, giving police the right to take blood and urine samples in the case of suspected own consumption. The number of full-time police staff dealing with drugs increased between 1990 and 1997, and numbers have remained unchanged since then<sup>39</sup>. Between 1997 and 2001, the number of hours spent by the customs authorities on drug tasks rose by about 25%<sup>40</sup>.

Some of the drugs seized by Swedish Customs and police are intended for markets other than the Swedish market. Such transit should not be included in the national accounts. What this share might be is unknown, but it has been established that individual large seizures cannot have been intended for the Swedish market. For example, in the case of large seizures of heroin and cocaine, it was established that the lots were intended for another country<sup>41</sup>. Even the reverse can occur, i.e. seizures of drugs in other countries which are intended for the Swedish market. The following table shows the seizures made by Swedish Customs between 1998 and 2004.

**Customs seizures, 1998-2004, Kg (ecstasy and narcotic medicines, number of tablets)**

Substance	1998	1999	2000	2001	2002	2003	2004
Amphetamines	80.9	52.2	39.1	98.5	147.3	181.1	194.3
Heroin	63.7	42.9	19.9	23.1	30.4	9.0	17.1
Cannabis	324.7	927.4	861.4	312.3	525.7	529.9	533.4
Narcotic medicines	222 788	145 988	237 155	85 080	765 748	144 258	195 947
Ecstasy				18 788	24 750	42 359	151 000

Source: Swedish Customs. By narcotic medicines are meant tablets containing flunitrazepam and sleeping tablets and tranquilisers which are classified as drugs. Seizures of ecstasy before 2001 are uncertain and are not shown.

Before some drugs reach the street they are diluted. As stated earlier, only heroin, amphetamines and cocaine are diluted. If such dilution is taken into account, the customs authorities' seizures are equivalent to the following quantities of street cocaine, heroin and amphetamines:

<sup>39</sup> Granath, Svensson and Lindström, 2003.

<sup>40</sup> Carlsson I and Goede C 2002.

<sup>41</sup> SOU 1998:18.

### Customs seizures of heroin and amphetamines on the street, kg

Substance	1998	1999	2000	2001	2002	2003	2004
Amphetamines	202.2	130.5	97.7	246.3	368.3	452.7	485.9
Heroin	140.1	94.3	43.8	50.8	66.9	19.8	37.6

Source: Own calculation. Tests on seizures show that heroin is diluted 2.2 times and amphetamines 2.5 times (Swedish Customs etc., "Measuring the social benefits of authorities' efforts", 2000 Report).

Seizure statistics give an indication of the trend in drug imports, but estimating total imports on the basis of seizures must be regarded as very uncertain. Apart from the uncertainty regarding import prices and whether the seized lots are intended for the Swedish market, it is also necessary to have data on what proportion the seizures represent. Estimates of proportion of the total market accounted for by the seized drugs are very uncertain. In *SOU 1998:18*, the proportion of total cannabis, amphetamines and heroin accounted for by seizures by the Swedish Customs were estimated for 1997, the figures being about 17% for cannabis, about 3.5% for amphetamines and about 3% for heroin. Overall, it was estimated that Swedish Customs seized about 11% of the total quantity of cannabis, amphetamines and heroin. These calculations include no conversions for degree of purity.

In the following table, estimated consumption is compared on the basis of Customs seizures. According to this comparison, cannabis seizures account for 18%, amphetamines 5% and heroin 1% of the total quantity. In total for these three substances, the proportion represented by seizures is about 8%. For ecstasy it is 19%. The proportions of ecstasy and cannabis seized are relatively high. In the case of ecstasy this can partly be explained by the fact that even heavy users use a certain amount of the substance. However, the value of ecstasy is marginal.

### Comparison between estimated quantity of different substances and seizures by Customs, 2001

Substance	Customs seizure Kg (1)	Customs seizure corr. (1)	Estimated consumption Kg (1)	Seizure %	Seizure corr. %
Amphetamines	98.5	246.3	2 052	5%	12%
Heroin	23.1	50.8	1 743	1%	3%
Cannabis	312.3	312.3	1 736	18%	18%
Narcotic medicines	85 080	85 080	1 221 050	7%	7%
Ecstasy	18 788	18 788	98 250	19%	19%

(1) Narcotic medicines and ecstasy refer to the number of tablets.

Source: Own calculation. Estimated consumption is based on consumption by heavy and/or other users. "Customs seizure corr." is customs seizure corrected for dilution.

It would be desirable to be able to estimate output, imports and consumption separately and then reconcile availability and use of drugs, which is the usual working method in the national accounts. However, owing to the high uncertainty of the basic data, especially in the case of imports, it has been impossible to estimate supply in a satisfactory manner. Imports are therefore estimated by using import prices and the estimated quantity of drugs consumed, corrected for dilution (see section on calculation of trade margins).

### Import of drugs broken down by substance, 2001

Substance	Import price SEK '000 /kg (1)	Import Kg (1)	Import value SEK million
Amphetamines	100	821	82
Heroin	400	792	317
Cannabis	35	1 736	61
Narcotic medicines	10	1 221 050	12
Ecstasy	40	98 250	4
Total			476

(1) For ecstasy and narcotic medicines price per tablet and number of tablets

### Export

Transit should not be included in exports and imports. Since there is no domestic output of drugs in Sweden, exports can only occur in the form of sales to tourists. However, this is likely to occur on a very small scale, which is why there are no estimates of exports.

### What is currently included in the National Accounts?

As stated above, it has been assumed that some intermediate consumption is already included in the national accounts. Imports are also included in the national accounts through "foreign exchange for travel". This item includes all currency conversions. Conversions to foreign currency by households are recorded as Swedish household consumption abroad and conversion to Swedish currency are recorded as foreign consumption in Sweden. These items are included when calculating the total consumption expenditure of households, with Swedish household consumption abroad thus contributing

positively to total consumption, while foreign consumption in Sweden is excluded. There is inadequate knowledge of how transactions are arranged when importing drugs, but for the moment it is assumed that all imports are covered by foreign exchange for travel. In 2004, consumption by households abroad totalled SEK 51 billion.

Narcotic medicines reach the illegal market either through import from other countries or through theft or the prescription of medicines at national level. Imports from other countries consist of both illegally and legally manufactured medicines. The domestic supply can result for instance from theft, prescription of medicines by less careful doctors, or from the user having the medicine prescribed by several different doctors. In such cases consumption both for own use and for sale can be involved. Domestic supply, apart from the margins on resales, are included in the national accounts today, but the majority of the narcotic medicines which are consumed are presumably imported, which is why no correction is made in this case.

## Summary

This report estimates the consumption expenditure of households, and the output and import of drugs for 2001.

On the basis of assumptions regarding the number of users, their average annual consumption and prices, consumption expenditure of households is estimated at SEK 2 286 million. Consumption by heavy users is estimated at SEK 2 203 million and by other users at SEK 83 million. Consumption has been broken down into five different substances: amphetamines, heroin, cannabis, narcotic medicines and ecstasy. Of these substances, heroin weighs most heavily in consumption.

### Consumption expenditure of households (SEK million) and quantity consumed (kg and number of tablets) broken down by substance

Substance	Quantity Kg (1)	Value SEK million
Amphetamines	2 052	382
Heroin	1 743	1 748
Cannabis	1 736	120
Narcotic medicines	1 221 050	22
Ecstasy	98 250	14
Total		2 286

(1) Narcotic medicines and ecstasy refer to number of tablets

The domestic output of drugs is very marginal. However, output arises through the trade margins levied in the sales chain, from the time the drugs are imported until they reach the final consumer. Trade margins are estimated at SEK 1 810 million.

Imports are estimated on the basis of import prices and the volume of drugs consumed, corrected for dilution of drugs carried out at street level. Imports are estimated at SEK 476 million.

Owing to the calculation methods used to compile the national accounts, purchases of drugs abroad by Swedes are currently already included. These purchases are included in foreign exchange for travel, which is calculated on the basis of data from foreign exchange and credit-card transactions. Introducing drugs into the Swedish national accounts will therefore have an impact only on the consumption expenditure of households and on output.

#### **Additions to the Swedish National Accounts:**

Output (trade margin) = SEK 1 810 million

Consumption expenditure of households (estimated consumption – imports, which are already included) = 2 286 – 476 = SEK 1 810 million

Import = No addition is made since this is already included in foreign exchange for travel.

The calculations are based on several assumptions. In particular, there is a lack of quality data on users' average annual consumption, the impact of volume discounts on street prices and import prices.

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## **Alcohol and tobacco smuggling**

### **General**

Alcohol and tobacco smuggling is an illegal activity in Sweden. However, compared with drugs and prostitution, it could be said that smuggling is more like an informal activity. It is legal to import alcohol and tobacco to Sweden if you declare them and pay any tax. It is also legal to use alcohol and tobacco – in contrast to drugs, for example.

The conclusions drawn from work carried out by Eurostat and other international bodies in a variety of contexts are that in this sector the Member States should focus on economically significant factors and simplify the calculations where possible. Totally accurate measurements of illegal activity are not possible; instead, a pragmatic approach is called for.

Alcohol and tobacco smuggling is probably rather wide-spread in Sweden since we have relatively high taxes (excise duties and VAT) and consequently high prices. If prices are significantly lower in, for instance, Finland or Poland, it can be quite profitable for a smuggler, who would presumably have a high margin but low transport costs, to choose adjacent countries for smuggling to – e.g. Sweden.

This report also attempts to calculate the economic value of illegal own-production of alcohol, even if this activity cannot be termed smuggling.

### **The principles governing calculations**

The calculations are based on a review of the calculations compiled for different variables, as follows:

#### **Import**

Imports are calculated as: the import price x smuggled quantity, where import price = legal price in the country of origin. In practice therefore, it should be possible to use price data from the country where the smuggled goods originated. It is important to bear in mind that: import price < street price < legal resale price. The quantity can be determined from several sources – e.g. customs or research reports.

## Output

Since the objective of this report is to try to calculate alcohol and cigarette smuggling, Swedish output is made up of the trade margins which the smuggled quantities generate. These are calculated as (street price – import price) x quantity sold, where import price = legal price in the country of origin.

## Intermediate Consumption

Consumption in the smuggling sector is made up primarily of transport costs, which are already included in the national accounts, since transport data are reconciled in a special product balance sheet.

## Final Consumption expenditure of households

The consumption expenditure of households is calculated as: street price x quantity purchased. The sale of smuggled alcohol and tobacco is not covered by retail surveys and consumption of these goods is always underreported in *HBS* or *HUT*<sup>42</sup>. Thus smuggling is not included implicitly in the final consumption expenditure of households in the national accounts and the value calculated on the basis of the above formula should therefore be added to the final consumption expenditure of households.

## Calculations

Calculations should be made separately for individual products or product groups since the smuggling procedure can vary significantly from one product or group to another. Thus spirits, wine, beer and cigarettes are calculated separately.

An annual calculation has to be made because of the dynamic nature of this activity. An earlier calculation should preferably not be extrapolated, therefore, even though this is an alternative in the case of drugs and prostitution.

In the national accounts, the supply side should be balanced against the demand side.

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<sup>42</sup> *HBS*: *Hushållsbudgetstatistik* [Household Budget Survey], *HUT*: *Hushållens utgifter* [Household expenditure]. A survey in which households keep a record of their consumption expenditure.

Illegal activity influences the national accounts at several stages. GNP, the trade balance and savings ratio are probably influenced. The GNP level increases when illegal activity is included, but growth in GNP is likely to be minimal. According to the UK Statistical Office (ONS), for example, illegal activity is likely to be contra-cyclical, i.e. it dampens economic fluctuations.

### **Calculation of alcohol and tobacco smuggling and home-produced alcohol**

The calculations cover the year 2003 and include imports, output and the final consumption expenditure of households as described above.

### **The final consumption expenditure of households**

SoRAD<sup>43</sup> at Stockholm University conducts a monthly survey directed at the adult section of the Swedish population. These surveys include questions on travel imports, smuggling and home-production of spirits, wine and beer. Since 2001, questions have covered alcohol consumption and as from 2003 questions have also been introduced on the consumption and import of tobacco products. The surveys are conducted at the end of each month and in each case 1 500 persons are interviewed. These surveys<sup>44</sup> can provide data on quantities relating to household consumption.

It should be added that in SoRAD's surveys, a distinction is made between registered alcohol consumption (covered by statistics and taxed in Sweden) and unregistered consumption (not covered by statistics and not taxed in Sweden).

The purchase of alcohol at *Systembolaget*<sup>45</sup> and in restaurants constitutes registered consumption, while travel imports, smuggling and home-production is unregistered.

According to SoRAD's surveys, the pattern of alcohol consumption has changed in the following manner during the period 1996-2003.

### **Percentage change in alcohol consumption 1996-2003**

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Spirits	-4%
Wine	+74%

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<sup>43</sup> SoRAD: Centre for Social Research on Alcohol and Drugs, Stockholm University.

<sup>44</sup> Alcohol consumption by the Swedish population in 2003, Nina-Katri Gustafsson and Björn Trolldal, SoRAD, Stockholm 2004, *Forskningsrapport* [research report] No 26. [www.sorad.su.se](http://www.sorad.su.se).

<sup>45</sup> The monopoly which provides for all sales of alcoholic drinks in Sweden.

Strong beer	+71%
Weighted total	+29%

Source: SoRAD.

Changes between 2002 and 2003 can be presented as follows.

### **Percentage change in alcohol consumption between 2002 and 2003**

Spirits	+1%
Wine	+5%
Strong beer	+9%
Weighted total	+4%

Source: SoRAD.

### **Percentage change in unregistered alcohol consumption between 2002 and 2003 (100% proof pure alcohol)**

Travel imports	+21%
Smuggling	+18%
Home production	-26%

Source: SoRAD.

Below it can be seen that unregistered alcohol accounted for 32% of total consumption in 2003.

### **Share of unregistered alcohol of total consumption 2003**

Travel imports	22%
Smuggling	6%
Home production	4%
Total unregistered alcohol	32%

Source: SoRAD.

### **Smuggled alcohol**

The following calculations are broken down into the product groups spirits, wine, beer and cigarettes, but also by country of origin wherever possible, i.e. if data are available indicating from which countries the alcohol and tobacco have been smuggled. The report from SoRAD provides data on the origin of travel imports (see table below), i.e. in which countries the alcohol imported by travellers was purchased in 2003. In the calculations it is assumed that smuggling follows the same country pattern. According to a report from the National Criminal Investigation and Swedish Customs<sup>46</sup>, the major share of alcohol smuggled to Sweden and to Skåne originates primarily in Germany and Denmark. This coincides with the picture of travel imports presented by SoRAD in the table which follows.

<sup>46</sup> A criminal intelligence-based survey of alcohol related crime, Niki Ekman etc., National Criminal Investigation Department and Swedish Customs, 2004.

The report states that after EU enlargement eastwards in 2004, it is expected that the supply of smuggled alcohol and cigarettes will increase in Sweden. It is estimated that smuggling will then increase from the new EU Baltic states and Poland<sup>47</sup>. This means that the assumptions on which the calculations in this report are based, namely that smuggling origins conform to the same country pattern as in the following table, will have to be revised in the calculations for 2004 and possibly also in those for subsequent years.

#### Countries of origin of travel imported alcohol in 2003, (%)

Purchased in	Pure (100%) alcohol	Spirits	Wine	Strong beer
Germany	38	32	51	44
Denmark	27	13	29	34
Finland	7	7	4	9
Other EU	15	26	11	5
Outside EU	13	22	5	8
Total	100	100	100	100

Source: SoRAD.

The following table presents household purchases of smuggled alcohol between 2001 and 2003, also taken from the SoRAD report. In the interview surveys of adults (16-80 years) described above on which these figures are based, smuggling is defined as “alcohol which has been imported by individuals to Sweden for sale for profit”.

#### Household purchases of smuggled alcohol, '000 litre by volume, 2001-2003

	2001	2002	2003
Smuggled spirits	3 240	4 720	3 190
Smuggled wine	1 760	2 530	5 550
Smuggled beer	26 600	36 600	55 300

Source: SoRAD.

By using the above country breakdown of the origin of alcohol at the time of purchase, it is possible to break down the smuggling by country and product (see following tables). According to the formula “final consumption expenditure of households = street price x quantity purchased”, street prices also have to be determined. However, it was difficult to obtain price data.

<sup>47</sup> *Omvärldsbevakning, Europeiska unionens utvidgning österut* (Monitoring developments, the European Union's enlargement to the east), Karl-Gustav Holmgren etc. Swedish Customs, Malmö 2003.

Several conceivable sources were contacted – e.g. Swedish Customs, Swedish Tax Office, SoRAD, *CAN*<sup>48</sup>, National Institute of Public Health, Systembolaget, police, as well as journalists and the media, etc. However, only the Malmö police were able to provide data regarding the street prices for illegal alcohol and tobacco.

The calculations therefore use data on street prices obtained from the Malmö police<sup>49</sup>. In addition, SoRAD notes in the above-mentioned report that Skåne is the only county in Sweden where, expressed in volume, travel-imported alcohol in 2003 exceeded alcohol sales by the *Systembolaget* in the same county. However, the prices based on the figures given by the Malmö police are somewhat uncertain and may be too high compared with reality.

Below, calculations are given for smuggled spirits, smuggled wine and smuggled beer in separate tables, based on SoRADs quantities and the Malmö police data on street prices. According to the Malmö police there are data on street prices for alcohol smuggled in from Poland and on street prices for alcohol smuggled in from other countries, i.e. there are two different street prices. Since Poland was not in the EU in 2003, the calculation is simplified and it is assumed that “non-EU” is equivalent to Poland. We therefore use the street price for alcohol from Poland for that quantity and the other street price for the remaining quantities. This does not apply in the case of wine, however, since the Malmö police only have price data on spirits and beer for alcohol from Poland.

This is a very simplified calculation and does not fully reflect the reality. More countries than Poland should be included in the term “non-EU”, but the calculation in this report should be interpreted as an initial model which can be developed in future. Poland became an EU member in 2004 and, as argued above, this country breakdown must therefore be changed in the calculation for 2004.

In the three following tables, quantity = '000 litre by volume, price = SEK per litre and value = SEK million. The total of the parts does not always tally owing to rounding.

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<sup>48</sup> *CAN* = Central Association for Alcohol and Drug Information.

<sup>49</sup> Kaj Bauer at Malmö police.

**Household purchases of smuggled spirits by country of origin in '000 liter by volume, SEK per litre and SEK million, 2003**

	Germany	Denmark	Finland
Quantity	1 021	415	223
Price	150	150	150
Value	153	62	33
	Other EU	Non- EU	Total
Quantity	829	702	3190
Price	150	200	
Value	124	140	514

Source: Own calculation.

**Household purchases of smuggled wine by country of origin in '000 litre by volume, SEK per litre and SEK million, 2003**

	Germany	Denmark	Finland
Quantity	2 831	1 610	222
Price	30	30	30
Value	85	48	7
	Other EU	Non-EU	Total
Quantity	611	278	5 550
Price	30	30	
Value	18	8	167

Source: Own calculation..

**Household purchases of smuggled beer by country of origin in '000 litre by volume, SEK per litre and SEK million, 2003**

	Germany	Denmark	Finland
Quantity	24 332	18 802	4 977
Price	19	19	19
Value	462	357	95
	Other EU	Non-EU	Total
Quantity	2 765	4 424	55 300
Price	19	20	
Value	53	88	1 055

Source: Own calculation.

According to these calculations, consumption expenditure of households is SEK 514 million for smuggled spirits, SEK 167 million for smuggled wine and SEK 1 055 million for smuggled beer, or a total of SEK 1 736 million for smuggled alcohol purchased by households.

### Smuggled tobacco

SoRAD has not reported any data yet on tobacco, but has begun to consider the question of tobacco in the surveys. However there are other sources for this sector.

Cigarette smuggling is broken down into three categories:

1. Smuggling for personal needs.
2. Smuggling as secondary activity linked to an occupation, e.g. by long-distance lorry drivers, sailors and airline employees.
3. Organised smuggling.

The price of cigarettes is high in Sweden compared with other EU countries, and this makes smuggling to Sweden attractive. Since cigarettes are bulky the transport volume is relatively large, and organised smuggling with lorries therefore dominates. A big long-distance lorry with smuggled cigarettes can generate a profit of between SEK 5 million and SEK 10 million on the wholesale market in Sweden.<sup>50</sup>

Since mid-1998, mail order and internet trade in illegal cigarettes has been on a relatively small scale. This is because at that time Swedish Customs were given greater powers to check postal dispatches. Various calculations have been made to estimate the volume of smuggling, both for the entire world and for Sweden. In one calculation, total exports and imports world-wide are compared. The difference of 280 billion cigarettes is regarded as equivalent to the volume of smuggling traffic in the world. Sweden's population as a proportion of the world population multiplied by the total volume gives a smuggle volume of just under 400 million cigarettes for Sweden.

In a report by Leif G.W. Persson and Jan Andersson<sup>51</sup>, the authors consider that cigarette consumption and smuggling is relatively low in Sweden and that the Swedish volume is therefore about 100-200 million cigarettes.

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<sup>50</sup> *Skattestatistisk årsbok* (Yearbook of tax statistics)=, Chapter 10 "Fel och fusk", Skatteverket (Tax Authority), Stockholm 2003.

<sup>51</sup> *Cigarettsmuggling* (Cigarette smuggling), Leif G.W. Persson and Jan Andersson, *Grossistförbundet/svensk Handel* (Wholesale Association/Swedish Trade), 1997.

Another method that Persson and Andersson used in their report was to estimate the actual volume smuggled on the basis of Swedish Customs seizures and a calculation of the probability of being discovered. A "cautious" calculation, gave a result of 100 million cigarettes, which was regarded as being too low. However, an "educated guess" gives a figure of 150 million cigarettes, of which 50 million are smuggled for personal use.

Persson and Andersson also compare cigarette consumption on the basis of an interview survey with sales in lawful outlets and in this case also arrive at about 150 million cigarettes.

If these 150 million cigarettes were taxed, this would generate a sum of SEK 250 million for the State (3% of total tobacco taxes).

On the basis of these estimates, the calculations assume a mean value of 150 million cigarettes consumed by households in 2003. Information from Malmö police<sup>52</sup> put the cost of a carton of cigarettes at about SEK 200 on the street. This price is both below the Swedish legal price of about SEK 340 and the "tax-free" price of about SEK 240. A carton of cigarettes contains 200 cigarettes. The street price for one cigarette is thus SEK 1. The consumption expenditure of households on smuggled cigarettes thus came to SEK 150 million in 2003:

**Household purchases of smuggled cigarettes expressed in millions of cigarettes, SEK per cigarette and SEK million, 2003**

Quantity	150
Price	1
Value	150

Source: Own calculation:.

**Home-produced alcohol**

Home-produced alcohol concerns spirits and wine. The consumption of home-produced strong beer in 2003 was barely significant and is not included in the calculation in this report. Home-produced wine accounted for about 6% of total wine consumption in 2003 and home-produced spirits also accounted for about the same percentage of the total in that year<sup>53</sup>.

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<sup>52</sup> Kaj Bauer at Malmö police.

<sup>53</sup> Alcohol consumption by the Swedish population in 2003, Nina-Katri Gustafsson and Björn Trolldal, SoRAD, Stockholm 2004, *Forskningsrapport* No 26. [www.sorad.su.se](http://www.sorad.su.se).

The following table shows household purchases of home produced alcohol in 2003, on the basis of data from SoRAD's report.

### **Household purchases of home-produced alcohol in '000 litres by volume, 2003**

Home-produced spirits	2 810
Home-produced wine	14 800

Source: SoRAD

As stated above, it is difficult to obtain data on the street prices of illegal alcohol. A report from the Ministry of Finance<sup>54</sup> considers that a litre of home-produced alcohol costs about SEK 100. This is assumed to apply to 1999 when the report was written. By extrapolating 1999 prices on the basis of the CPI-increase for alcoholic liquor<sup>55</sup> between 2003 and 1999, the price for home-produced spirits comes out at SEK 104 per litre in 2003. For wine the street price for smuggled wine as calculated above is used.

The following table shows household purchases of home-produced alcohol in 2003, where quantity = '000 litres by volume, price = SEK per litre and value = SEK million..

### **Household consumption of home-produced alcohol in '000 litre by volume, SEK per litre and SEK million, 2003**

	Home-produced spirits	Home-produced wine
Quantity	2 810	14 800
Price	104	30
Value	292	444

Source: Own calculation.

According to these calculations, the consumption expenditure of households is SEK 292 million on home-produced spirits and SEK 444 million on home produced wine, or a total of SEK 736 million for home-produced alcohol purchased/used by households. This includes both sales to households and production for own final use.

## **Imports**

### **Alcohol**

<sup>54</sup> *Bostad sökes* [Looking for a home] – an ESO report on the homeless in Sweden, *Ds 1999:46*, Stefan Fölster and Per Säfsbäck, Ministry of Finance, Stockholm 1999.

<sup>55</sup> Consumer price index, annual mean value, product group 02.1.1 alcoholic liquor, [www.scb.se](http://www.scb.se).

It is more difficult to estimate imports or the value of imports than to estimate the consumption expenditure of households. As stated above, SoRAD conducts a survey directed at consumers (households). There is no equivalent overall view of imports – for instance there is, for obvious reasons, no interview survey of importers.

What is available are Swedish Customs seizure statistics<sup>56</sup> broken down by cigarettes, strong beer and alcoholic liquor (>40% alcohol), for the period 1998–2004.

According to Lars Andrén, information head at Swedish Customs, there is a rule of thumb which says that Swedish Customs seizes 5%–15% of the alcohol and cigarettes actually smuggled. However, Swedish Customs has not made any calculations indicating what the actual volume smuggled might be.

In general, however, the trend is that spirits seizures are declining and beer seizures increasing, since the gradual adoption of new import rules each year between 2001 and 2004. On 1 January 2004 the so-called “EU quotas” came into force. The rules say that as a private person one may in fact import an unlimited quantity as long as it is for private consumption and not for commercial use. However, indicative volumes of permitted imports are given: 100 litres of beer, 90 litres of wine and 10 litres of spirits. For example, if a private person imports more than 100 litres of beer, this is considered suspicious, since it is doubtful that the person will manage to consume the beer before the expiry date. However, this can be difficult to decide if, for example, it is intended for a large party.<sup>57</sup>

Since it is impossible to know what proportion of actual smuggled goods is seized by Swedish Customs and since the rule of thumb extends over such a wide range, Customs-seizure statistics cannot be used to calculate imports. Instead we have used SoRAD’s data.

Calculations are given below of the import value of smuggled alcohol and tobacco. Imports are calculated as: import price x smuggled quantity, where import price = legal price in the country of origin. In practice, it would therefore be possible to use price data from the country where the smuggled goods originate. It has not, however, been possible to obtain unit prices for alcohol and tobacco from the various national statistical offices – in this case

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<sup>56</sup> See [www.tull.se](http://www.tull.se).

<sup>57</sup> Lars Andrén, Head of Information at Swedish Customs

the statistical offices of Germany, Denmark and Finland. For various reasons, they did not provide data or did not have the data required.

Instead we have used price data from the Purchasing Price Parity survey (PPP) by SCB<sup>58</sup>. This material contains unit prices for different goods, *inter alia*, alcohol products and tobacco. They are average prices for 2003, including VAT, and they are expressed as average prices for the respective country in that country's currency. To convert unit prices in foreign currencies to Swedish crowns, the average exchange rates for 2003 are used for the respective currencies, from Eurostat's database New Cronos.

In this report, detailed unit prices are used for spirits, wine, beer and cigarettes. Since the Malmö police consider that vodka is generally sold illegally on the street, we have opted to calculate an average price from the vodka prices included in the PPP measurements and to use this price in the calculations of smuggled spirits. For wine, red wine of standard table-wine quality is used. For beer, domestic beer of normal quality is used. For cigarettes we use an average value of all brands.

We have opted to make use of Germany's legal unit prices for all countries and products apart from Poland's legal unit prices for "non-EU" spirits and beer. Thus we have adopted a pragmatic approach and made a simplified and rough calculation. This is in line with the BNI committee's recommendations which say that it is possible to use data from the country where the goods generally originate.

The police and the customs department believe that Germany is probably the major country of origin, but that Poland and also the Baltic may also be a major areas of origin for legal alcohol and tobacco – see the discussion in the section on "Consumption expenditure of households".

Below we present equivalent calculations of the import value as for households above. They are based on the same country breakdown and smuggled volume of the respective product groups as in the case of households. In the tables, quantity = 1 000 litres by volume, price = SEK per litre, and value = SEK million. The total of the items does not always tally, because of rounding.

### **Import of smuggled spirits by country of origin in '000 litres by volume, SEK per litre and SEK million, 2003**

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<sup>58</sup> Purchasing Price Parity survey, SCB, Unit for economic statistics, The price unit, [www.scb.se](http://www.scb.se).

	Germany	Denmark	Finland
Quantity	1021	415	223
Price	124	124	124
Value	127	51	28

	Other EU	Non-EU	Total
Quantity	829	702	3190
Price	124	95	
Value	103	67	375

Source: Own calculation.

**Import of smuggled wine by country of origin in '000 litres by volume, SEK per litre and SEK million, 2003**

	Germany	Denmark	Finland
Quantity	2 831	1 610	222
Price	16	16	16
Value	45	26	4

	Other EU	Non EU	Total
Quantity	611	278	5 550
Price	16	16	
Value	10	4	89

Source: Own calculation.

**Import of smuggled beer by country of origin in '000 litres by volume, SEK per litre and SEK million, 2003**

	Germany	Denmark	Finland
Quantity	24 332	18 802	4 977
Price	10	10	10
Value	243	188	50

	Other EU	Non- EU	Total
Quantity	2 765	4 424	55 300
Price	10	11	
Value	28	49	558

Source: Own calculation.

## Tobacco

Organised crime still accounts for a large proportion of the smuggling of alcohol and tobacco. For this, transport, storage and distribution channels are necessary. The smuggled cigarettes discussed below primarily come from Estonia, Latvia, Lithuania and Poland. Smuggled cigarettes transit to Norway where the prices are the highest in Europe. It is estimated that smuggling will increase with the EU enlargement to the east.<sup>59</sup>

For cigarettes, Poland's legal unit price is used. The other legal unit prices for cigarettes based on the PPP values are often higher than the street prices, according to Malmö police data. Germany's legal price for one cigarette is about SEK 1.5. According to the Malmö police, the street price is about SEK 1 per cigarette. However, Poland's unit price per cigarette is about SEK 0.5. If Poland's legal price per cigarette is used as the import price, this gives the following import value.

### **Import of smuggled cigarettes in million cigarettes, SEK per cigarette and SEK million, 2003**

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Quantity	150
Price	0.5
Value	75

Source: Own calculation

According to the above calculations, the import value is SEK 375 million for smuggled spirits, SEK 89 million for smuggled wine and SEK 558 million for smuggled beer, or a total of SEK 1 022 million for imported smuggled alcohol. The import value for smuggled cigarettes is SEK 75 million.

## Output

The Swedish output value for smuggling is calculated as the trade margins corresponding to the difference between the sale value and the import value. According to the above calculations this gives SEK 1 736 million – SEK 1 022 million = SEK 714 million for alcohol and SEK 150 million – SEK 75 million = SEK 75million for cigarettes.

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<sup>59</sup> Monitoring, EU Enlargement to the East, Karl-Gustav Holmgren Customs department, Malmö 2003.

The output value for home-produced alcohol is equal to the sale value, equivalent to the consumption expenditure of households on home-produced alcohol if we assume that all home-produced alcohol is purchased/used by the household. Thus, the output value is SEK 736 million according to the above calculations. The added value is the output value minus intermediate consumption, which comprises raw materials and equipment and which can be assumed to be 10% of the output value, or SEK 74 million<sup>60</sup>. The added value then comes to SEK 736 million – SEK 74 million = SEK 662 million.

### **Retail trade and restaurants**

Does all use of illegal alcohol and tobacco come under final consumption expenditure of households, or is some used as intermediate consumption in the economy to be sold on by, for instance, restaurants to consumers? Is illegal alcohol and tobacco sold in the retail trade or only on the street?

It was not possible to obtain any data on this, but according to the sources we have contacted, sale of illegal alcohol in the catering sector is on a relatively small scale. The Restaurant Commission (*Krog Kommission*) of the Stockholm police works with drugs, weapons, violence and alcohol in restaurants in Stockholm, but has no data on the sale of illegal alcohol in this branch. In addition, alcohol has low priority.<sup>61</sup>

The yearbook of tax statistic raises the question of the purchase of illegal alcohol by restaurants. In the past, the general view was that restaurants represented a major distribution channel for illegal alcohol. However, in a study (*Ds 1997:8*), the Ministry of Health and Social Affairs concluded that the role of restaurants is exaggerated. This view was mainly based on the fact that restaurants run a relatively high risk when handling illegal alcohol. If discovered, there is a great likelihood that the business would be shut down<sup>62</sup>.

The Stockholm County Administration is responsible for monitoring restaurants and alcohol sales in restaurants in Stockholm, an activity, which comes under the heading “restaurant clean-up” (*operation Krogsanering*). According to this, there is currently no proof that illegal alcohol is sold in restaurants in Stockholm. However, in future, Finland’s lower tax on alcohol

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<sup>60</sup> Own estimate.

<sup>61</sup> Torbjörn Nilsson of Stockholm police.

<sup>62</sup> Yearbook of tax statistics, Chapter 10 “*Fel och fusk*” [Errors and fraud], Tax authorities, Stockholm 2003.

and the fact that the Baltic States have joined the EU may lead to an increase of illegal alcohol in Stockholm's restaurants.<sup>63</sup>

However, the Skåne County Administration has made most progress in mapping sales of illegal alcohol in restaurants. The *ISAK* project was launched there in 2004 and found that 16 restaurants in Malmö had sold illegal alcoholic drinks. To date there are no data in this field, but often it is alcohol bought by a private person in Germany or Denmark which is then sold illegally in restaurants in Malmö.<sup>64</sup>

However, there is probably relatively extensive sale of illegal alcohol and tobacco in the non-durable goods trade. According to the Malmö police, as many as half of the smaller convenience stores in Malmö sell smuggled alcohol and smuggled cigarettes. However, there are no quantitative data on the volumes involved overall.<sup>65</sup>

The above sources give a somewhat fragmented picture of the extent of sales of illegal alcohol and tobacco in the retail and catering trade. In any event there appear to be some sales, primarily in the retail trade.

### **What is currently included in the national accounts?**

As mentioned above, consumption in the smuggling sector consists primarily of transport costs, which are already included in the national accounts, since transport is reconciled in a special product balance sheet.

Imports are also included in the national accounts through "foreign exchange for travel". All conversions of currency are included in this item. Conversions to foreign currency by households are booked as household consumption abroad and conversions to Swedish currency are booked as foreign consumption in Sweden. When calculating the total final consumption expenditure of households, these items are included, with household consumption abroad making a positive contribution to total consumption, and foreign consumption in Sweden making a negative contribution. There is a lack of information on the organisation of transactions when importing alcohol, but for the moment it is assumed that

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<sup>63</sup> Jan-Olof Tidbeck at the Stockholm County Administration .

<sup>64</sup> Håkan Johansson of the Skåne County Administration.

<sup>65</sup> Kaj Bauer of the Malmö police.

all import is covered by foreign currency for travel. In 2003, consumption by households abroad amounted to SEK 45 billion.

### Summary

This report has estimated the final consumption expenditure of households, the output and imports of illegal alcohol and tobacco in 2003.

On the basis of data on quantities and prices from the above-mentioned sources, the final consumption of households on illegal alcohol and tobacco is estimated at SEK 2 622 million.

National output consists of home-produced alcohol and the added value of this output is SEK 662 million. Output is also based on the trade margins achieved through sales, from the import of the illegal alcohol and tobacco until it reaches the final consumer. Trade margins are estimated at SEK 789 million.

Imports are estimated on the basis of legal prices in the country of origin and the volume of illegal alcohol and tobacco which is consumed. Imports are calculated at SEK 1 097 million.

In view of the calculation methods on which the national accounts are based, purchases of alcohol and tobacco abroad by Swedes are already included in the national accounts. These purchases are included in the “foreign currency” item, which is calculated with the aid of data from currency exchange and credit-card transactions. The introduction of illegal alcohol and tobacco in the Swedish national accounts will therefore have an impact only on the final consumption expenditure of households and output.

### Additions to the Swedish national accounts:

- Output (trade margin for alcohol + trade margin for tobacco + added value for home-produced alcohol) = SEK 714 million + SEK 75 million + SEK 662 million = **SEK 1 451 million.**
- Final consumption expenditure of households (calculated consumption minus imports, which are already included) = SEK 2 622 million – SEK 1 097 million = **SEK 1 525 million.**
- Imports = There is no addition to the national accounts for imports since these are already included in foreign currency.

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