

Illegal Economic Activities in Balance of Payments and National Accounts

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1 Why is the illegal economy considered? Summary of project results

Activities within the illegal economy are activities prohibited by national legislation. An activity that is legal in one country can be illegal in another depending on the countries' legislations. The economic statistics of the countries should, however, be comparable and, on the other hand, the demand and supply in each country should be in balance. If the actors in the illegal economy are ignored, problems may arise from the above-mentioned items; the figures of the countries are not comparable and it becomes harder to make conclusions, demand and supply do not necessarily meet, and economic transactions become recorded under the wrong items.

The production boundary of the National Accounts is defined as including production prohibited by law assuming that all the units involved enter into it voluntarily. In Finland, prostitution, narcotics and the smuggling of alcohol and tobacco are taken into account in the calculation of the estimates of the illegal economy. Conceptually, mutual understanding is required but, in practice, there are problems related to the issues. All phenomena may have criminals or criminal organisations in the background and coercion and violence may occur. When exact data are not available it is hard to draw lines. Normal basic data are not, in practice, available on the illegal economy. The aim of research related to the topic compiled by other actors is rarely to measure the economic value of the phenomenon, the reasons for the research are based, for example, on monitoring citizens' health or criminality in the country.

Often, data from various sources are combined and compared. The main domestic sources are data from the National Institute for Health and Welfare (THL), Finnish Customs, Pro-tukipiste and the Police. In addition, findings and research by other experts, authorities and organisations are utilised to some extent. If necessary, calculations are made by dividing the phenomena under examination into sub-entities and by making sub-area estimates on these. There are pretty much data on the use of alcohol, tobacco and drugs based on the number of users. Of the phenomena, prostitution is most difficult to compile statistics on.

A summary of the results is presented below.

Illegal Economic Activities, year 2015, million EUR

		Prostitution *	Trafficking of Illegal Drugs**	Smuggling of Alcohol and Tobacco Products	Total
Sector		S.14	S.14	S.14	
NACE Rev. 2		96	47	47	
Output of goods and services	P1	x	x	x	x
Intermediate consumption	P2				
Gross value added	B1G	x	x	x	x
Household final consumption expenditure	P3	x	x	x	x
Imports of goods and services	P7	x	x	x	x
Percentage of GNI		0,06%	0,05%	0,005%	0,1%

*Note: In future prostitution will be included in grey economy instead of illegal economy

**Note: Production in Finland is not included at this stage, see. 4.7.1 and Table

The following sections discuss the calculation methods for prostitution, drug trade, alcohol and tobacco at Statistics Finland in more detail, the results of the calculations, as well as the outline of the legislation related to the sub-areas, the data sources used and country division, and whether international trade in goods or services are included in the phenomenon.

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2 Background

In 2015, a grant funded project “EU:Content development of National Accounts”, was launched where the ”Illegal economic activities in Balance of Payments” was included. The objective of the project was to update the methodology for the illegal economy and analyse new data sources. At the same time, the aim was to develop the calculation process in order to ensure uniform handling and consideration of the illegal economy in National Accounts and Balance of Payments.

The main Regulation concerning the National Accounts in the member States of the European Union is Regulation (EU) No 549/2013 of the European Parliament and of the Council (ESA 2010), which is based on the the international recommendation on National Accounts System of National Accounts (SNA) 2008. The compilation of the Balance of Payments is based on the International Monetary Fund's recommendation Balance of Payments and International Investment Position Manual (BPM6). The Regulation by the European Parliament on the harmonisation of the gross domestic product at market prices (GDP), the so-called GDP Regulation 1287/2003 links the defining of gross national income to the ESA 2010 Regulation approved by the GDP committee. The GDP committee has outlined that in order to harmonise GDP calculations between member states, estimates on the illegal economy should be included in the calculations. This improves the credibility, comparability and coverage of the figures. As a result of the National Accounts calculations the own resource that is based on the gross domestic product is defined, which is the payment paid by the member state to the EU institutions. Own resources based on GDP have been the biggest income item of the EU's budget.

Last time the methodology and sub-areas included in the calculations were updated more extensively in a grant funded project carried out in 2007 to 2008 called ”Finland's non-observed economy” 40100.2000.001-2006.398. The project was divided into a section of the grey economy and a section on the illegal economy. The outcome for the illegal economy was that the drug trade was included in the figures of the National Accounts for the first time and the calculation of the smuggling of alcohol and tobacco, as well as prostitution were developed. Estimates on prostitution and smuggling had been included in the calculations already earlier but the figures were not considered comprehensive.

The project that was carried out now focused on developing sub-areas of the illegal economy that had already been considered in the National Accounts and Balance of Payments, no new sub-areas were considered. Special attention was paid to the country division of the illegal economy.

The project concerning the illegal economy was mainly the responsibility of one person. The experts of the National Accounts and Balance of Payments units commented on the results of the project as it progressed.

3 Prostitution

3.1 Legislation

In Finland, legislation does not prohibit prostitution even though legislation does take a stand on selling and buying sexual services. Buying and selling of sex are legal activities with certain limitations.

The Criminal Code (39/1889) prohibits pimping and human trafficking, as well as purchasing sexual services from a minor or victims of human trafficking or pimping. According to the Aliens Act (301/2004), a foreign national can be turned back if there is reasonable suspicion that he or she sells sexual services. The Public Order Act (612/2003) takes a stand on street prostitution by prohibiting buying and offering of sexual services against payment in a public place.

Taking into consideration the legislation in Finland, recording prostitution as part of the illegal economy is misleading. Estimates concerning prostitution should be included in the calculations of the National Accounts as before but in future as part of the grey economy.

3.2 Data sources

There are more and more regular research data available concerning drugs and the smuggling of both tobacco and alcohol compared to prostitution. The latest extensive study, Prostitution in Finland, is from more than ten years ago and the challenges presented by the research topic is discussed at the beginning of the study:

“If it is challenging to get an overall picture of prostitution in a country the size of Finland, it is globally impossible. ...Important areas of prostitution are so well hidden that a researcher can only catch echoes of them.

There are no exhaustive sources concerning Finnish prostitution. Some official reports have been published but they mainly focus on the criminalised forms of prostitution. When there is no scientific research and authorities' practical information is small and selected, nothing definite can be said about the phenomenon.” (Kontula, Prostituutio Suomessa 2005)

Kontula's report has been the main source on which current calculations are based. Now, comments from Pro-tukipiste, an independent expert organisation active in Finland, have also been utilised as a new source. The task of Pro-tukipiste is to promote and support the fundamental and human rights of those currently or previously involved in sex work and victims of human trafficking. The organisation provides low-threshold social and health services, as well as support and advice services for people in the sex industry and victims of human trafficking.

Crucial in Pro-tukipiste's services is confidentiality and all services are offered anonymously. Pro-tukipiste does not collect identifiable data on their customers but they do use an electronic recording system Prologi where data on, for example, the needs of Pro-tukipiste's customers and stakeholders are stored.

The statistics on offences and coercive measures published by Statistics Finland provide data on reported offences related to pimping and the sex trade. The basic data of the statistics come from the system of reported offences used by the police and based on automatic data processing. Data on cases sentenced in court come from the statistics on prosecutions, sentences and punishments. The source for the statistics is the Legal Register Centre. The offence categories in both statistics are pimping, attempted pimping, aggravated pimping and exploitation of a person that is the victim of the sex trade. Sentences are reported based on the day of sentencing, not the time when the crime occurred, so the year when the crime took place and the year when the sentence was given may differ. Legal statistics can give some indication of the development of the phenomena, but the figures are not directly applicable for estimating the actual change in the annual value of prostitution.

Table: Number of reported offences and sentences in Finland 2001-2015

Number of reported offences	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Pimping	10	9	4	5	8	2	16	38	9	14	11
Attempted pimping	1			2	1		1		5		1
Aggravated pimping	3	4		6	9		2	14	9	8	6
Exploitation of a person that is the victim of the sex trade			23	163	24		1	13	140		6
Sentences	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Pimping	10	12	8	3	12	21	5	4	7	6	9
Attempted pimping	4	1						1			
Aggravated pimping	4		4		2	6		2	8	2	7
Exploitation of a person that is the victim of the sex trade				2	29	5			40	3	1

3.3 Calculation method

The estimates on prostitution are based on estimates on the supply side. The GNI committee (GNIC/230) recommends a calculation method based on the types of prostitution, like street prostitution or prostitution taking place at clubs. In Finland, the calculation is not based on the types of prostitution, instead, prostitution in Finland is divided into visiting prostitutes and prostitutes permanently resident in Finland and further into Finnish and foreign prostitutes.

Output (P1)

The number of persons working as prostitutes on a random day is estimated. It should be noted that the total number of persons offering sexual services is higher than the figure estimated above because every prostitute does not work on every day of the year. In addition to the number of persons, the number of customer contacts and the price of the service are

estimated. The output is achieved by multiplying these three figures. The calculations have been carried out separately for Finnish and foreign prostitutes.

In her book published in 2008, Punainen Eksodus, researcher Anna Kontula estimated that the number of persons performing sex work on any given day is 515 and the total number of sex workers is 7,910 (Kontula, Punainen Eksodus, 2008). In the updated calculations that are based on data from Pro-tukipiste, Statistics Finland has made an estimate that some xx persons perform sex work on any given day. One sex worker is estimated to have xx to xx customers per day. Prices vary, for example, based on the service offered, but the average prices are estimated to be between EUR xx and xx.

Intermediate consumption (P2)

Expenses consist primarily of rents and, to a small amount, of other expenses recorded under Materials and supplies. Rent expenses are fixed, and it should be noted that when the number of customers changes the ratio of expenses to output does not necessarily remain unchanged as the calculation has previously assumed.

Private consumption (P3)

All use of prostitution services is assumed to be households' private consumption.

Imports (P7)

In terms of prostitution, service imports include services offered in Finland by foreign prostitutes working in Finland for under a year. Belonging to the Finnish social security system has been utilised as a factor when assessing the service imports by foreign sex workers, i.e. if a foreign citizen is not entitled to social security, he or she probably does not live in Finland permanently and the offered service is classified as imports.

An estimated xx per cent of Pro-tukipiste's customers are entitled to social security. In general, the right to Finnish social security is determined based on the duration of the stay in Finland. Nearly everyone living in Finland permanently, apart from some exceptions, are entitled to social security. In case of immigration, the Social Insurance Institution of Finland assesses whether the person is entitled to social security. The decision is affected by the Social Insurance Institution of Finland's assessment on the permanence of the move, which in turn is influenced, for example, by employment contracts and family relations. If a person is liable to apply for a residence permit, the requirement from the viewpoint of social security is that the residence permit is granted for at least one year (Kela 2017).

Prostitutes working in Finland for a short period of time expenses in Finland should actually be estimated in export instead of intermediate consumption (IC) but this part is estimated to be statistically insignificant and included in IC.

Exports (P6)

By definition, service exports in terms of prostitution would be sex services offered by Finnish prostitutes abroad. Some Finnish sex workers do jobs abroad upon order, the length of the trip can vary from a few days to a couple of weeks. If there is one customer, a fixed sum is charged for the entire job that can vary from a couple of thousands of euros to several thousands depending on the content of the services and the duration of the trip. There is, however, no estimate on the number of persons offering such services. It is assumed that the economic value is not statistically significant and service exports are not recorded. It is also not known whether these services are primarily offered to foreign or Finnish customers even though the trips are made abroad.

Services of prostitutes resident in Finland used by tourists visiting Finland should also be included in exports. The value of such services are assumed to be included in tourism income and are, thus, recorded in the exports of services. It is estimated that tourists only use little services offered by foreign prostitutes visiting Finland.

3.4 Country division

According to Pro-tukipiste, visits are not recorded so well and exhaustively by country that the data are reliable. The data from Prologi are, however, the most recent concrete source available, so the distribution is utilised as the basis for country division together with other estimates. The most common countries of origin are xx, xx and xx. In the electronic statistical system, the country of origin distribution in 2016 was as follows:

- EU countries (including Finland): xx %
- Eastern Europe and Central Asia xx %
- Other Asia xx %
- Africa xx %
- Unknown xx %

It should be noted that all prostitutes do not use Pro-tukipiste's services, even though a majority of those who do not seek these services are, according to Pro-tukipiste's estimate, Finnish. It is estimated that Pro-tukipiste reaches around one-half of the persons offering sexual services. Those with no information on the country of origin (xx %) are divided evenly between the above-mentioned rough country categories (excluding Finland) and then these categories are divided into individual countries. It is assumed that the country division that was formed this way covers one-half of prostitution and the remaining half consists of Finnish workers that are also included in the above-mentioned category EU countries.

Table: Prostitution in Finland

Prostitution		Year 2015, million EUR	
Sector	S.14		
NACE Rev. 2	96		
Output of goods and services	P1	X	
Intermediate consumption (IC used by prostitutes)	P2	X	
Gross value added (at basic prices)	B1G	X	
Household final consumption expenditure	P3	X	
Import of services	P72	X	
intAcc: Services: Personal, cultural, and recreational services other than audiovisual and related services; Heritage and recreational services	SK23	X	

4 Production and Trafficking of Illegal Drugs

4.1 Legislation

In Finnish legislation (Narcotics Act 378/2008), the production, manufacture, imports into the Finnish territory, exports from the Finnish territory, transport, transit transport, distribution, trade, handling, possession and use of narcotics are forbidden, as is growing of certain plants and mushrooms according to the Narcotics Act. The Finnish Medicines Agency Fimea can grant permission to manufacturing, imports into the Finnish territory, exports from the Finnish territory and handling of narcotics.

The Narcotics Act also defines the data collection tasks of the National Institute for Health and Welfare THL concerning narcotics. The task of THL is to collect, produce and acquire data on narcotics for statistics and research and on actions taken to prevent illegal use of narcotics. THL act as Finland's representative in the European information network (EMCDDA) concerning data collection issues related to narcotics and their abuse.

4.2 Data sources

THL has annually published the report "Huumetilanne Suomessa" (Finland Drug Situation) which is one of the national annual reports of the European information network on drugs and drug addiction (REITOX) coordinated by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). The latest report is from 2015 concerning the year 2014. The report will not necessarily be annual in future, for example, the report was not published in 2016 and the next report will possibly be published in 2017. However, THL still delivers annual price and purity/dilution data to EMCDDA and on request to Statistics Finland.

THL's indicator bank Sotkanet (Sotkanet.fi) includes some indicators concerning narcotics. Regional data are available, for example, on the

number of customers in welfare for abusers of intoxicants and narcotics offences recorded by the police. However, no indicators, for example, concerning the use of narcotics are directly available.

Important data sources are various expert articles and when compiling this report we have also directly contacted, e.g. the experts at THL and the National Bureau of Investigation.

4.3 Types of narcotics

The calculations take into account

- Cannabis
- Amphetamine
- Methamphetamine
- Cocaine
- Ecstasy
- Heroin
- Buprenorphine (Subutex)

All countries that have delivered research on the illegal economy to Eurostat have included cannabis, ecstasy, amphetamine, cocaine and heroin in their calculations. In some countries, both LSD and buprenorphine (Subutex), as well as illegal use of intoxicating medication are included (GNI Committee 2012).

Cannabis

Cannabis is the most common narcotics both in all of Europe and in Finland. In THL's latest Finland Drug Situation 2014 report, where the source for the section on prevalence of narcotics is unpublished situation reports of the National Bureau of Investigation on narcotics offences and additional information provided by the National Bureau of Investigation, it is stated that confiscations of cannabis have increased in the 2000s (THL - Finland Drug Situation 2014). The occurrence is based on usually small-scale growing becoming more common, some of the crop is also sold. The use of cannabis becoming more common seems to focus in particular on men aged 25 to 34, in 2010 as many as 40 per cent reported that they had tried cannabis at least once (Metso, Winter and Hakkarainen 2012). It seems that the use of cannabis has increased strongly in recent years (Karjalainen, Savonen and Pekka 2016).

Cocaine

Cocaine is still a marginal narcotic but has become more common over the past ten years. Finnish cocaine use is lower than in other European countries. (Use of illicit stimulant drugs in Finland: A wastewater study in ten major cities 2014)

Opiates: heroin

There is still very little heroin on the markets, while the use of Subutex as a narcotic is still high in Finland. Of opiates, buprenorphine is presented in a separate section due to its exceptional position in Finnish narcotics use. Annual heroin confiscations are below one kilo (0.1 kg in 2014). In 2014, no heroin marker was found in a content measurement of waste water, which according to research indicates that heroin is not used or the use is very limited. (Current trends in Finnish drug abuse: Wastewater based epidemiology combined with other national indicators 2016)

Amphetamine and methamphetamine

Next to opiates, the users of amphetamine (amphetamine and methamphetamine) are considered drug abusers. Population surveys do not really reach drug abusers as they do not reach persons without a permanent address nor those living in institutions (Metso, Winter and Hakkarainen 2012). There are register-based estimates concerning drug abusers. Problem use of amphetamine seems to concentrate more on Southern Finland than that of opiates (Ollgren, ym. 2014). Based on the population surveys of 2006 and 2010, altogether 2.1 per cent of the population had tried amphetamine at some time in their life. (Hakkarainen, Metso and Salasuo, Hamppuikäpolvi, sekakäyttö ja doping. Vuoden 2010 huumeenkyselyn tuloksia. 2011:4)

Ecstasy

According to THL's latest report (THL - Finland Drug Situation 2014), the use of narcotics in general has been relatively stable but among the group using stimulants in particular, the popularity of ecstasy has increased.

Opiates: buprenorphine

Among Finns, the most abused opiate is buprenorphine, whose original intended use is as a painkiller but is these days also used as addiction treatment and replacement therapy medication for people with opiate addiction. In Finland, the main drug trade names are Temgesic and Subuxone that replaced Subutex. The narcotics calculations of the illegal economy only take into consideration buprenorphine abuse not legal use as medication.

Buprenorphine abuse and its central role in injection use is a special character of Finnish narcotics use (THL - Finland Drug Situation 2014). Heroin use has in Finland primarily been replaced with Subutex imported from France. In France, accessibility of Subutex from doctors is easier and cheaper than in Finland so smuggling to Finland and sales in street trade are economically enticing.

LSD

In Finland, LSD has not been included in the calculations even though almost similar source data are available as on other narcotic substances. The reason for this is the relatively small size of the LSD markets. According to the Drug problem in Europe report, the use of LSD is seen as marginally small in Europe (EMCDDA, Annual report on the state of the drugs problem in Europe 2012). In Finland, confiscations involving LSD

are considerably lower than other confiscations of narcotic substances. The police and customs have confiscated around 1,000 LSD blotters per year. If a rough estimate was that confiscation would catch around ten per cent of smuggled drugs, the value of the smuggled batch would be clearly below EUR one million.

4.4 Calculation method

The figures in the illegal economy concerning narcotics are based on supply side estimates. In the conventional calculation method, users are divided into two groups, regular and occasional users. The number of users, size of a dose, price of a hit and number of usage days per year are estimated within each group by narcotics group. There are estimates available on each of these but it should be noted that each part of the calculation also involve uncertainties. Next to what is described above, a new calculation method where concentrations of narcotic substances are measured from waste water has been introduced. This is explained in more detail in a separate section.

Output (P1)

The value of production from narcotics mainly comprises the commercial margin from the selling of drugs. In addition, domestic production of narcotics will be considered in future. Previously, it has been estimated that the value of production in Finland comprises purely the commercial margin generated from supplying drugs and that manufacture for sales and personal use has been statistically insignificant in Finland in terms of economic value. However, already ten years ago it was found that the cannabis markets have globally become increasingly local (United Nations Office on Drugs and Crime 2006). Also according to the National Bureau of Investigation's estimate, the assumption that all narcotic substances are of import origin is incorrect at least in terms of cannabis.

Intermediate consumption (P2)

It is assumed that the narcotics sold in Finland have been produced or manufactured elsewhere and imported to Finland, and that there is no intermediate consumption. In terms of storage and distribution (for example, fuel costs), there is probably some intermediate consumption but this has been estimated as low, and the assumption has also been that it is already included in statistics through private consumption.

If the manufacture of cannabis for personal use and sales of cannabis produced in Finland are included in the calculations, the intermediate consumption related to manufacturing must also be considered unless the share is already included in statistics as part of private consumption. Own-account small-scale growing of cannabis does not, however, require considerable financial investments according to research (Hakkarainen, Perälä and Metso, Kukkaa pukkaa - kannabiksen kotikasvatus Suomessa 2011:2).

Private consumption (P3)

The use of narcotics is assumed to be purely household's private consumption.

Imports (P7)

Imports of illegal drugs are included in the statistics on foreign trade of goods. The value of imports is indirectly determined when the estimated margin is subtracted from the sales value of narcotics in street trade. Determining the difference in the value of imports and street trade even on a rough level is challenging as this is affected by the dilution of narcotics, commissions and other price increases.

Some users may import part of the narcotics directly themselves, this proportion is estimated to be small and already included in the item consumption expenditure of resident households in the rest of the world.

Exports (P6)

It is estimated that no narcotics are manufactured in Finland for export and narcotics exports consist of transit transport that does not generate value added in the economic territory of Finland. Statistics Finland has not estimated the value for transit transport of narcotics. According to Finnish Customs, narcotics are still smuggled through Finland to Russia and Western Europe and of Nordic countries especially to Norway (Finnish Customs 2015).

4.4.1 Method 1: Based on number of users

There is no annual estimate on the number of narcotics users available. In earlier calculations, narcotics users have been divided into two groups, regular and occasional users, now a new calculation based on waste water analysis is introduced next to the calculation based on users but calculations based on the number of users are still needed.

Population surveys concerning the use of narcotics have been carried out around every four years, the latest survey is from 2014. The target group consisted of Finns aged 15 to 64/69. A separate survey targeting drug abusers (amphetamine, opiates) has been carried out roughly every five years. The estimates on the number of drug abusers is based on register data describing harms related to narcotics use. In addition to the above-mentioned surveys various sources provide results of ad hoc surveys related to narcotics use.

Calculations based on the number of users is also in future utilised for cannabis and opiates (buprenorphine and heroin). For these narcotics, data on the use of the narcotics in question are usually available for the past year and past month. Annual and monthly prevalence data have been utilised when estimating annual usage days. The method is based on the calculation method described by Hakkarainen, Kainulainen and Perälä (Suomen kannabismarkkinat - paljonko pilveä palaa? 2006:6).

The street trade value of narcotics is achieved by multiplying the number of users with usage days, size of a dose and the street trade price.

4.4.2 Method 2: Based on consumption (waste water analysis)

A new opportunity to assess consumption has in recent years been concentration measurement from waste water. When drug residues are measured from waste water an estimate can be made on how much 100% narcotics are used. Compared to the current calculation method it is no longer necessary in all respects to divide narcotics users into regular and occasional users, estimate the annual number of users in each user group, the number of usage days per year or the size of a dose as the annual usage volumes of narcotics, dilution and prices can be used as the base. The number of estimation errors can be assumed to decrease in this respect, even though it should be noted that waste water analysis involves its own methodological challenges.

Two articles have been published concerning measurements made in Finland on which the estimates made at Statistics Finland rely heavily. *Use of illicit stimulant drugs in Finland: A wastewater study in ten major cities* (Kankaanpää, Ariniemi, et al. 2014) published in 2014, and the more recent *Current trends in Finnish drug abuse: Wastewater based epidemiology combined with other national indicators* (Kankaanpää, Ariniemi, et al. 2016) published in 2016. The first study concerning 2012 covered around 40 per cent of the population and the second concerning 2014 around 45 per cent. In the articles, the results have been expanded to apply to the entire population.

Drug residue concentrations in waste water are very small and, thus, the method cannot recognise all types of narcotics reliably. Thus far, concentrations of amphetamine, methamphetamine, cocaine and MDMA (ecstasy) have been assessed. In future, the results of waste water analysis will be utilised by Statistics Finland in calculating the economic value of these narcotics.

The studies of 2012 and 2014 have been repeated in 2016 and it is planned that the results will be released in 2017. The aim is to repeat the study again in 2018. The assumption is that the study will continue at regular intervals.

The conclusions of the publications do not discuss only results generated from waste water, the researchers have also assessed the measurements in relation to other data available concerning narcotics such as confiscation and user data, as well as drug concentration and price data. In the study, the value of street trade of narcotics is calculated to be EUR 70 million for amphetamine and EUR 10 million for both methamphetamine and cocaine (Current trends in Finnish drug abuse: Wastewater based epidemiology combined with other national indicators 2016).

Utilising the daily use volumes from the 2014 study concerning the year 2012 (*Use of illicit stimulant drugs in Finland: A wastewater study in ten major cities 2014*) we ended up with similar values when combining straightforward assessments of dilution and the street prices of narcotics with use volumes.

4.5 Prices

4.5.1 Street trade price

Once a year the National Bureau of Investigation sends an inquiry to all police departments concerning the street trade prices of various narcotics. The price estimates are based on the preliminary investigation data of suspected narcotics offences and intelligence.

The estimation of average prices is made difficult by the fact that street prices may vary considerably in Finland depending on the geographical location. The report *Huumetilanne Suomessa* (THL - Finland Drug Situation 2011) states that in Southern Finland, the prices are usually clearly lower than in other major cities. The National Bureau of Investigation complements these data with the fact that the difference can be especially large between Lapland and the Helsinki region.

No user group-specific estimates have, however, been made based on the geographic place of residence. Estimates on prices and price development are based on data reported by the National Institute for Health and Welfare, which are based on data from the National Bureau of Investigation.

In addition to the geographic scene of the drug trade, the price is affected by the dilution or how pure the sold narcotic substance is. More about dilution in a separate section. The mode reported to EMCDDA is primarily used in the accounts that is, in practice, the national average price estimated by the National Bureau of Investigation.

4.5.2 Narcotics trade online

In addition to the so-called street trade, narcotics are also traded online. The number of persons trading narcotics online is not known and the value of narcotics trade online has not been determined at Statistics Finland. In an article in the *Suomen Kuvalehti* periodical (34/2016), Detective Superintendent Jukka Paasio of the narcotics division of the Helsinki Police Department says that “We have no statistics on national level” “It is very difficult to assess how large a share of the Finnish drug trade is carried out online. It would require a detailed and deep analysis.” According to the article, narcotics trade online would have grown considerably over the past decade and the reason for this is, in particular, the anonymity offered by the Tor network and the virtual currency bitcoin.

A Finnish computer security researcher, Juha Nurmi has coded a software that analyses the trade happening in the Tor network on *Silkkitie*, the biggest online drug trade site in Finland. According to Nurmi’s estimate, the value of the drug trade on *Silkkitie* in 2015 was around EUR 2.5 million (www.Tutka.pro 2016). The software utilises, for example, the price data given on the site and changes in inventories. Nurmi says, however, that an increase in the online trade of narcotics does not necessarily mean an increase in the use of drugs. It is assumed that the trade is only changing its form.

Nurmi and Kaskela state “Preliminary research results show that internal trade in Finland is small-scale and amateur based. On the other hand,

internal drug trade in Finland is carried out online outside Silkkitie as well, even though the site is currently the biggest trading place online. The sellers' income is not high. So one could actually say it is a hobby or an auxiliary activity of persons interested in illegal intoxicants rather than business activity. Service maintenance also seems to be an ideological activity and not so much business activity.” (Nurmi and Kaskela 2015:4)

Jussi Perälä, who researched Finnish drug trade in his PhD thesis, says that the drug usage culture involves a certain kind of communality (certain situation, places and groups of people) and thus drug trade transferring completely to the web would not be a believable course of development. (Vahvanen 2015)

4.5.3 Import price

An estimate was asked from the National Bureau of Investigation on the import/wholesale prices. The size of the imported lot, the pureness of the narcotics and how established relationships the importers and the dealers of the lot have affect the prices considerably so the estimates are very rough and indicative.

- Cocaine: EUR xx k to xx k / kg
- Amphetamine/methamphetamine: EUR xx k to xx k / kg
- Ecstasy: EUR xx k to xx k / lot of 1,000 tablets
- Hashish: EUR xx k to xx k / kg
- Marijuana: EUR xx k to xx k / kg
- LSD: EUR xx / lot of 100 blotters
- Opiates: no estimate

4.6 Margin and dilution

The previous report on the hidden economy (Suomen piilotalous (Finland's hidden economy), 2008) resulted in a general and rough estimate on the relative share of the margin that was assumed to cover dilution and other actual increase in prices from imports to consumption. Now the drug-specific margin has been calculated from the ratio of import and street trade prices. If there is no estimate of the import price, the general margin is used and dilution data are utilised.

The National Bureau of Investigation Forensic Laboratory reports annually on the purity concentrations of drugs to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) that operates under the European Union. The inquiry covers cannabis, cocaine, amphetamine, heroin and ecstasy.

Data on dilution are useful especially when mapping the use volume of narcotics based on waste water analysis. The data do not, however, directly indicate the difference in the concentration between imported narcotics and narcotics traded on the street nor whether such a difference exists. This would require data on the concentration of lots confiscated by the customs

and on lots caught from street trade even if this comparison would involve uncertainty factors. The National Bureau of Investigation uses concentration measuring, for example, to identify drug lots that originate from the same source. Dilution is primarily assumed to take place before the narcotics enter Finland.

4.7 Country division

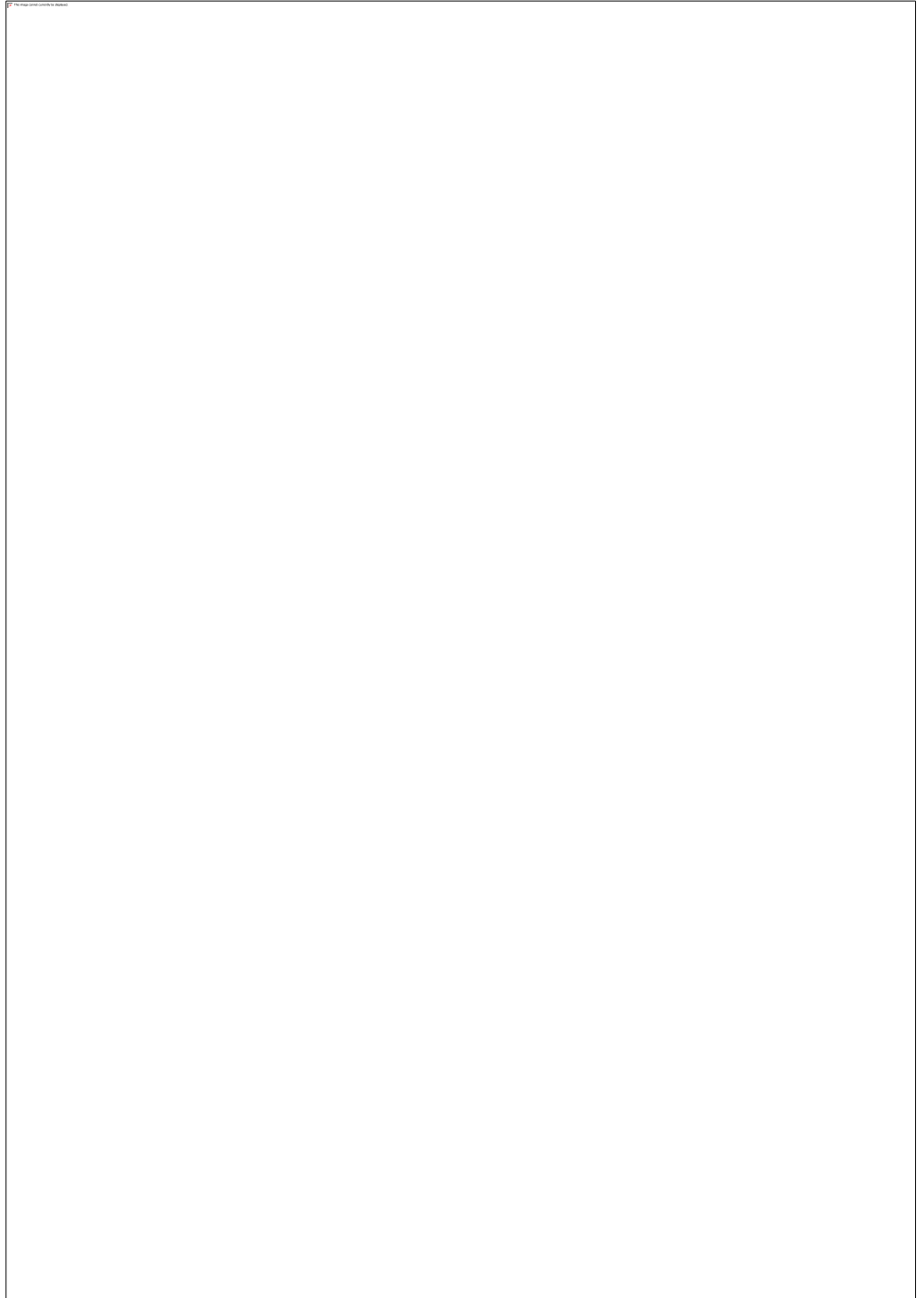
Narcotics are imported to Finland by road in passenger cars, vans and lorries. Narcotics are hidden in clothing and luggage and increasingly smuggling is also carried out inside the body. Via waterways, narcotics enter Finland aboard freighters, high-speed vessels and yachts. Airways are also utilised to some extent but the tightened security measures connected to tourism traffic have decreased the commonness of this smuggling route. The biggest lots smuggled through air come to the country through air freight and express freight enterprises.

According to the National Bureau of Investigation, the country of origin for hashish is Morocco, amphetamine and methamphetamine originate from the Netherlands and Belgium and probably also from Lithuania and the Czech Republic. Cocaine originates from South America (Bolivia, Columbia, Peru), heroin, in turn, from Afghanistan, India and South East Asia. The source for buprenorphine/Subutex is France.

Narcotics travel to Finland primarily along the routes marked on the map by the National Bureau of Investigation and the border crossing countries are primarily the following by type of narcotic:

- Subutex: Estonia, Sweden, Germany, France
- Hashish: Sweden, Germany, Estonia
- Amphetamine: Sweden, Russia, Estonia, Germany
- Ecstasy: Sweden, Russia, Estonia
- Heroin: Russia, Estonia

Graph: Routes for trafficking drugs to Finland



The country division shown above will be utilised in goods trade in Balance of Payments and in National Accounts. In practice, the country division for statistics on goods trade has been carried out by distributing the imports of each type of narcotics evenly by country utilising the country division above, in other words, for the sake of simplicity, it is assumed that 50 per cent of heroin comes from Russia and 50 per cent from Estonia. According to Finnish Customs, amphetamine has also arrived in

Finland as packets from Germany (Finnish Customs 2015). Both the country of origin and source country are registered for narcotics imports.

4.7.1 Manufacture of cannabis in Finland

Previously, it has been estimated that all narcotics consumed in Finland have been imported and thus there is no own manufacture in Finland. Above, in the section describing the calculation method for narcotics, it has, however, already been stated that this assumption is probably wrong.

The analyses from waste water do not currently cover cannabis as the results provided by its biomarkers are not considered sufficiently adequate (Kankaanpää, Ariniemi, et al., Current trends in Finnish drug abuse: Wastewater based epidemiology combined with other national indicators 2016) and waste water studies do naturally not tell of the origin of the substance so the question would still remain what proportion has been manufactured in Finland. There is some domestic research on the use and growing of cannabis.

According to a study published in 2011 that was based on interviews with growers, a web inquiry and population survey data, around 40,000 to 60,000 Finns had grown cannabis at some point and in 2010 it was estimated that there were slightly under 10,000 active growers (Hakkarainen, Perälä and Metso 2011:2). The National Bureau of Investigation has ended up at a similar estimate in 2007 (THL - Finland Drug Situation 2009). In order to determine the value of cannabis grown in Finland one should, in addition to the number of growers, also know the number of plants per grower, how much narcotic substance can be produced from one plant and the price.

In the web inquiry directed at growers, the majority (72%) reported that they were growing one to five plants at one time. Second most (18%) were growing six to ten plants at one time and only two per cent reported they were growing more than 20 plants at one time. Based on confiscations by the police and cases processed at district courts, the number of plants is higher but, on the other hand, it can be assumed that the risk of getting caught and, thus, ending up in the mentioned material is higher for larger cultivations. If the average number of plants is assumed to be four and a cautious estimate is two yields per year, the annual estimate would be 80,000 plants per year. In 2010, altogether 15,000 plants were confiscated so with the above-mentioned assumption 19 per cent would have been caught assuming that all confiscated plants were from Finland. According to the data from 2004, the confiscation percentage on the Finnish cannabis markets was 10 to 25 per cent (Hakkarainen, Kainulainen and Perälä 2006:6).

The growers were asked how much dried cannabis one plant produces. The responses varied from below 25 grams to over 100 grams which is more than the estimate of 25 to 28 grams in international literature. In the narcotics offence prosecution group one plant is assumed to produce 25 grams (THL - Finland Drug Situation 2013) and this was also used in the

calculation. With the above-mentioned assumptions and using a per gram price of EUR 10/g the annual value of growing is around EUR 20 million.

The question that remains is what share of this production is for own final use and what is to be sold on the markets? Fifteen per cent of those who responded to the web inquiry reported that one reason for growing the plants was to sell cannabis. Of all respondents, 36 per cent said they had sold sometimes and 93 per cent was sold to persons the seller knew personally. The study conveys the picture that a majority of growers grow cannabis for personal use and in addition the crop may be distributed for free to acquaintances. Sixty per cent of those who had sold from their latest crop had earned at most EUR 200. The market value of one crop of four plants is roughly EUR 1,000 so it seems that selling does not primarily aim at high profits but maybe at covering costs. Sixty-six per cent of growers said they had at most spent EUR 100 on their latest crop.

It is challenging to divide the output into own use and market use based only on the web inquiry and thus a simplified solution of reporting domestic cannabis production as a whole as production for own final use has been used.

Intermediate consumption consists of acquiring seeds, water, electricity, other running costs of premises and machinery. The share of intermediate consumption in the value of production is estimated as 15 per cent.

No annual data source is available on domestic production so it is assumed that the ratio of total cannabis consumption to domestic production is standardised until new survey results are available and if no other sources indicate different development.

Production of cannabis for own final use in Finland has not been implemented in National Accounts, issue is under consideration during next time series revision, projected year 2019.

4.8 Summary

New, updated calculations on the economic value of narcotics trade increase in particular the estimates on the use of cannabis and ecstasy. Estimates on heroin and cocaine, in turn, decrease compared to the previous level. At the end of the report concerning THL's population surveys for 1992 to 2010 (Metso, Winter and Hakkarainen 2012) the uncertainty connected to the figures is discussed.

“It should, however, be borne in mind that the survey object is a sensitive phenomenon that is sanctioned by law so the results always involve a certain degree of uncertainty caused by secrecy and unwillingness to respond especially when it comes to the accuracy of actual figures. Therefore, the table section mainly presents total figures but even when interpreting these the reader should focus on the broad lines and be aware of the risks of over interpretation, for example, a change of one percentage point can indicate a difference of one or a few decimal points that shifts the rounding in a new direction.”

The best estimate is reached by combining data from various sources. Taking into account the complex uncertainty related to the figures, the current revised and updated figures can, however, be assumed to meet their primary objective in this connection, that is, to improve the coverage of the National Accounts from the statistical viewpoint.

Table: Production and Trafficking of Illegal Drugs in Finland

Production and Trafficking of Illegal Drugs	Year 2015, million EUR		Year 2015, million EUR
	Drug Trafficking		Production in Finland for own final use*
Output of goods and services	P1	X	X
Intermediate consumption (IC used by cannabis grovers)	P2		X
Gross value added	B1G	X	X
Household final consumption expenditure	P3	X	X
Imports of goods	P71	X	
intAcc: Coverage: Smuggling	G131	X	

*Note: Production in Finland has not been implemented in Finnish National Accounts at the moment

5 Smuggling: alcohol and tobacco

5.1 Calculation method

Output (P1)

The value of smuggling output consists of the sales margin, i.e. the difference between the street trade value and the import value.

Intermediate consumption (P2)

No intermediate consumption is included in the statistics for smuggling as there is no information on the share of travel, transportation and storage expenses, but these expenses are estimated to be minor and recorded in demand as part of private consumption.

Private consumption (P3)

Demand is recorded in full in consumption of households.

Imports (P7)

The calculation of imports is based on the volume of smuggling from abroad to Finland. The import value is derived by comparing the price levels of tobacco and alcohol in Finland and the countries of origin for smuggling.

Exports (P6)

Based on similar or lower price levels in neighbouring countries, it is assumed that no alcohol or tobacco products are smuggled outward from Finland.

5.2 Alcohol

5.2.1 Legislation

Households are permitted to manufacture mild alcoholic beverages through fermentation for private consumption not intended for sale. Manufacture by distillation is forbidden. Permission granted by Valvira, the National Supervisory Authority for Welfare and Health, is needed to manufacture alcohol for commercial, as well as educational and research use. Wholesale of alcohol is also subject to permission (Alcohol Act (1143/1994)). Chapter 46, Sections 4 and 5 of the Criminal Code (39/1889) provide for smuggling. An amendment to the Alcohol Act is being prepared in Finland, which, if it is implemented, may change the above-described items.

5.2.2 Data sources

The National Institute for Health and Welfare, THL annually releases the Alcoholic beverage consumption statistical report and the Yearbook of Alcohol and Drug Statistics, which the data and calculations in the following sections are largely based. THL collects data on the total consumption of alcohol in accordance with domestic and international classifications in the statistical report. The Yearbook of Alcohol and Drug Statistics describes the objectives of Finland's alcohol and drug policy and their links to international alcohol and drug policy programmes and agreements. The yearbook presents key data concerning, for example, consumption and sales of alcoholic beverages, alcohol and drug-related crime and trends in the trade of alcoholic beverages.

5.2.3 Alcohol consumption

THL publishes the total consumption of alcoholic beverages as 100% alcohol. Total consumption consists of recorded (retail and licensed consumption) and unrecorded consumption.

Unrecorded alcoholic consumption includes

- Legal manufacturing at home
- Illegal manufacturing at home
- Alcohol imports by tourists
- Smuggling
- Consuming substitutes
- Alcohol consumed by Finnish residents outside the borders of Finland less the amount of alcohol purchased by foreign citizens in Finland

Unrecorded consumption in 2015 amounted to 2.3 litres of 100% alcohol per citizen aged 15 or over.

Alcohol smuggling was rare in the early 1990s. After this, Finland's membership to the EU opened the borders and smuggling increased. Manufacturing at home has decreased in Finland since the mid-1990s and since 2004 the smuggling of alcohol and illegal manufacture have also decreased. The decrease in smuggling is linked to the control related to the EU membership becoming effective, and it is estimated that professional smugglers have disappeared and now smuggling is largely an activity of private travellers considered households and, to a small extent, of small entrepreneurs.

The figures reported by THL are based on previous interview surveys and results from police and customs activities. The development of smuggling is not currently actively monitored but more detailed monitoring is carried out from time to time, for example, most recently in connection with the Joint Action on Reducing Alcohol Related Harm in 2014 to 2016, which showed that smuggling is minor.

5.2.4 Smuggling of alcohol; method

The value of retail sales of 100% alcohol per litre is calculated based on known data of consumption of 100% alcohol per citizen aged 15 or over and data on the retail consumption value of alcohol (beverage groups total) per citizen aged 15 or over. The estimated volume of illegal manufacture and smuggling is published in the Yearbook of Alcohol and Drug Statistics as 100% alcohol per citizen aged 15 or over. The retail sales value of this item is calculated, i.e. the so-called legal value, utilising the above-calculated price per litre in retail trade and population data.

It is estimated that one-half of illegal manufacture and smuggling of alcohol is smuggling. Alcohol is most likely smuggled to Finland from countries with lower price levels, namely Russia and Estonia. Based on the differences in the alcohol price indicators of Finland and the countries in question, the import value of smuggled alcohol is estimated. The margin is estimated to be one-half of the difference between the so-called legal value and the import value.

Table: Smuggling of Alcohol in Finland

Smuggling of Alcohol	Year 2015, million EUR	
Sector	S.14	
NACE Rev. 2	47	
Output of goods and services	P1	X
Intermediate consumption	P2	
Gross value added	B1G	X
Household final consumption expenditure	P3	X
Imports of goods and services	P7	X
intAcc: Coverage: Smuggling	G131	X

5.3 Tobacco

5.3.1 Legislation and taxation

An objective to end the use of tobacco products has been recorded in Finnish legislation (Tobacco Act (549/2016)). In legislative history, the objective was set for 2040 and smoking, for example, in restaurants is highly restricted in Finland, and marketing and display of tobacco products is forbidden. The Tobacco Act was last amended in late 2016, when the EU's Tobacco Products Directive was implemented and simultaneously some national legislative needs were considered (Ministry of Social Affairs and Health 2016).

Selling of snuff is forbidden in the EU countries but in Finland's neighbouring country Sweden selling of snuff is permitted with special exemption. The use of snuff is not a criminal offence in Finland, however. Importing by post or some other similar manner is forbidden but a private individual can import at most one kilo of snuff during 24 hours for own personal use. Importing of snuff as a gift or for selling is forbidden.

Russia prohibited the sale of snuff from the beginning of 2016 but the law was circumvented by changing the trade name to chewing tobacco. Finnish residents can import tobacco products from Russia with certain limitations after spending over 24 hours in the country, otherwise imports are prohibited. This time limitation concerns imports of tobacco products from outside the European Economic Area (EEA).

In EU countries, taxes form the largest share of the price of tobacco, the share of taxes is around 86 per cent in Finland (The Taxpayers Association of Finland 2016). Tobacco tax is levied on cigarettes consisting of a unit tax based on the number of cigarettes (specific excise duty) and a value tax calculated based on the retail price (proportional excise duty), in addition, value added tax is also levied.

5.3.2 Data sources

The Tax Administration's Grey Economy Information Unit published in 2016 a report called "Tupakkaverotoimijat ja harmaa talous" (Tobacco tax actors and the grey economy). The report studied the grey economy related to tobacco tax also including smuggling, and how tobacco tax authorised enterprises handled their obligations (Grey Economy Information Unit 2016). The new smuggling figures utilised in the National Accounts are based on the estimates presented in the report.

In addition to the reports from the Grey Economy Information Unit, other expert texts are also utilised, like the National Institute for Health and Welfare's (THL) publications and annual monitoring publications by Finnish Customs that include, for example, statistics on confiscations.

The most important of THL's publications is the annual tobacco statistics that contain data on tobacco consumption, price development and taxing of tobacco, tobacco legislation and smoking among the population.

5.3.3 Tobacco consumption

The report by the Grey Economy Information Unit states that the price increase in domestic tobacco products easily creates incentives for both tax-free tourism imports and smuggling, as well as other grey imports that are not taxed, as the price differences of tobacco products compared to neighbouring areas, Estonia and Russia, are large. Both criminal organisations on a large scale and private individuals on a smaller scale are involved in smuggling. Smuggling is estimated to be under control but there is potential for increase as the attractiveness of smuggling is estimated to grow if the price of tobacco in Finland increases, for example, as a result of taxation.

Unrecorded consumption, in Finland referring to the consumption of untaxed tobacco products has, however, been relatively stable. The total consumption in 2014 was 5.2 billion cigarettes. The share of unrecorded consumption was estimated to be around 13 to 15 per cent of the total consumption. Unrecorded consumption consists of tourist imports, smuggling and online purchases. The estimated share of tourist imports in total consumption is around nine per cent and that of smuggling is three to five per cent. Valvira, the National Supervisory Authority for Welfare and Health and Finnish Customs have presented similar estimates of the extent of smuggling. According to an unofficial estimate presented by Valvira, the estimated amount of cigarettes smuggled to Finland would have been around 300 million cigarettes in 2011, which is around five per cent of total consumption. Online purchases are estimated to represent around one-half of a per cent of total consumption (The Grey Economy Information Unit 2016).

The calculation of tobacco smuggling has previously been based on the number of cigarettes confiscated by Finnish Customs, recorded number of legal cigarette sales, and an estimate by Finnish Customs on the share of confiscations in the total amount of smuggling.

The report by the Grey Economy Information Unit provides a recent estimate on the share of smuggling in the total consumption of cigarettes (four per cent in 2014) and the ratio to the recorded taxed consumption of cigarettes per year can be calculated. The recorded taxed consumption comes from THL's tobacco statistics. The outcome is an estimate on the number of smuggled cigarettes. The import value is derived based on the the price differences for tobacco in Finland, Estonia and Russia. The report by the Grey Economy Information Unit presents an estimate on the street trade price of a smuggled packet of cigarettes (20 cigarettes) in Finland. Domestic output and value added is the difference between the street trade and import values.

5.3.4 Country division

Tobacco is smuggled to Finland primarily from neighbouring countries with a lower price level, from Estonia and Russia. Snuff is mainly imported from Sweden. Naturally, the precise division of smuggling between countries is not known so a simplified assumption is made that one-half of cigarettes are imported from Estonia and one-half from Russia, all snuff

imports come from Sweden. The even distribution of cigarette smuggling between Estonia and Russia is supported by the observation that in 2015, altogether 137 million cigarettes were imported by tourists from Estonia and nearly the same number, 130 million, from Russia.

5.3.5 Snuff

Thus far, smuggling of snuff has not been considered in the statistics on the illegal economy. The use of snuff has increased heavily in recent years, by an estimated 68 per cent from 2009 to 2015 (Salminen; Fonselius & Ollila, 2017), so defining the statistical value would be topical in order to create an exhaustive picture of the smuggling of tobacco products. It is, however, conceptually challenging to separate smuggled snuff from legal imports because it is legal to import one kilogram of snuff in one day for personal use.

THL's tobacco statistics provide the annual consumption of snuff and chewing tobacco as thousands of kilograms. The data are based on an interview inquiry on tourist imports carried out by TNS Gallup. Based on the consumption and price data of snuff, it is estimated that snuff imports would amount to over EUR xx million.

According to Valvira's release, 55 per cent of tourists said they had imported snuff boxes for their personal use, 38 per cent to be used by someone else, and seven per cent for both own use and to be used by someone else in 2015. A larger share of persons that have imported snuff now report that they have bought the snuff boxes for someone else (Valvira, 2016).

Including snuff in the calculations on the illegal economy requires work to separate legal and illegal imports, and in order to ensure that an item is not calculated twice as snuff is probably, at least to some extent, included in tourism expenditure abroad.

Table: Smuggling of Tobacco in Finland

Smuggling of Tobacco		Year 2015, million EUR
Sector	S.14	
NACE Rev. 2	47	
Output of goods and services	P1	X
Intermediate consumption	P2	
Gross value added	B1G	X
Household final consumption expenditure	P3	X
Imports of goods and services	P7	X
intAcc: Coverage: Smuggling	G131	X

6 Information system renewals

In connection with the information system renewal of Balance of Payments and National Accounts, uniform processing of illegal economy calculations

will be considered more closely. Calculations concerning the illegal economy are produced centrally for all transactions related to the issue and the figures are stored in a common database table that can be utilised by everyone.

Time series examination will be faster and simpler in future through a cubic browser instead of Excel spreadsheets, as a separate source data process for the figures of the illegal economy will be created in the calculation application of Annual National Accounts. Previously, the estimates for the illegal economy have been separately calculated but in the database they have eventually been part of the corrections process related to coverage together with other corrections related to coverage or statistical delimitations and thus not easily identifiable from the calculation application or cubes.

The new source data process will be introduced in spring 2017. The information system renewal of Balance of Payments and National Accounts is expected to be ready during 2017 as concerns joint source data pools.

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