

Statistical Office of the Republic of Serbia

# **ILLEGAL ECONOMIC ACTIVITIES IN THE REPUBLIC OF SERBIA IN PERIOD 2006 – 2015**

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## 1. Introduction and reference framework

The definition of Illegal Economic Activities (IEAs), estimated and included in Serbian national accounts, are fully consistent with the concepts and definitions of the *System of National Accounts 2008 (2008 SNA)*, the *European System of Accounts 2010 (ESA 2010)*, and the sixth edition of the *Balance of Payments and International Investment Position Manual (BPM6)*.

Exhaustiveness adjustments related to illegal activities are estimated and tabulated according to the OECD Handbook Measuring the Non-Observed Economy (2002) and Eurostat's Guidelines on Tabular Approach to Exhaustiveness (2005) with respect to the recommended methods and available data sources.

According to Eurostat's Tabular Approach to Exhaustiveness, non-exhaustiveness type N2 involves producers engaged in illegal activities. Within this type of non-exhaustiveness three types of illegal activities are recognized in Serbia: (i) prostitution (ii) production, distribution and smuggling of narcotics and (iii) smuggling of tobacco.

On production side, adjustments for illegal activities (prostitution and narcotics) are made to the Households sector (S14). The summary results of these estimates for 2013 are shown in table 1 below.

**Table 1 Estimation of Illegal activities, production side, 2013, EUR mill.**

	<b>Output</b>	<b>IC</b>	<b>GVA</b>
Prostitution	137	27	110
Narcotics	143	18	125

On expenditure side, adjustments for illegal activities are made to households consumption expenditure (HFCE) and exports and imports of goods as shown in table 2 below. Corrections within HFCE pertain to prostitution, narcotics and tobacco. Corrections for exports pertain to illegal exports of tobacco, while import corrections refer to illegal imports of drugs.

**Table 2 Estimation of illegal activities, expenditure side, 2013, EUR mill.**

	<b>HFCE</b>	<b>Exports</b>	<b>Imports</b>
Prostitution	137		
Narcotics	143		9
Tobacco	158	175	

Time series for each of the aforementioned types of illegal activities are available for years 1995-onwards, except for illegal exports of tobacco where available time series relate to period 2002-onwards. These estimates (including back data), prepared within the scope of major revision of national accounts data, have been included in the official national accounts estimates since October 2014, when the Statistical Office of the Republic of Serbia (SORS) has officially started to implement the new methodology of national accounts ESA 2010.

Data sources and methods used for estimating each type of illegal activities (prostitution, narcotics and tobacco) as well as corresponding results are provided in more details in the sections below.

## 2. Prostitution

### a. Data sources and methodology

A supply based approach is applied for estimation of production, consumption and income deriving from prostitution.

According to the Serbian legislations, prostitution itself is not punishable (in case of following certain rules) but other activities connected to them (for example, procuring prostitutes and clients, managing girls, renting rooms for these occasions, collecting defensive money) are considered illegal. The incomes deriving from these activities are not returned (declared) and duties are not paid after them, so they are a part of the hidden economy.

Estimation of prostitution is based on the following data: 1) the number and composition (by different types of prostitution) of persons involved in prostitution activities; 2) the number of working days of persons involved in prostitution activities (by different types of prostitution); 3) number of clients (average number of contacts per prostitute); 4) the average price for different types of prostitution; 5) intermediate consumption (like other activities even prostitution has its own costs connected with the activities such as the purchases of clothes, cosmetics, hygienic needs, taxi services, accommodation and the like); 6) the income coming from prostitution.

The main data sources are: records of the police office of the Republic of Serbia which provided the data on the number of submitted charges (for people dealing with prostitution and intermediation); and data from media.

Based on these data and on international conventions relating to the efficiency of police work in this field as well as on experience of other countries, the total number of those who are engaged in this activity in the Republic of Serbia is estimated.

Relying on the opinion of experts in this field as well as on allegations from the media (newspaper, internet etc.) three types of prostitution have been identified: street, hotel and high. These sources provided the data which were required for the assessment of the overall economic activity of the prostitution activity.

All available data sources are not sufficient to draw conclusions on the number of non-resident prostitutes nor on the consumption of prostitution services by non-resident households and the purchases of prostitution services by resident households from non-residents.

The output for each type of prostitution is calculated as:  $O = N_p * N_{wd} * P$

Where:  $N_p$  - Number of prostitutes;  $N_{wd}$  - Average number of working days;  $P$  - Average daily earnings, calculated according to average price per service or client.

The estimates needed for calculation of prostitution services for 2013 are shown in Table 3 below:

**Table 3 The estimates of prostitution services, 2013**

Types of prostitution	Number of prostitutes	Clients number per day	Number of working days	Prices for prostitution services (EUR)	Output (EUR mill.)
Street	2 460	3.2	250	15	30
Agency	2 679	3.1	230	50	96
High	328	1	75	500	12
<b>Total</b>	<b>5 468</b>				<b>137</b>

Total HFCE pertaining to prostitution services is not separately estimated from demand side, i.e. it is taken from supply side.

## b. Results

Table 4 below shows the estimates of prostitution activity from production side for period 2006 – 2015. During this period the share of GVA from prostitution activity in GDP ranged between 0.32% and 0.36%.

**Table 4 The estimates of prostitution services from production side, 2006-2015, EUR mill.**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Output	106	122	139	126	126	142	134	137	139	141
Intermediate consumption	21	24	28	25	25	28	27	27	28	28
Gross value added (GVA)	85	98	111	101	101	114	107	110	112	112
GVA in GDP %	0.36	0.34	0.34	0.35	0.36	0.36	0.36	0.32	0.33	0.34

## 3. Production, distribution and smuggling of narcotics

### a. Data sources and methodology

A demand based approach is applied for estimation of production, consumption and income deriving from drugs related activities.

According to the Serbian legislations the production, distribution and possession of certain quantity of drugs is illegal, so the production, consumption and income deriving from this activity are a part of the hidden economy.

Estimation of drugs is based on the following data: number of drugs users; price of drugs sold in the street; average daily and annual consumption by types of drugs, including data on average size of doses and purity of drugs.

The main data come from the criminal and border police, health institutions, other countries' experiences, results of international investigations and recommendations from the Annual report of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and The United Nations Office on Drugs and Crime (UNODC).

Based on the available data sources, the estimates which are needed for the calculation of the drugs related activities are presented in Table 5 below.



HFCE / Output										
Heroin	101.6	107.1	110.2	112.0	108.5	110.3	111.9	113.2	106.2	104.2
Cocain	10.6	11.4	12.0	12.9	13.5	13.9	14.5	15.0	18.7	18.3
Marijuana	5.7	6.2	6.7	7.9	8.1	8.2	8.2	8.5	9.4	9.2
Ecstasy	1.0	1.0	1.5	1.8	2.1	2.4	2.7	2.9	2.9	2.9
Amphetamine	0.9	1.1	1.4	1.5	1.8	2.1	3.1	3.2	2.8	2.7
Total	119.7	126.8	131.8	136.1	134.0	136.9	140.4	142.8	140.0	137.4
Intermediate consumption										
Heroin	14.2	14.1	13.5	12.9	12.3	12.1	12.3	12.4	11.7	11.4
Cocain	2.1	2.2	2.3	2.5	2.5	2.6	2.7	2.8	3.5	3.5
Marijuana	1.3	1.2	1.3	1.4	1.5	1.4	1.4	1.5	1.6	1.6
Ecstasy	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Amphetamine	0.2	0.3	0.4	0.4	0.4	0.5	0.8	0.8	0.7	0.7
Total	17.9	17.9	17.6	17.4	16.9	16.9	17.5	17.8	17.8	17.5
Gross value added (GVA)										
Heroin	87.4	93.0	96.8	99.1	96.2	98.2	99.6	100.8	94.6	92.8
Cocain	8.5	9.2	9.7	10.4	11.0	11.3	11.8	12.2	15.2	14.9
Marijuana	4.4	5.0	5.4	6.5	6.7	6.8	6.8	7.0	7.8	7.6
Ecstasy	0.9	0.9	1.4	1.6	1.9	2.2	2.4	2.6	2.6	2.6
Amphetamine	0.6	0.8	1.0	1.1	1.3	1.5	2.3	2.4	2.1	2.1
Total	101.8	108.9	114.2	118.7	117.1	120.0	122.9	125.0	122.2	119.9
Total GVA in GDP %	0.44	0.38	0.35	0.41	0.42	0.38	0.42	0.36	0.37	0.36

Table 7 shows the estimates of imports of narcotics in period 2006-2015, by type of narcotics. During this period the share of total imports of narcotics in GDP was stable and amounted to about 0.03%.

**Table 7 The estimates of imports of narcotics in period 2006-2015, EUR mill.**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Heroin	5.7	6.0	6.2	6.3	6.1	6.2	6.3	6.4	6.0	5.9
Cocain	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.9	1.9
Marijuana	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Ecstasy	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Amphetamine	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1
Total	7.2	7.6	7.9	8.2	8.1	8.3	8.5	8.7	8.7	8.5
Total Import in GDP %	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03

## 4. Smuggling of tobacco (illegal exports of tobacco)

### a. Data sources and methodology

Using various data sources for the estimation of tobacco production and consumption it was found that there is no ground for making exhaustiveness adjustments on the production side of tobacco,

therefore only exhaustiveness adjustments of tobacco consumption on the expenditure side are made by applying the commodity flow method.

A commodity flow method is applied for the estimation of smuggling of tobacco, using data on production, exports and imports (see Table 8 below). Data on excises obtained from Tax Administrations are also used. For more comprehensive demand side data on tobacco (including separate estimates for HFCE on tobacco), analyses of additional data sources have been carried out, involving data from the Ministry of Interior about seized quantities of tobacco, Household Budget survey (HBS), Retail Trade Survey (RTS) and data from various domestic and international tobacco surveys (including international comparison based on Purchasing Power Parity - PPP). HFCE on tobacco accounted for 3.95% of total HFCE in 2013, while its percentage share in GDP for the same year was 2.94. The value of consumption of tobacco according to two main data sources for HFCE (HBS and RTS) accounted for 45.2% and 59.4%, respectively, of the total value of HFCE on tobacco. According to the results of Eurostat PPP survey (EU28), purchasing power standard (PPS) for Serbia in 2013 amounted to 119.65.

Quantitative data obtained by commodity flow method are multiplied by the average prices of cigarettes and the resulting rough value of production was very similar in comparison with the Treasury data on excise duties on cigarettes.

**Table 8 Estimated value of total supply of tobacco on the Serbian market, 2012-2013**

	2012	2013
Production, tons (1)	18 473	16 405
Import, tons (2)	4 412	5 097
Export, tons (3)	3 096	6 262
Total available quantity on the market, tons (4) = (1) + (2) – (3)	19 789	15 240
Total available quantity on the market, mill. packs (5)	989	762
Prices from HBS, EUR (6)	1.10	1.45
Total legal supply of tobacco, EUR mill. (7) = (5) * (6)	1082	1104
Net direct exports by households (travel expenditure), EUR mill. (8)	-16	78
Total supply of tobacco, EUR mill. (9) = (7) + (8)	1065	1182

## b. Results

Table 9 below shows the total available quantities of tobacco on the domestic market (total legal supply), estimated by using commodity flow method, for period 2006 – 2015.

**Table 9 The estimated legal supply of tobacco by commodity flow method, 2006-2015, tons**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Production	19105	21218	20130	19842	21051	20182	18473	16405	17388	26366
Legal imports	6242	2351	3157	4438	5153	4637	4412	5097	4813	3810

Legal exports	316	924	1468	1995	2060	2308	3096	6262	10183	20064
Total legal supply	25031	22645	21819	22285	24144	22511	19789	15240	12018	11362

Estimation of the illegal export of tobacco is done on the basis of the quantity determined through a commodity flow method and the prices from HBS, that correspond to retail prices on the market of the Republic of Serbia. Estimation of non-residents consumption is based on the assessment of border and tourist traffic and the use of prices from HBS (corresponding to retail prices).

Table 10 below shows the values of illegal exports of tobacco, estimated by using commodity flow method, for period 2006-2015. The estimated percentage share of illegal exports of tobacco in GDP in period 2006-2013 shows relatively smooth trend (between 0.51% and 0.98%) and close-to-zero (0.02%) and zero estimate for 2014 and 2015, respectively.

**Table 10 The estimated values of illegal exports of tobacco by commodity flow method, 2006-2015, EUR mill.**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total legal supply (1)	809	901	965	972	1070	1169	1082	1104	964	880
Net direct exports by households (2)	-103	-72	-49	-84	-102	-124	-16	78	102	91
Total supply (3) = (1) + (2)	706	829	915	888	968	1045	1065	1182	1066	971
HFCE (4)	477	596	656	693	707	831	852	1007	1058	971
Illegal export (5) = (4) – (3)	229	233	259	195	261	214	214	175	8	0
Illegal export in GDP, %	0.98	0.82	0.79	0.67	0.93	0.68	0.72	0.51	0.02	0.00