

# Statistical Evaluation of the Sizes of Smuggling in Ukraine

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## Abstract

The article concerns estimation of the smuggling activity's sizes that have been held on the basis of State custom service's data. Also the State statistic service's approach to the assessment of the sizes of smuggling has been considered, its main disadvantages have been defined and priority ways of modernization of quantitative assessment of the sizes of smuggling have been proposed.

**Keywords:** currency smuggling, shadow economy, smuggling of foodstuffs, smuggling of goods, smuggling of manufactured goods, State Custom Service

## Introduction

In the modern conditions of Ukrainian development one of the most important tasks of the government regulation is maintaining the economic security of the state. Expansion of globalization processes in economy of Ukraine led to increasing threats to the economic security of the state from the sector of international relations. One of the threats that have significant influence on the economy of Ukraine is smuggling. Large-scale expansion of smuggling activity has a negative impact on all spheres of social life by increasing of shadow sector and spreading criminalization of economy. Thereby development of the organizational and methodical support of the impartial quantitative evaluation of the sizes of smuggling becomes a substantial foundation of the formation of the effective government strategy directed to overcome of this phenomenon.

The concept of smuggling has its roots in the distant past. The word "smuggling" came from the Teutonic or Norse language and means "to slip, get through the hole". Official history of smuggling starts in 1275 year, when English King Edward I imposed high custom duties on export of wool for supporting national producers. It should be mentioned that at that time smuggling had nothing in common with contemporary criminal drug and human trafficking and was relatively honest business. Public opinion condoned smugglers, romanticizing their image and giving it appeal. Even the 18th-century economist Adam Smith supported free trade and justified smugglers by laws of natural justice. But since then smuggling developed from semi-legal type of activity to the global social and economic threat.

Among the outstanding scientists who researched the history, nature, substance and consequences of smuggling A. Boyko, L. Rodyna (Boyko, A., Rodyna, L., 2002), N. Gylmutdinova (Gylmutdinova, 1998), V.

Larychev (Larychev, 2002), F. Schneider (Schneider, 2011), I. Mazur (Mazur, 2006), Z. Varnaliy (Varnaliy, 2006), U. Prylypko (Prylypko, 2011) should be mentioned. According to the results of their researches smuggling can be defined as clandestine transferring of the goods and valuables (smuggling items) across the state border with their concealment from custom control.

Smuggling items are very different and plentiful, so they are divided into several types according to the world practice:

- economic items: goods, currency, securities etc.;
- military items: armament, resources etc.;
- forbidden items: drugs, precursors, alcohol, etc.;
- Ecological items: rare animals and plants, toxic and radioactive waste etc. (Gylmutdinova, 1998).

In the world practice the main information support for statistical evaluation and analysis of smuggling items is data set of police departments, custom services, Ministries of Interior and international organizations. The most widespread methodical instruments are analysis of time series for definition of priority tendencies of smuggling sizes, structural analysis for detection of structural components of smuggling and their changes during the definite period, coefficient analysis for identifying stable interrelations between smuggling elements.

The basic source of the data on the sizes of smuggling in Ukraine is reporting data of State Custom Service of Ukraine (SCSU), which are presented in Form K-1. The Form includes four sections:

- data on criminal cases that concern smuggling activity;
- data on subjects of these criminal cases;
- information about methods of smuggling;
- information about the smuggled items in crim-

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inal cases.

The main purpose of our research is statistical evaluation of the sizes of smuggling in value terms, so our analysis of smuggling is based on the last section of the Form that includes information about quantity and value of smuggled items by the following categories: goods (currency, foodstuffs and manufactured goods), firearm, cold steel, ammunition, explosives, toxic, potent and radioactive substances, historical and cultural values, strategic commodities, drugs, psychotropic substances, precursors.

Information about mentioned above categories of smuggling (except category "Goods") isn't presented in full in custom reports. Such situation makes statistical analysis of the sizes of smuggling by these categories impossible. Thereby our attention is paid to the study of goods smuggling that includes:

- smuggling of foodstuffs;
- smuggling of manufactured goods;
- currencysmuggling.

### Results of Research

Thereby, to determine the analytical possibilities of data presented in SCSU's reports we should analyze the sizes of smuggling in Ukraine for the period of 2002-2011 years on its base. Firstly, we can assess the overall sizes of goods smuggling in Ukraine for the whole period of 2002-2011 years, which amounted to 8986.19 mil gryvnas. The largest part of this amount consists of the sizes of manufactured goods smuggling (8113.51 mil gryvnas or 90.3% of the whole size) (Figure 1). The sizes of foodstuffs smuggling are

amounted to 840.67 mil gryvnas (or 9.3 of the whole size) and the sizes of currency smuggling are amount- ed to 32.01 mil gryvnas (or 0.4% of the whole size). SCSU's reporting data characterize only valuation of smuggled items in criminal cases, so mentioned above sizes of goods smuggling can be considered just as bottom limit of quantitative assessment of the sizes of goods smuggling in Ukraine for the period of 2002-2011 years.

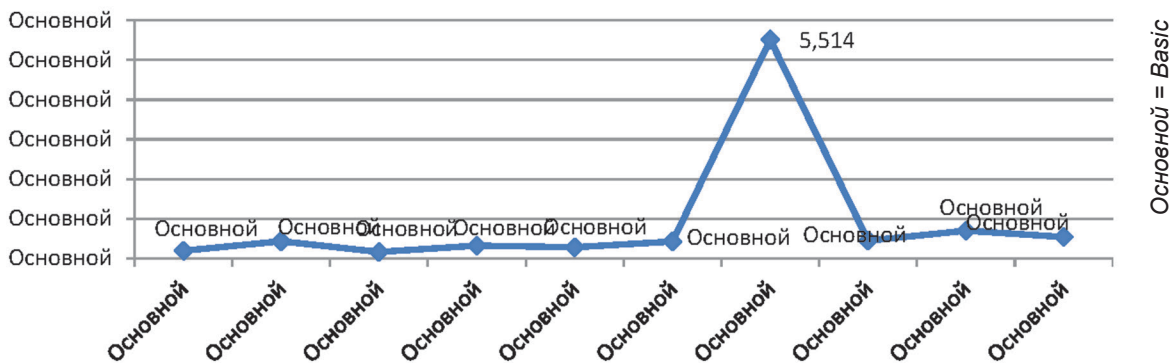
Also we can assess changes in the sizes of smug- gling of goods in Ukraine for the period of 2002-2011 years on the base of SCSU's data. On this purpose we should consider baseline and chain growth of the sizes of goods smuggling (Table 1).

According to chain growth variable dynamics of the sizes of goods smuggling is observed in Ukraine for the period of 2002-2011 years. Decrease in the sizes of goods smuggling occurred in 2004 in comparison with 2003 on 63%, in 2006 in comparison with 2005 on 13%, in 2009 in comparison with 2008 on 92% and in 2011 in comparison with 2010 on 23%. But this dynamics of reduction was compensated with excess by increasing in the sizes of goods smuggling in 2003 in comparison with 2002 on 128%, in 2005 in comparison with 2004 on 101%, in 2007 in comparison with 2006 on 52%, in 2008 in comparison with 2007 on 1207% (that was connected with detention of the large batches of smuggling goods), in 2010 in comparison with 2009 on 56%. Such dynamics allows making a conclusion about overall increase of the sizes of smuggling of goods in criminal cases for the period of 2002-2011 years. This fact also can be confirmed by baseline growth of the sizes of goods

**Table 1.** Baseline and chain growth of the sizes of smuggling of goods in Ukraine for the period of 2002-2011 years, %

Growth	2003	2004	2005	2006	2007	2008	2009	2010	2011
<b>Baseline growth</b>	128	-15	70	48	125	2836	137	271	186
<b>Chain growth</b>	128	-63	101	-13	52	1207	-92	56	-23

Source: Created by the author on the basis of (DMSU, 2012, p. 5) (DMSU, 2003, p. 5) (DMSU, 2004, p. 5) (DMSU, 2005, p. 5) (DMSU, 2006, p. 5) (DMSU, 2007, p. 5) (DMSU, 2008, p. 5) (DMSU, 2009, p. 5) (DMSU, 2010, p. 5) (DMSU, 2011, p. 5)



**Figure 1.** Smuggled items in criminal cases in Ukraine for the period of 2002-2011 years, mil gryvnas

Source: Created by the author on the basis of (DMSU, 2012, p. 5) (DMSU, 2003, p. 5) (DMSU, 2004, p. 5) (DMSU, 2005, p. 5) (DMSU, 2006, p. 5) (DMSU, 2007, p. 5) (DMSU, 2008, p. 5) (DMSU, 2009, p. 5) (DMSU, 2010, p. 5) (DMSU, 2011, p. 5)

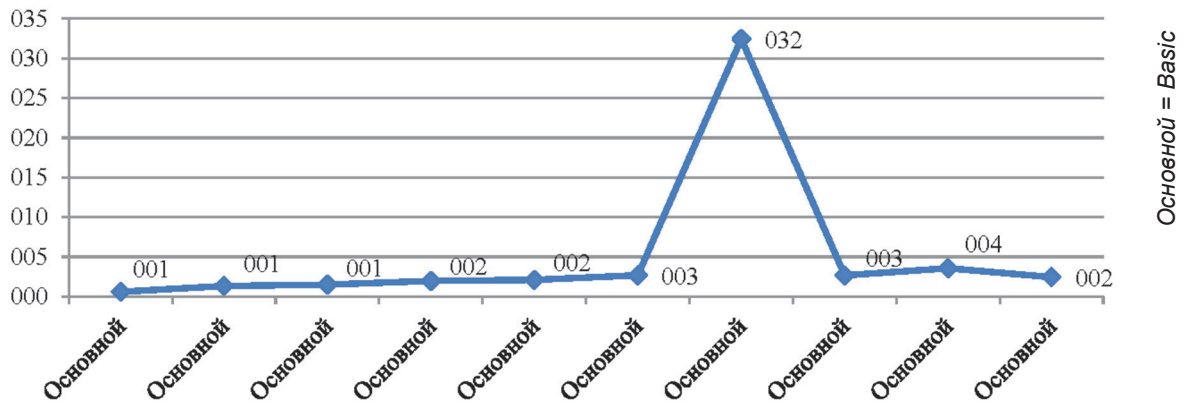
smuggling because negative value of this indicator was observed only in 2004.

So the sizes of smuggling of goods in criminal cases increased in 2011 in comparison with 2002 on 186 % (from 188 mil gryvnas to 538 mil gryvnas). But application of this dynamics to evaluation of tendencies of overall goods smuggling expansion in Ukraine is not appropriate because increase (decrease) of the sizes of goods smuggling in criminal cases can be caused by increasing (decreasing) of the overall sizes of goods smuggling in Ukraine as well as by strengthening (weakening) of the SCSU's custom control. Therefore, the conclusion about increasing of the overall sizes of goods smuggling in Ukraine almost on 200% for the period of 2002-2011 years will be incorrect.

SCSU's reporting data also allow analyzing of the smuggling scale. On this purpose we should introduce indicator of smuggling scale that characterize the ratio of the sizes of goods smuggling in criminal cases to the number of criminal cases. According to this indicator, steady increase of smuggling scale is observed for the period of 2002-2011 years in Ukraine (figure 2). Significant decrease of this indicator was

observed only in 2009 that was connected with sharp increase of this indicator in 2008 that was caused by detention of several large batches of goods smuggling by SCSU's officers. So goods smuggling scale increased in 2011 in comparison with 2002 on 319 % (from 0.58 mil gryvnas to 2.43 mil gryvnas). Such situation is evidence of enlarging of smuggling batches that cross the state border of Ukraine.

Also we can assess structural changes of the sizes of goods smuggling for the period of 2002-2011 years on the basis of SCSU's data (Table2). In 2002 the largest share in the overall sizes of goods smuggling was smuggling of manufactured goods – 61.17% and the share of smuggling of foodstuffs was 38.83%. Fluctuations in structure of goods smuggling was observed during 2002-2011 years, but clear tendency of increase of the manufactured goods smuggling share in the overall goods smuggling sizes can be traced. So the share of manufactured goods smuggling increased from 61.17% to 89% and the share of smuggling of foodstuffs decreased from 38.83% to 10.82% in 2011 in comparison with 2002. Such tendency is connected with increase of population's demand on manufactured goods that is caused by



**Figure 2.** Indicator of goods smuggling scale in Ukraine for the period of 2002-2011 years, mil gryvnas

Source: Created by the author on the basis of (DMSU, 2012, p. 5) (DMSU, 2003, p. 5) (DMSU, 2004, p. 5) (DMSU, 2005, p. 5) (DMSU, 2006, p. 5) (DMSU, 2007, p. 5) (DMSU, 2008, p. 5) (DMSU, 2009, p. 5) (DMSU, 2010, p. 5) (DMSU, 2011, p. 5)

**Table 2.** Structure of goods smuggling in Ukraine for the period of 2002-2011 years, %

Year	Manufactured goods smuggling	Smuggling of foodstuffs	Currency smuggling	Total
2002	61,17	38,83	0,00	100
2003	80,91	19,09	0,00	100
2004	83,02	15,82	1,15	100
2005	69,83	29,34	0,83	100
2006	83,44	14,86	1,69	100
2007	75,80	23,42	0,78	100
2008	95,75	3,95	0,30	100
2009	89,36	10,13	0,51	100
2010	84,75	15,25	0,00	100
2011	89,00	10,82	0,18	100

Source: Created by author on the basis of (DMSU, 2012, p. 5) (DMSU, 2003, p. 5) (DMSU, 2004, p. 5) (DMSU, 2005, p. 5) (DMSU, 2006, p. 5) (DMSU, 2007, p. 5) (DMSU, 2008, p. 5) (DMSU, 2009, p. 5) (DMSU, 2010, p. 5) (DMSU, 2011, p. 5)

development of consumer lending and by growing of the population's income level in Ukraine. The share of currency smuggling in overall size of goods smuggling was fluctuating in the limits of 0 – 1.67% during 2002-2011 years and its analysis is not representational for the purpose of our research.

It should be mentioned that State Statistical Service of Ukraine (SSSU) recommends assessing of the smuggling sizes on the basis of SCSU's reporting data on smuggled items in criminal cases taking into account coefficient of withdrawal that was defined on the level of 10% by experts. (UN, 2008) This coefficient characterizes the share of detained smuggled goods by Ukrainian custom officers from the overall size of smuggled goods in Ukraine. But, despite on simplicity of this method, the practical application of it is very doubtful. Firstly, it should be considered that the coefficient of withdrawal is based on subjective unreliable evaluations. Also, this coefficient should be assessed on year-by-year basis and not for the period. Inefficiency of SSSU's method can be proved by the example of changes of the sizes of goods smuggling in criminal cases in Ukraine in 2008 in comparison with 2007. Increase of the sizes of goods smuggling in criminal cases on 1206% (from 422 mil hryvnas to 5514 mil hryvnas) was observed in 2008 in comparison with 2007. As was mentioned above this increase was caused by detention of large batches of smuggled goods by SCSU's officers. The results received by application SSSU's method can be interpreted in two directions:

- the sizes of goods smuggling increased on 1206%, that is very doubtful;
- SCSU's officers detained almost all smuggled goods that were crossed state border of Ukraine that is generally absurd.

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