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The share of drug trafficking in Kazakhstan's GDP: methods for evaluation

Abstract

Introduction. In Kazakhstan, no systematic work is carried out to collect data and evaluate illicit activities in the form in which it could be compared with the main macroeconomic indicators.

The purpose of the article, therefore, is to examine methods for evaluation of the share of drug trafficking in Kazakhstan's GDP and GRP.

The methodology used in the research is based on the principles of the System of National Accounts.

Results. Based on international experience and practice of applying the evaluation of illicit activities according to the recommendations of Eurostat, the authors carry out an estimation of the share of illicit traffic in narcotic drugs in the economy of Kazakhstan in 2011-2016 as a whole and by regions. The most common drugs in Kazakhstan are heroin, cannabinoids (marijuana, hashish) and opiates. Thus, the analysis and evaluation were carried out for these types of drugs. Based on the proposed formulas, the calculations were made to evaluate the use of each drug in Kazakhstan, the volume of imports and domestic production, trade margins and gross value added (GVA) by activities related to its spread.

Conclusion. The calculations make it possible to estimate the real volumes of drug trafficking in Kazakhstan's GRP and GDP. The evaluation of the share of illicit drug trafficking in Kazakhstan's GDP has shown a declining trend in recent years: the share of GVA regarding GDP in 2016 amounted to KZT 199,306.5 million (USD 596.726 million), which was 0.58%. However, heroin consumption is the largest one, due to its prevalence among consumers. Despite the lack of production of heroin on the territory of Kazakhstan, its transit and distribution remains stable.

Keywords: GDP; GVA; GRP; Narcotics; Illicit Drug Trafficking; Statistics; Kazakhstan

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Методика оцінки обсягу незаконного обігу наркотиків у структурі ВВП Казахстану

Анотація

У статті наведено аналіз незаконного обігу наркотиків у Казахстані для того, щоб визначити частку такого обігу в структурі ВВП країни. Оцінку обсягів незаконного обігу наркотичних засобів в економіці Казахстану було проведено з урахуванням зарубіжного досвіду та рекомендацій Євростату. Використана методика ґрунтується на принципах системи національних рахунків. Проведені розрахунки за 2011–2016 рр. дали можливість визначити реальні обсяги незаконного обігу наркотиків у структурі ВВП та ВРП Казахстану.

Ключові слова: ВВП; валова додана вартість; ВРП; наркотики; наркаторгівля; Казахстан; статистика.

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Методика оценки объемов незаконного оборота наркотиков в структуре ВВП Казахстана

Аннотация. В статье проведен анализ незаконного оборота наркотиков в Казахстане с целью определения его доли в ВВП страны. Оценка объемов незаконного оборота наркотических средств в экономике Казахстана проведена с учётом зарубежного опыта и рекомендаций Евростата. Используемая методика основана на принципах системы национальных счетов. Проведённые расчеты за 2011–2016 гг. дали возможность определить реальные объемы незаконного оборота наркотиков в структуре ВВП и ВРП Казахстана.

Ключевые слова: ВВП; валовая добавленная стоимость; ВРП; наркотики; наркоторговля; Казахстан; статистика.

1. Introduction and Brief Literature Review

Currently, drug trafficking, as a global illicit trade, is not formally incorporated into GDP of any country. Yet, scientists, scholars and researchers conduct studies on issues related to the shadow economy and drug trafficking. Here, we can mention the names of A. Bretteville-Jensen and E. Björn (2004) [1], A. Robson (2012) [2], F. Schneider (2008) [3] and B. Brown (2006) [4]. Also, the World Drug Report is published annually by the United Nations Office on Drugs and Crime [5]. A number of countries and national researchers have conducted calculations to evaluate the relevant activities using different approaches, namely: the Netherlands (2013), Denmark (2011-2013), Italy (1993; 1997), the UK (1998; 2006) and Sweden (2008) [6-10]. Countries such as Albania, Brazil, and Moldova are oriented toward labour costs in the calculation of illicit activities (UN, 2008) [11]. In Kazakhstan, an experimental evaluation of the share of profits obtained from drug trafficking in Kazakhstan's GDP was carried out by T. Azatbek and A. Ramazanov in 2015 [12].

At the present stage of development, the main methodological tool of EU countries to measure illicit activities is the international statistical standard known as the System of National Accounts (SNA) in the 2008 version [13], as well as the international dimension guidelines for measuring the non-observed economy developed by OECD (2002) [14], and Eurostat's Tabular Approach is a practical tool for implementing the principles of the abovementioned guidelines. Eurostat's Tabular Approach was therefore taken by us as the basis for the evaluation.

2. Purpose

The purpose of the study is to develop a methodology for the evaluation of the share of profits obtained from drug trafficking in GDP of Kazakhstan by region.

3. Results

The objective evidence pointing to the existence of the non-observed economy, a constituent element of which is illicit activity, including drug trafficking, necessitates the development of methodologies and guidelines for evaluating the share of profits obtained from drug trafficking in the national economy.

Drug trafficking is a big challenge in terms of statistical measurement due to its closed nature. Persons involved in illegal operations have more than obvious reasons to hide their involvement. Hence, it follows that the more dangerous for society the activity is and the more serious punishment is provided for it by the national criminal law, the less valid the traditional sources of information relevant to the measurement are.

Therefore, when calculating drug transactions, in order to obtain the optimal results of such evaluation, it is advisable to use the following basic identities of the System of National Accounts for the quantity and cost indicators for each type of drug (1):

$$\text{Output} + \text{Import} = \text{Consumption} + \text{Export} + \text{Confiscation}. \quad (1)$$

Consideration of intermediate consumption in the production and trade of drugs depends on how it is accounted for in the accounts at the moment. There are two possibilities:

1. Intermediate consumption has already been taken into account as such. In this case, the added value will be the trade mark-up and the issue of domestic producers.

2. Intermediate consumption is mistakenly accounted for as final consumption. In this case, the added value will be trading margin issuance of domestic manufacturers minus intermediate consumption, removed from the final consumption.

The income created as a result of illicit drug operations is used for final consumption, capital investment in non-financial and financial assets (if necessary, after money laundering). It can be assumed that costs under legal items will be implicitly included in the indicators of the System of National Accounts.

In Kazakhstan, no systematic work is carried out to collect data and evaluate illicit activities in the form in which it could be compared with the main macroeconomic indicators. Statistics are often of forensic nature. Moreover, seizure statistics for types of offenses are often in physical terms, which does not carry economic content.

There are more systematic data on the drug business in Kazakhstan, which is the result of greater investment in this area, constant attention from the state, growing international concern regarding the problem and involvement of a large number of departments and government agencies in the fight against drug trafficking. In Kazakhstan, information on drug trafficking is aggregated by the Committee on Legal Statistics and Special Accounts of the Committee for Legal Statistics and Special Accounts of the State Office of Public Prosecutor of the Republic of Kazakhstan [15]. In addition, statistics on drugs, in the context of committed crimes, is maintained by the Department for Combating Drug Trafficking and Drug Control of the Ministry of Internal Affairs of the Republic of Kazakhstan [16], and information on drug addicts is processed by the Republican Center on Prevention and Control of AIDS [17].

The most common drugs in Kazakhstan are heroin, cannabinoids (marijuana, hashish) and opiates. Thus, the analysis and evaluation were carried out in the context of these types of drugs, because law enforcement and medical organizations have data available on them.

To begin with, it is necessary to evaluate the indicators in physical terms. Then, it is essential to convert them into cost indicators by using price data. The calculation of drug use is made on the basis of formula (2):

$$C = N * D, \quad (2)$$

where C - annual consumption of drugs addicts (grams);
 N - the number of drug addicts (persons);
 D - the average amount of drugs consumed by addicts per year (grams).

As numbers, we used data generated by the Republican Centre on Prevention and Control of AIDS (RC AIDS) under the rapid assessment of the situation. RC AIDS estimates the number of injecting drug users (IDUs) in accordance with its own methodology. Thus, according to the RC AIDS, has estimated the number of heroin users, since almost all IDUs use heroin. The number of injecting drug users ranges from 129 thousand people in 2011 to 112 thousand in 2013 [18]. The average dose and frequency were taken according to the National report on the Drug Situation in the Republic of Kazakhstan (2012) [19]. According to the report, it is assumed that one addict uses 2 gr. of heroin (normal receipt) 183 days in a year. More frequent consumption can significantly reduce a person's life. In addition, it depends on the solvency of the addict. Thus, the consumption of all drug addicts per year ranges from 47.3 tons in 2008 to 41.3 tons in 2016 [20].

Due to the nature and availability of raw materials, heroin is not produced in Kazakhstan. It is imported from Afghanistan and other producers in the form of powder with high concentration. Further, in Kazakhstan, wholesale dealers dilute and adjust it to the consumer in the form of powder with low concentration. This dilution process is considered to production. For example, 80-percent heroin can be realised for bulk sales, while a single dose contains only 20% of the drug. Accordingly, it is possible to obtain 4 grams of product, which is purchased by the end user, from 1 gram of wholesale heroin. This relation allows us to estimate the volume of imports into the country (3).

$$I_h = C_h * Pr_h / Pw_h, \tag{3}$$

where I_h - import (grams);
 Pr_h - street purity of heroin (%);
 Pw_h - wholesale purity of heroin (%);
 C_h - heroin consumption (grams).

Further, the volume of domestic production in the country is determined by the difference (4):

$$DP_h = C_h - I_h, \tag{4}$$

where DP_h - domestic production of heroin (grams);
 C_h - heroin consumption (grams);
 I_h - import of heroin (grams).

After determining the physical volume (in grams) of the basic parameters, it is necessary to evaluate them in terms of value. Imports and domestic production of drugs are valued at wholesale prices, whereas consumption is valued at retail prices.

The main resulting indicator, which can be compared to GDP, is GVA. It is defined as follows (5):

$$GVA_h = DP_h + MU_h - IC_h, \tag{5}$$

where GVA_h - gross valued added of heroin (KZT million);

DP_h - domestic production of heroin (KZT million);
 MU_h - trade margin of heroin (KZT million);
 IC_h - intermediate consumption of heroin (KZT million).

Intermediate consumption in the drug trade is not significant. Additional material used for diluting drugs is cheap enough. Therefore, the share of intermediate consumption is estimated at 10% of the trade margin.

The trade margin involved in the calculation of GVA is defined as follows (6):

$$MU_h = C_h * (Pr_h - Pw_h), \tag{6}$$

where MU_h - trade margin of heroin (KZT million);
 C_h - consumption of heroin (grams);
 Pr_h - retail price of heroin (tenge);
 Pw_h - wholesale price of heroin (tenge).

Thus, on the basis of the proposed formulas, the calculations were made to evaluate the use of heroin in Kazakhstan, the volume of imports and domestic production, trade margins and gross value added by activities related to the spread of heroin.

Being the most important macroeconomic indicator, gross value added reveals the share of the relevant type of activity in the country's GDP.

Thus, according to Figure 1, there is «torn» dynamics through which the reduction of the share of GVA of heroin in gross rating points (GRP) from 2011 to 2016 is discerned.

After analysing the 2016 data in the context of the regions, we have the following situation: the maximum share of GVA from heroin trafficking is observed in Atyrau, Mangistau, South Kazakhstan and Zhambyl regions, which is associated with the highest number of heroin addicts in these regions and with the price of heroin. The lowest proportion is observed in Kyzylorda region - 1.84% (Figure 2).

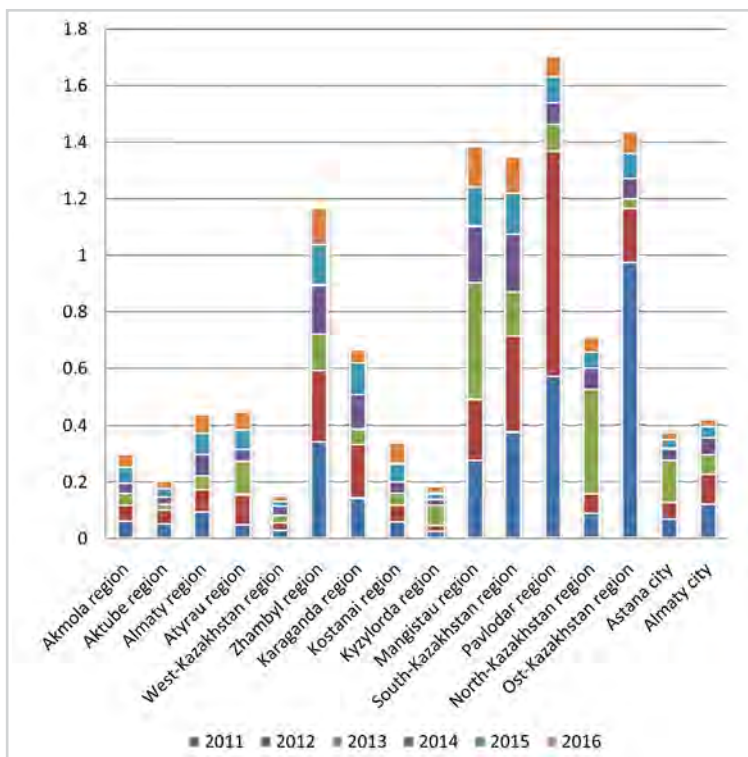


Fig. 1: Share of GVA in GRP from heroin trafficking by region, 2011-2016
 Source: Calculated and compiled by the authors based on data [5; 18-21]

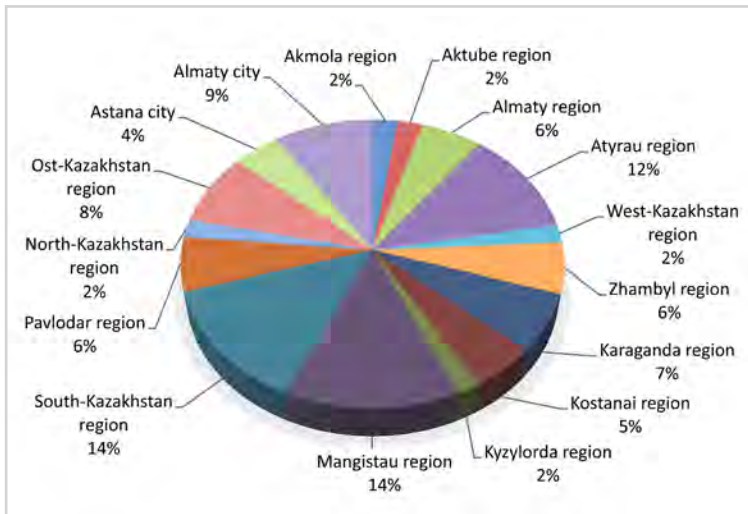


Fig. 2: Structure of GVA heroin trafficking by regions in 2016 (%)
 Source: Calculated and compiled by the authors based on data [5; 18-21]

Drugs of *cannabis group* are of many varieties, depending on the processing of hemp. Nevertheless, in this work we consider only *marijuana and hashish*, because these drugs are the most consumed in this group.

According to experts, as well as due to the fact of existence of the largest production of cannabis in Kazakhstan (Chui valley), the import of marijuana and hashish is not reported. This means that all relevant products are produced and consumed within the country.

Domestic production of marijuana and hashish is defined by the formula (7).

$$DP_{mh} = N_{mh} * D_{mh} * Pw_{mh}, \tag{7}$$

where DP_{mh} - domestic production of marijuana and hashish (tenge, million);

N_{mh} - number of drug addicts (persons);

D_{mh} - average amount of drugs consumed by addicts in one year (grams);

Pw_{mh} - wholesale price for marijuana and hashish (tenge).

The estimated number of drug addicts by cannabinoids is determined on the basis of the latest national survey in 2011 conducted by National Scientific and Practical Center on Medical and Social Problems of Drug Addiction [22] and operational data from the Department for Combating Drug Trafficking and Drug Control of the Ministry of Internal Affairs of the Republic of Kazakhstan [21]. Therefore, according to the data, 1.7% of the population at the age 7-55 uses cannabinoids.

Using data on the population in this age group, we estimated the number of drug addicts, which exceeds the number of those who had been registered by health authorities by almost 14 times. According to the estimates, the consumption of cannabinoids ranges from 6.4 tons to 7.2 tons in different years. Domestic production is estimated from KZT 424.1 million to KZT 1 376.9 million in different years.

Gross value added is estimated by the formula (8).

$$GVA_{mh} = DP_{mh} + MU_{mh} - IC_{mh}, \tag{8}$$

where GVA_{mh} - gross value added of marijuana and hashish (KZT million);

DP_{mh} - domestic production of marijuana and hashish (KZT million);

MU_{mh} - trade margin of marijuana and hashish (KZT million);

IC_{mh} - intermediate consumption of marijuana and hashish (KZT million).

The trade margin involves in the calculation of GVA and is defined as follows (9).

$$MU_{mh} = C_{mh} * (Pr_{mh} - Pw_{mh}), \tag{9}$$

where MU_{mh} - trade margin of marijuana and hashish (KZT million);

C_{mh} - consumption of marijuana and hashish (grams);

Pr_{mh} - retail price of marijuana and hashish (tenge);

Pw_{mh} - wholesale price of marijuana and hashish (tenge).

According to the calculations, we see the following picture (Figure 3): GVA dynamics of cannabinoids trafficking by regions in 2008-2013 has multidirectional nature.

In Akmola, Almaty, Zhambyl regions, a decrease in GVA is strongly expressed; in Karaganda, Mangistau and Almaty regions there is an increase in the GVA data. In other regions, we observe «torn» dynamics, thus it is difficult to discern trends and draw definite conclusions.

Data on Pavlodar region are questionable due to a sharp increase in GVA in some years, which may be due to a deficit of the goods, and thus inflated retail prices.

However, from a macroeconomic point of view, the share of GVA to GRP is a more interesting indicator, because the nominal value of GVA as such does not mean anything. As shown in Figure 4, it is noticeable that the largest share of GVA is observed in Pavlodar, South Kazakhstan and Zhambyl regions. Moreover, GVA growth is much faster than the growth of gross regional product of the above regions.

Further, let us consider GVA related to cannabinoids trafficking in the regional context. According to Figure 5, the largest share of cannabinoids trafficking was in Pavlodar region

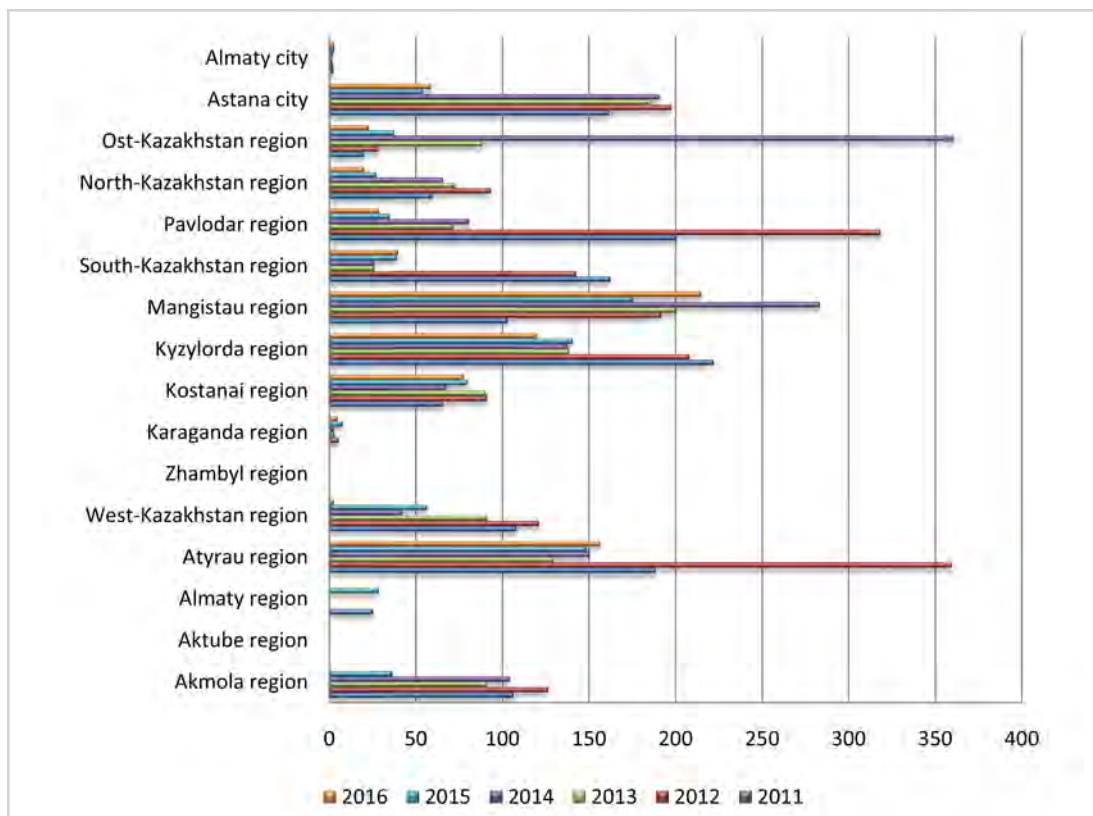


Fig. 3: GVA dynamics of cannabinoids turnover by regions in 2011-2016 (KZT million)
Source: Calculated and compiled by the authors based on data [5; 18-21]

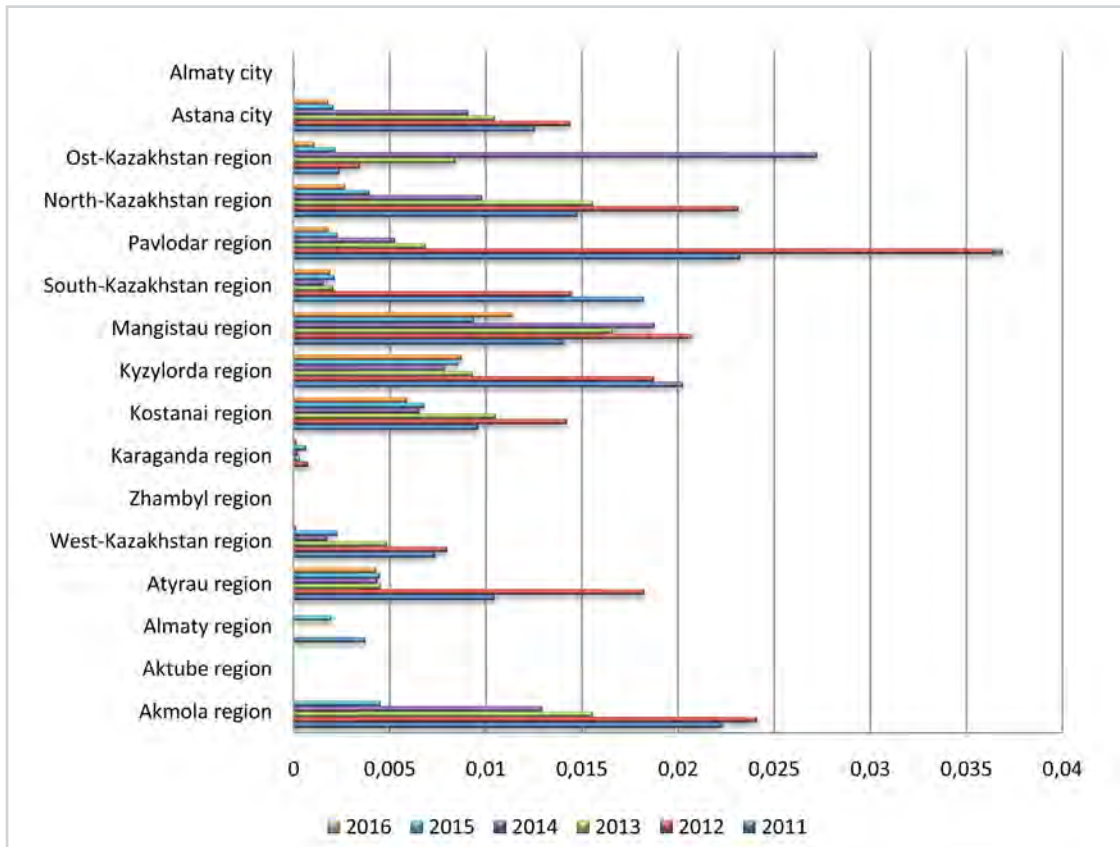


Fig. 4: Dynamics of GVA to GRP of cannabinoids by regions in 2008-2013 (%)
Source: Calculated and compiled by the authors based on data [5; 18-21]

of Kazakhstan, which in 2008-2013 amounted to more than a quarter in the structure of the entire GVA, whereas the lowest share was in West Kazakhstan region.

Calculation of *opium* consumption indicators.

The situation with opium, as one of various types of drugs, is reversed - it lacks the domestic production. This drug is fully imported and the volume of its consumption is calculated by the formula (10):

$$I_o = N_o * D_o * Pw_o, \tag{10}$$

where I_o - import of opium (KZT million);
 N_o - number of drug addicts (persons);
 D_o - the average amount of drugs consumed by addicts per year (grams);
 Pw_o - wholesale price of opium (tenge).

The approach to the definition of GVA and trade margin is similar to the approaches used to define other forms of drug abuse, namely (11) and (12).

$$GVA_o = DP_o + MU_o - IC_o, \tag{11}$$

where GVA_o - gross value added of opium (KZT million);
 DP_o - domestic production of opium (KZT million);
 MU_o - trade margin of opium (KZT million);
 IC_o - intermediate consumption of opium (KZT million).

$$MU_o = C_o * (Pr_o - Pw_o), \tag{12}$$

where MU_o - trade margin of opium (KZT million);
 C_o - consumption of opium (grams);
 Pr_o - retail price of opium (tenge);
 Pw_o - wholesale price of opium (tenge).

According to the calculations, opium consumption does not exceed 400 kg in different years, due to the high price of opium and non-proliferation measures in Kazakhstan. Here, GVA is estimated to be from KZT 214.1 million to KZT 826 million in different years. Consequently, its GVA in GRP is very small in connection with such insignificant amount and proportion.

The evaluation of heroin, opium and cannabinoids trafficking by regions is shown in Figure 6.

As shown in Figure 6, there is a steady decline in the share of GVA regarding GDP. In 2016, it amounted to KZT 199,306.5 million (USD 596.726 million), which is 0.58%. The largest share was observed in Zhambyl, Mangistau, South Kazakhstan regions. The persistently low share in Figure 6 shows the dynamics of GVA drug trafficking, which reflects a decrease.

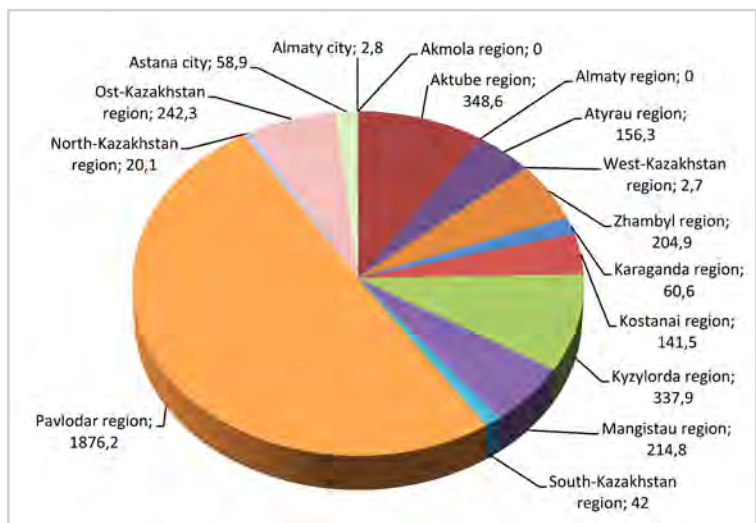


Fig. 5: GVA from cannabinoids turnover by regions in 2016, KZT million
Source: Calculated and compiled by the authors based on data [5; 18-21]

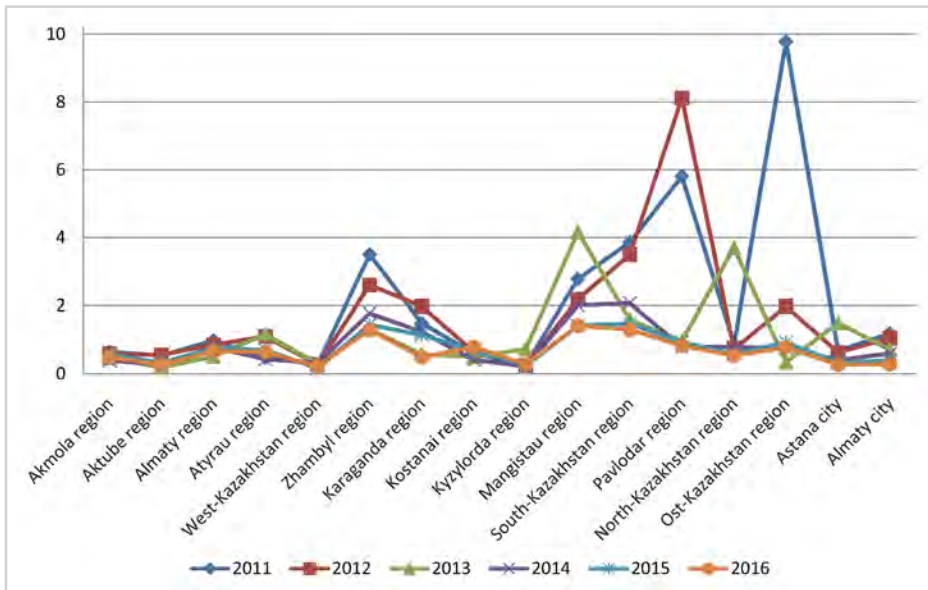


Fig. 6: Changes in the share of GVA of heroin, opium and cannabinoids in GRP of the regions of Kazakhstan for 2011-2016 (%)

Source: Calculated and compiled by the authors based on data [5; 18-21]

5. Conclusions

The evaluation of the share of illicit drug trafficking in Kazakhstan's GDP and GRP in 2011-2016 has shown a declining trend in recent years: its share of GVA regarding GDP of Kazakhstan in 2016 amounted to KZT 199,306.5 million (USD 596.726 million), which was 0.58%. The most common drugs in

to determine the amount of penetration of drug business into the system of the country's national accounts. To apply the obtained results in practice, it is necessary to adjust the system for collecting and presenting statistical data for different state bodies, leading them to unified standards.

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