Shadow Economic Activities: Assessment and Minimization Problems

Daniyar Baizakov[1], Anuarbek Kari[2*]

[1]Academy of Public Administration under the President of the Republic of Kazakhstan, 33a Abay Street, Astana 010000, Republic of Kazakhstan, [2]Academy of Public Administration under the President of the Republic of Kazakhstan, 33a, Abay Street, Astana 010000, Republic of Kazakhstan. *Email: anuar_kari@mail.ru

ABSTRACT

In the modern context, when official national economies face permanent problems and are not always able to ensure desired living standards for population, the fight against shadow economic activities become crucial for all countries. It cannot be won without the development of a nuanced methodology for its assessment. We proposed a new methodology based on the study of different research approaches and methods regarding the assessment of shadow processes causing damage to the national budget. It might be valuable for fiscal state bodies, as well as for all law enforcement authorities, fighting against "shadow merchants." The conclusion includes recommendations on statistical calculations of damage to the country's budget and combating shadow economic processes. The final conclusion presents a need to improve the tax legislation and integrate these statistics agencies with the information of line ministries and institutions. The findings and recommendations have universal relevance for developed and developing countries.

Keywords: The Shadow Economy, The Informal Economy, The Criminal Economy, The National Accounts System
JEL Classifications: H26, O17

1. INTRODUCTION

Shadow activities existing in all economic sectors have a highly destructive potential. Informal business invalidates the culture of entrepreneurship and undermines the financial base of state authorities.

Shadow business exists in all countries of the world regardless of the type of economic systems. The assessment of the share of shadow turnover in the country's gross domestic product (GDP) varies greatly: According to different estimates, in the developed countries this amount is not too large and equals to 7-15% and in the developing countries from 20% to 50% (Report on OSCE Activities in the Fight Against Organized Crime in 2011; Research & Outlook; System of National Accounts, 2008).

The relevance of the study is determined by hypertrophied scales of the shadow economy in the modern world. Informal activities impede the normal development and create a real threat to the

economic security of states. They put a serious strain on the state budget, since all profits remain at the disposal of a receiver and are not subject to taxation.

Of particular concern is the criminal form of the shadow economy. Illegal organizations are involved in trafficking of weapons, people, drugs, etc. (World Drug Report; Murray, 2014). All of this happens uncontrollably and often leads to open military conflicts. In the current international security situation, it is important to address the issue of interconnection between the illegal economy, and terrorist organizations as well as terrorist attacks themselves.

Over the last 10 years, the shadow economy has become a global challenge to the world community. Understanding the jeopardy of shadowing of the economy and penetration of criminal capitals into national and international public-economic relations, noting their destructive and devastating potential, governments and international institutions, first of all, started jointly developing organizational and legal measures for combating laundering

of criminal revenues (Fighting money laundering and terrorist financing: New framework, future challenges, Brussels, 2013; The fight against violent extremism and radicalization leading to terrorism, Brussels, 2015; Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime, Strasbourg, 1990 and others).

The objective of the study is to examine the effectiveness of methods of the shadow economy assessment, elaborate a universal damage assessment method of shadow economic activities to the state budget and evaluate its relevance and efficiency (on the example of the Republic of Kazakhstan).

The objective is to focus on the following tasks:
- Evaluate shadow processes in the economy in relation to GDP;
- Identify the dependence between shadow activities and different sectors of the economy;
- Develop a methodology for assessment of the damage, caused to the public sector by evasion of different taxes;
- Analyze the dependence of the budget deficit on the scales of shadow activities;
- Determine the modern economy challenges, related to shadow processes and provide recommendations for budget and tax policies.

The subject of the study is the damage caused by the shadow economy to the public sector; the object is shadow processes in various sectors of the economy and their impact on budget revenues. Kazakhstan as a developing country is easy to analyze due to pronounced shadow economic processes, on the one hand, and due to on-going economic and budget reforms, on the other.

The scientific community has paid great attention to the study of shadow processes in the economy, improvement of methodology and theoretical framework. The preparation for this research included the study of a large number of foreign works on the subject, reflecting the phenomenon of the shadow economy in theoretical and practical aspects, its scope and socio-economic consequences for national economies: Black et al. (2012), Chavdar (2012), Clay and Phillips (2015), Coase (1990), Cling (2014), DeKieffer (2010), Godfrey (2015), Guttmann (1977), Hart (2015), Houston (2007), Kabeer et al. (2013), Macpherson and Sobel (2012), Mankiw and Ball (2010), Morris and Polese (2015), Mörtenböeck (2015), Nauro (2010), Nusbaumer (2011), O'Bannon (2014), Pearson and Kusakabe (2012), Pisani (2013), Richardson and Pisani (2014), Schneider (2011), Strangio and Sancetta (2015), Sullivan (2015), Tucker (2014), Williamson (2013), and others.

The existing points of view and approaches to the study of shadow activities reflect real processes in the economy, complementing each other. However, they do not reveal the nature of this phenomenon, and do not pay enough attention to its functional component. The importance and the unresolved problems of the shadow economy make relevant all the issues related to the "special" segment of the market economy.

Despite the fact that many aspects of the shadow economy have been studied, the assessment of damage to the country's

budget and development of recommendations to minimize it are underrepresented in the cited literature. For example, there is no universal method; therefore the present study has scientific novelty. The results can be used to develop and improve mechanisms to combat the shadow economy.

Methodical provisions and recommendations presented in the paper are universal and can be used by different states to develop an effective policy to counter shadow economic processes and prevent them.

2. MATERIALS, METHODS AND ORGANIZATION OF RESEARCH

The study is based on the analysis of existing methods of statistical assessment of the shadow economy in view of its structure and development of the author's method for assessing the damage to the public sector.

In the Kazakh statistics based on the standards of international organizations, the shadow economy refers to non-observed economy (The Republic of Kazakhstan: Financial System Stability Assessment, 2014) In turn, it is divided into hidden, informal and illegal forms of activity. The assessment of the non-observed economy is carried out at the micro and macro level. The assessment methodology is quite complex, since it is impossible to take into account each operation in the shadow economy. Therefore, all figures are provisional.

The growth of the shadow economy in 2013 was due to a change in its assessment methods in the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan (hereinafter – RK KSMNE) (the assessment methods are available in English on http://adilet.zan.kz/eng.) The difference between the previously existing and new assessment methods can be found in Table 1.

The new methodology involves assessment methods for the non-observed economy for statistical and economic reasons, as well as the study of informal, illegal activities.

1. Assessment methods of the non-observed economy for statistical reasons: Statistical reasons are caused by failure to receive accounts from the respondents included in the data collection program. In this case, adjustments for the non-observed economy for each activity are calculated at the micro level.
   To calculate the non-observed economy in Kazakhstan at the macro level the following formula is used:

$$GVA_{hidd}^{stat} = \frac{O_{hidd}^{stat}}{O_{CHCi}} * GVA_{CHCi} \qquad (1)$$

Where,

GVA_{hidd}^{stat} is non-observed economy, hidden for statistical reasons;

O_{hidd}^{stat} is gross output for a particular type of activity at the micro level, hidden for statistical reasons (adjustments at the micro level);

Table 1: Comparison of assessment methods of the shadow economy before and after 2013

Assessment criteria	Methods applied before 2013	New methods
Objects of the study	Hidden and informal activities	Hidden, informal, illegal activities
Assessment methods of shadow activities for economic reasons	Method of comparison of the indices of interrelated indicators	Calculation of the intermediate consumption ratio based on the unaccounted GVA, identified as a result of tax audits
Basis for the assessment of informal activities	Household data	Sample survey of the activity in each economic sector
Key factor in classifying the enterprise or individual to the informal sector of the economy	Status of the activities of the enterprise or individual	Presence or absence of the registration as an individual entrepreneur or a business entity of any organizational and legal status
While determining the scale of the shadow economy in the industry	Data are compared with the GDP calculated by income and by end-use methods	Data are compared with the GDP, calculated by revenue, production and end-use methods

Source: Compiled by the author. GDP: Gross domestic product

O_{CHCi} is gross output for a particular type of activity at the macro level;

GVA_{CHCi} is GVA for the corresponding kind of activity (calculated at the micro level).

The drawback of this method is the fact that it is based only on the accounting and statistical approach. This means that the main criterion for selection of non-observed relations is failure to present statistical accounting by officially registered business entities. The calculation of the non-observed economy's size does not take into account the underground production, non-registration of enterprises and activity of agents, hidden from the public authorities' control.

2. Assessment methods of the non-observed economy for economic reasons: Economic reasons mean the distortion of accounting data: The partial or total failure to declare income, operation without official permits, violations of immigration and labor laws, etc. Adjustments are made separately for individuals and legal entities, after that the values are summed up.

To calculate the non-observed economy, the following formula is used:

$$O_{hidd}^{econom} = \frac{GVA_{hidd}^{econom}}{k_{IC}} \qquad (2)$$

Where,

O_{hidd}^{econom} is non-observed economy, mln USD;

GVA_{hidd}^{econom} unaccounted GVA, identified following the audit during the accounting period, mln USD;

k_{IC} the ratio of intermediate consumption.

The drawbacks of this method are:
   i. It does not take into account the non-observed economy in the regional context. Shadow activities in the border areas are higher than the national average. Population in these areas declines at a slower pace than the national average, which is indicative of higher employment opportunities. This circumstance gives reason to apply, in addition to the ratio of intermediate consumption, correction factors for the border regions.
   ii. Surveys of respondents are selective. This means that the ratio of intermediate consumption, calculated on the basis of tax audit, reveals only a part of the income from the shadow economy.

   iii. When calculating, authorized agencies do not take into account the information obtained by law enforcement and financial control bodies, etc.
   iv. Double accounting probability. Goods and services hidden in the production stage may be covered by regular statistical survey in the use stage, thus adjustments may be overstated.

3. Assessment of the informal economy: The informal economy is the activity not registered in accordance with the legislation of Kazakhstan and carried out by individual entrepreneurs or groups of persons avoiding obligatory payments to the budget. The data of industry statistics is used to calculate this type of the non-observed economy. Types of informal activities are set for each industry; sampling of enterprises for the survey is discontinuous in nature.

The drawbacks of this method are:
   i. The lack of comprehensive coverage of all types of economic activities. Unaccounted industries affect the amount and structure of the macro data, which leads to distortion of official information about the state economy
   ii. The data of statistical authorities are not integrated with the information of ministries and agencies. Some economic activities are actively hidden by the bodies responsible for their implementation.

4. Assessment of damage caused by shadow activities to the state budget revenue:

Assessment of damage caused by shadow activities to the state budget revenue is carried out according to author's methodology.

Five indicators were analyzed to assess the overall damage (K_{budg}):

a. Damage to the public sector due to the evasion of corporate income tax (To CIT)

$$K_{CLLIE} = (p_{4,1,1} - q_{4,1,1}) \times \frac{n_{4,1,1}}{m_{4,1,1} \times k_{4,1,1}} \qquad (3)$$

Where,
- $p_{4,1,1}$ – Amount of additionally assessed payments following the audit of CIT, mln USD;
- $q_{4,1,1}$ - Amount of additionally assessed interest and penalties following the audit of CIT, ths. USD;
- $n_{4,1,1}$ - Number of opened personal accounts to account CIT, u.;

- $m_{4,1,1}$ - Number of audits on CIT, u.;
- $k_{4,1,1}$ - Rate estimating the share of violations detected during audits of the tax legislation in terms of the CIT of an economic entity.

b. Damage to the public sector due to the evasion of personal income tax (K_{PIT})

$$K_{CIT} = (p_{4,2,1} - q_{4,2,1}) \times \frac{n_{4,2,1}}{m_{4,2,1} \times k_{4,2,1}} \qquad (4)$$

Where,

- $p_{4,2,1}$ - Additionally assessed payments following the audit of *PIT*, mln USD;
- $q_{4,2,1}$ - Amount of additionally assessed interest and penalties following the audit of PIT, ths. USD;
- $n_{4,2,1}$ - Number of opened personal accounts on PIT accounting, u.;
- $m_{4,2,1}$ - Number of audits on CIT, u.;
- $k_{4,2,1}$ is the rate estimating the share of violations detected during audits of the tax legislation in terms of PIT.

c. Damage to the public sector due to value added tax evasion (K_{VAT}),

$$K_{VAT} = (p_{4,3,1} - q_{4,3,1}) \times \frac{n_{4,3,1}}{m_{4,3,1} \times k_{4,3,1}} \qquad (5)$$

Where,

- $p_{4,3,1}$ - Additionally assessed payments following the audit of VAT, ths. USD;
- $q_{4,3,1}$ - Amount of additionally assessed interest and penalties following the audit of VAT, ths. USD;
- $n_{4,3,1}$ - Number of opened personal accounts on VAT accounting, u.;
- $m_{4,3,1}$ - Number of audits on VAT, u.;
- $k_{4,3,1}$ - Rate estimating the share of violations of the tax legislation detected during audits of the tax legislation in terms of VAT.

d. Damage to the public sector due to social tax evasion (K_{soc}),

$$K_{blwc} = (p_{4,4,1} - q_{4,4,1}) \times \frac{n_{4,4,1}}{m_{4,4,1} \times k_{4,4,1}} \qquad (6)$$

Where,

- $p_{4,4,1}$ - Additionally assessed payments following the audit of social tax, ths. USD;
- $q_{4,4,1}$ - Amount of additionally assessed interest and penalties following the audit of social tax, ths. USD;
- $n_{4,4,1}$ - Number of opened personal accounts on social tax accounting, u.;
- $m_{4,4,1}$ - Number of audits on social tax, u.;
- $k_{4,4,1}$ - Rate estimating the share of violations of the tax legislation detected during audits of the tax legislation in terms of social tax.

e. Damage to the public sector due to the evasion of other taxes, fees and charges

$$K_{wepyk} = (p_{4,5,1} - q_{4,5,1}) \times \frac{n_{4,5,1}}{m_{4,5,1} \times k_{4,5,1}} \qquad (7)$$

Where,

- $p_{4,5,1}$ - Additionally assessed payments following audits, ths. USD;
- $q_{4,5,1}$ - Amount of additionally assessed interest and penalties following audits, ths. USD;
- $n_{4,5,1}$ - Number of opened personal accounts on the

accounting of other taxes, fees and charges, u.;

- $m_{4,5,1}$ - Number of audits on other taxes, u.;
- $k_{4,5,1}$ - Rate estimating the share of violations of the tax legislation detected during audits of the tax legislation in terms of other taxes.

The total damage to the public sector is determined by the sum of all damages.

$$K_{gen.} = K_{CIT} + K_{PIT} + K_{VAT} + K_{SOC} + K_{other} \qquad (8)$$

The proposed methodology meets the objectivity, a multi-factor model, feasibility data collection criteria.

3. RESULTS AND THEIR CONSIDERATION

According to the results of assessment of the share of the shadow economy in GDP, we can see that in 2010-2014 the volume of the shadow economy varies from 19.5% to 29.1% of GDP (Figure 1).

The growth of the shadow economy since 2013 is due to the change in the method of its assessment in the RK KSMNE.

Most countries do not take into consideration incomes from the shadow economy while estimating GDP because of the difficulties in the methodology of assessment and obtaining real data (Claessens, 2014; Nieders, 2013; Transparency International). Kazakhstan is the first state in the Commonwealth of Independent States, making adjustments of GDP with regards to illegal activities. Following the suit of the developed countries, in 2013 Kazakhstan started to include into its GDP: Prostitution, arms trade, smuggling, production of illegal alcoholic drinks and other types of illegal activities (Rostovtzeff, 1963/2012). From our point of view, for which we provided arguments in the theoretical part of this study, such an innovation is against regulatory practices, which lie at the core of combating shadow economy activities.

The share of illegal activities in GDP of the country according to the new method is at the level of 2.4%, which is in total terms comprised $5.51 bn.

Figure 1: Share of the non-observed economy in gross domestic product of Kazakhstan for 2010-2014
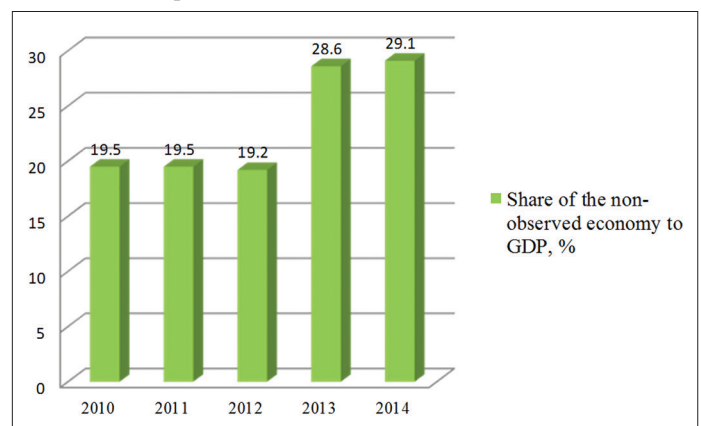
Despite the new method of assessment of shadow economy activities, there are significant differences between data from the RK KSMNE and international assessment of Kazakhstan. According to the World Bank data, the share of the shadow economy in Kazakhstan is more than 41% (Kazakhstan: Growth Slows as External Pressures Rise). It is due to the fact that the method of the World Bank is mostly based on the Method of Expert Estimations (Kaufmann and Kaliberda, 1996).

The consolidated data on the financial and economic activities of organizations can show processes "shadowing" the economy. The analysis of the estimates revealed that the actual volume of production in Kazakhstan is 6% higher than registered. The cost of products produced during the reporting period, is different from the actual by 29% (Figure 2). This is due to the fact that entrepreneurs in their reports overstate the cost of production through the inclusion of fictitious costs.

Net financial result according to the official data of the RK KSMNE is different from the indicator adjusted for shadow economic activities by 45%. This difference is caused by the fact that it is being simultaneously affected by both fictitious and hidden operations. These activities are carried out not only to transfer funds to the shadow turnover, but also to reduce the tax base, which leads to a distortion of the statistical reporting (The Twelfth United Nations Congress on Crime Prevention and Criminal Justice).

A clearer picture of the shadow economic activity can be demonstrated by the industry section, showing that the non-manufacturing sector is the most attractive to the "shadow merchants" (Figure 3).

In assessing the level of the shadow economy in various sectors of the economy, one should take into account the relative scale of the shadow economy (Anderberg, 2012). In the sectoral structure of the shadow activities, an industry cannot occupy the leading position, but a high level of shadow activity has a significant impact on the development of the industry (Baumohl, 2012; Dallago and McGowan, 2015).

The high level of shadowing in Kazakhstan is characterized by the construction industry and services. However, these industries have a low share in the structure of the shadow economy. A significant share in the structure of the shadow economy is represented by mining, but the shadow activity in this sector remains at a low level (Figure 4).

Such cross-sectoral distribution of shadow activities does not reflect a lack of effectiveness of the law enforcement agencies, and the imperfection of the legislation on the settlement of certain aspects of business activities. It leads to the transformation of the official economic activities into the most "comfortable" types of shadow activities.

The shadow economy is detrimental to the budget, reduces the effectiveness of macroeconomic policies, deforms the structure of the economy and worsens the investment climate in the developed

and developing countries (Breman, 2013; De Soto, 1999; Yezer, 2014). As a result, the budget loses considerable sums, which could increase revenues by 10-30%. Kazakhstan loses its ability to solve the vital problem such as to index wages for employees, to fund health care, education, medical research, etc.

The ratio of budget revenues to volumes of the shadow economy indicates that the size of the shadow economy grows almost in direct proportion to the growth of revenues (Figure 5).

The maximum amounts of funds not received by the budget were observed in 2014. During this period, there was a drop in oil prices, and other structural problems became urgent. In an effort to maintain the level of economic development of 2013, the legislator

Figure 2: Production costs and net financial result of organizations in the Republic of Kazakhstan in average for 2010-2014, bln USD
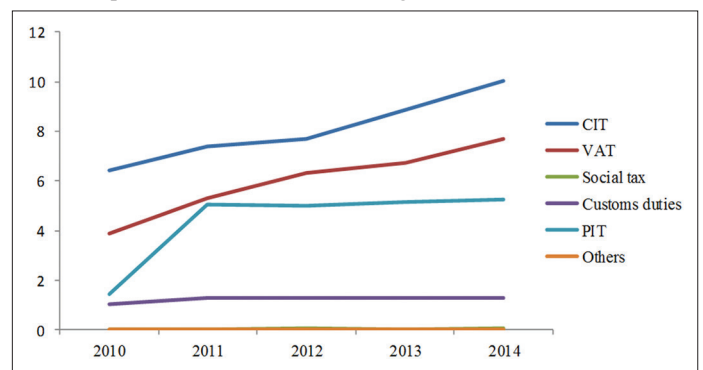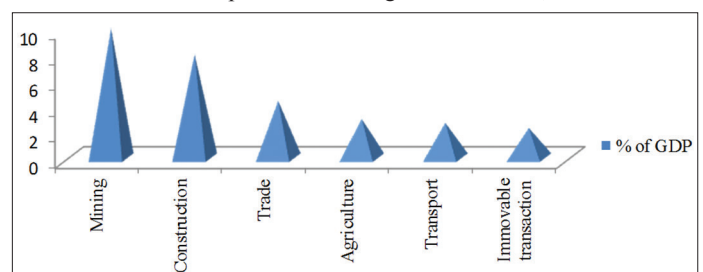

Source: Compiled by the author of the article based on the RK KSMNE data

Figure 3: The relative scale of the shadow economy in the Republic of Kazakhstan by types of economic activity in average for 2010-2014, %
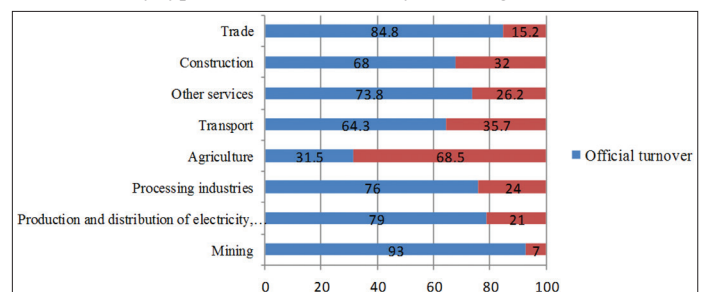
Source: Compiled by the author of the article based on the RK KSMNE data

Figure 4: The level of shadowing of activities by industry to Gross domestic product in average in 2010-2014, %

Source: Compiled by the author based on the RK KSMNE data

decided to reduce costs dramatically, including preferences for business entities. Actual cut of the population's incomes has led to the active development of the shadow economy.

The comprehensive action plan for 2014-2015 did not give a proper result. It was planned to bring $0.71 billion out of the shadow economy. The plan consisted of 60 measures, which included the fight against tax and customs duties evasion, improving business environment, etc.

Figure 6 shows the ratio of budget revenues to the shadow economy, expressed in %. This comparison allows us to estimate how much budget revenues and the volume of the shadow economy have really increased.

Budget revenues in the entire period under review range from 20% to 25%, while the volumes of the shadow economy fluctuate from 19% to 28% in relation to GDP. The shadow economy in terms of GDP ratio, thus, competes with the whole state budget. Figure 7 shows that the amount of budget revenues and the amount of the shadow economy are inversely proportional.

The revenue side of the budget is formed by tax and non-tax revenues as well as transfers. More than 2/3 of the proceeds are of tax character. Transfers are generated by taxes from the mining industries. Accordingly, we can conclude that 98% of all revenues of the consolidated budget are tax payments.

Transfers play a special role in the national budget. Their increasing share indicates a decline in the sustainability of public finances and increase of the country's economic dependency on revenues received from the mining industries. Kazakhstan's plans for 2015 included the reduction of non-oil deficit to 3.9% of GDP (Figure 8).

Figures 9 and 10 present an analysis of the budget revenues in relative and absolute terms, with the share of tax revenues, which show their important role in the structure of budget revenues.

Let us dwell on the types of income in relative terms (Figure 10).

The top line is for tax revenues. It shows that the degree of non-oil budget is being gradually reduced. The line for transfers, on the contrary, shows a reduction of the republican budget's dependency on transfers of the National Fund. Non-tax revenues and revenues from sales of fixed assets are small in relative terms, and only in 2013, they are higher than 5%.

The tax legislation establishes a closed list of proceeds in every type of the budget. For example, a personal corporate tax is a revenue article of local budgets, and CIT is fully incorporated into the national budget. The main share of VAT also belongs to the national budget (Figure 7).

Figure 11 clearly demonstrates correlation between the three very significant tax revenues: CIT, VAT and PIT.

Figure 5: Comparative analysis of budget revenues and volume of the shadow economy in 2010-2014, bn USD
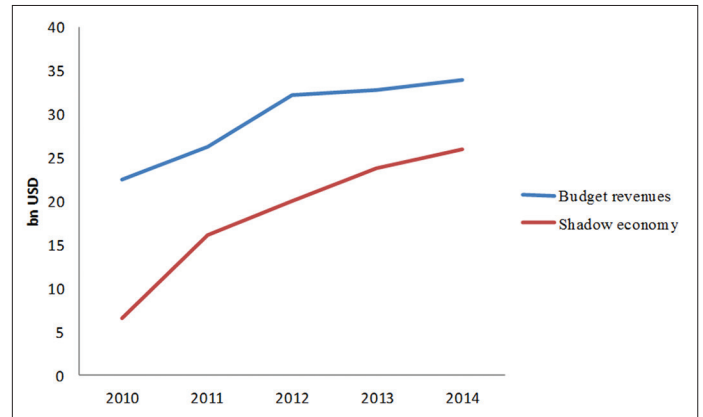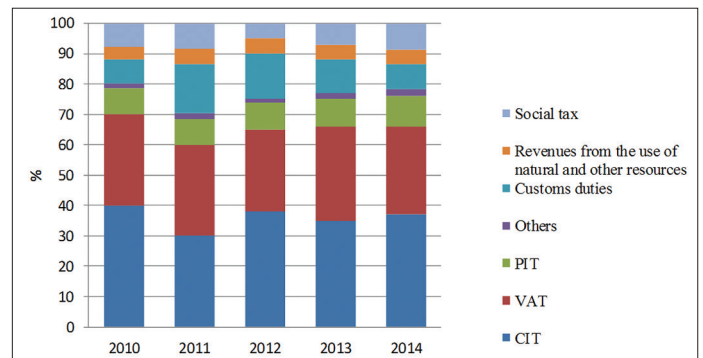

Source: Compiled by the author of the article based on the data from the Financial Revenues Committee of the Ministry of Finance of the Republic of Kazakhstan and the RK KSMNE

Figure 6: Comparative analysis of the state budget and the volume of the shadow economy, in % of gross domestic product
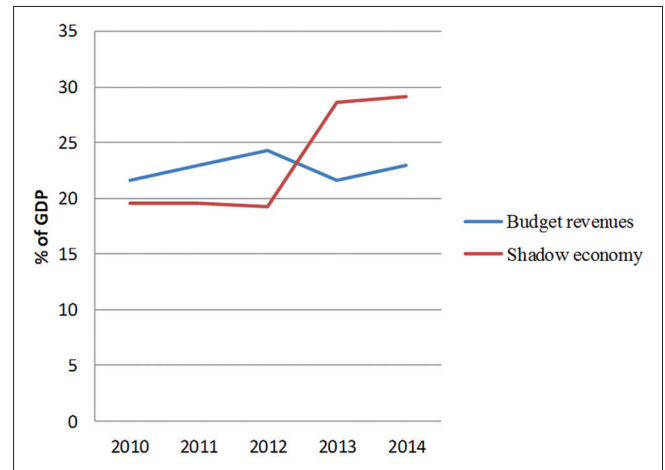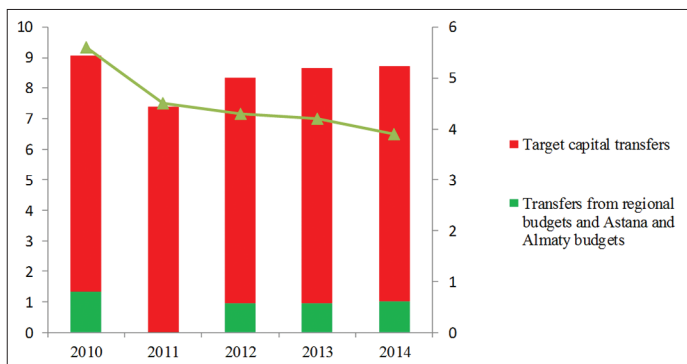

Source: Compiled by the author of the article based on the data from the Financial Revenues Committee of the Ministry of Finance of the Republic of Kazakhstan and the RK KSMNE

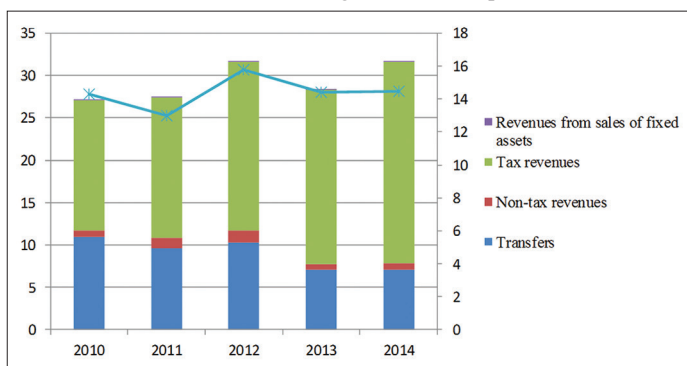**Figure 7:** The structure of the main tax revenues in the state budget in 2010-2014, %

Source: Compiled by the author of the article based on the data from the Financial Revenues Committee of the Ministry of Finance of the Republic of Kazakhstan

Figure 8: Transfers in 2010-2014, bn USD, % of Gross domestic product

Source: Compiled by the author of the article based on the data from the Financial Revenues Committee of the Ministry of Finance of the Republic of Kazakhstan

Figure 9: State budget revenues in absolute and relative terms in 2010-2014, bn USD, % of gross domestic product

Source: Compiled by the author of the article based on the data from the Financial Revenues Committee of the Ministry of Finance of the Republic of Kazakhstan

Therefore, the analysis shows that the decrease of the tax component in the shadow economy may seriously damage the national budget.

The total damage to the public budget revenues was growing steadily during 2010-2014, the number 45% may be called critical, since it is approaching the half of the budget (Table 2). The biggest damage was associated with VAT and CIT. The maximum damage to the budget caused by non-payment of VAT was 53.7% in 2014.

Maximum damage to the budget sphere in 2014 (Figure 12).

The main part of the damage to the consolidated budget of Kazakhstan involves four taxes: CIT – 25%, VAT – 31%, social tax – 13%, PIT – 10%. The share of other taxes and collections is only 20% (Figure 13).

The maximum damage to the budget is caused by the non-payment of VAT. This is because of its significant contribution to the budget revenues and gaps in the tax legislation, providing numerous opportunities not to pay VAT using fraudulent deals. VAT is very complex matter for the supervision by tax agencies. This challenge is noticed by experts of different countries (Utting, 2015; Wood

Figure 10: Types of state budget revenues in 2010-2014, in % of the budget
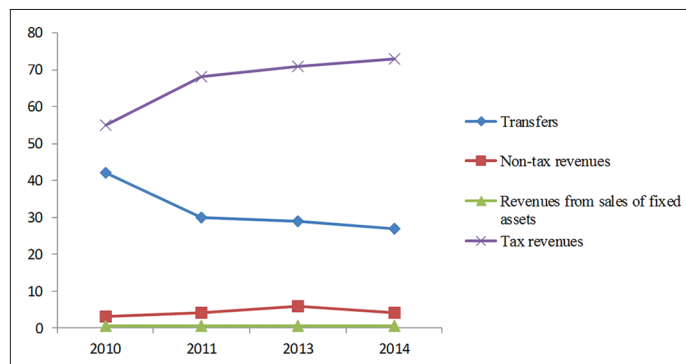
Source: Compiled by the author of the article based on the data from the Financial Revenues Committee of the Ministry of Finance of the Republic of Kazakhstan

Figure 11: Types of tax revenues in the state budget, bn USD
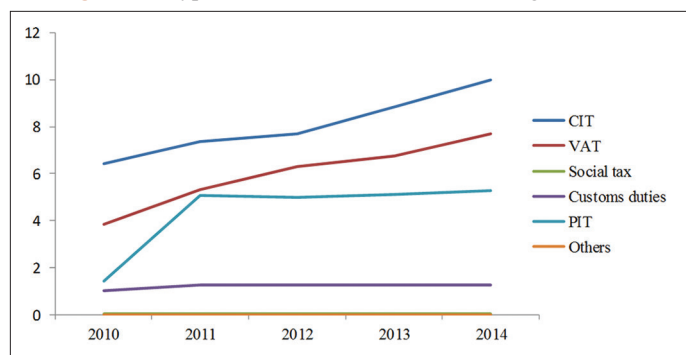
Source: Compiled by the author of the article based on the data from the Financial Revenues Committee of the Ministry of Finance of the Republic of Kazakhstan

et al., 2011; Yezer, 2014). VAT calculation algorithm and procedure of its reimbursement spawn corruption. It is noteworthy that some conscientious taxpayers shall apply to court in order to return VAT.

CIT is at the second place with regard to the size of damage to the budget sphere. The proportion of the collected tax to the hidden tax is 19%, moreover this tax ensures 21% of all revenues collected in Kazakhstan. The tax legislation in the field of CIT has strict requirements towards the accounting service and qualification of tax objects. The ambiguousness of the legislation does not allow determining whether there are accidental mistakes concerning calculation of the tax or it is tax avoidance.

Social tax significantly contributes to the damage to the budget in terms of non-delivery of tax revenues. Tax avoidance is explained by the high interest rate and easy ways to transfer money into the shadow turnover by payment of a part of employees' salaries "in envelopes".

Despite the fact that PIT rate is not high and there is no progressive taxation system, the damage caused by non-payment of this tax is very essential for accounting. Possibly, this is due to the fact that social tax and personal corporate tax have one and the same taxation base, which allows to introduce fraudulent schemes of

Table 2: Analysis of damage to the budget sphere of Kazakhstan in 2010-2014

Name	2010	2011	2012	2013	2014	Change 2011-2010	Change 2012-2011	Change 2013-2012	Change 2014-2013
Damage to the budget sphere caused by non-payment of CIT %*	25.6	27.6	43.3	39	26	2	15.7	-4.3	−13
Damage to the budget sphere caused by non-payment of PIT %*	6.3	6.3	6.4	6.1	7	0	0.1	-0.3	0.9
Damage to the budget sphere caused by non-payment of VAT %*	50.2	52.2	31.7	38.9	53.7	2	−20.5	7.2	14.8
Damage to the budget sphere caused by non-payment of social tax %*	16.9	12.4	16.9	14.1	11.1	−4.5	4.5	-2.8	-3
Damage to the budget sphere caused by non-payment of other taxes, fees and collections %*	1	1.5	1.7	1.9	2.2	0.5	0.2	0.2	0.3
Total damage, % out of the state budget revenues	15.1	16.15	37.7	38.6	45	1.05	21.55	0.9	6.4

Source: Calculated and compiled by the author of the article, based on the data of the State Revenues Committee of the Ministry of Finances of the Republic of Kazakhstan. *: In % to the total damage to the budget sphere revenues. PIT: Personal income tax, CIT: Corporate income tax, VAT: Value added tax

Figure 12: Dynamics of the total damage to the budget sphere of Kazakhstan in 2010-2014, in % to gross domestic product
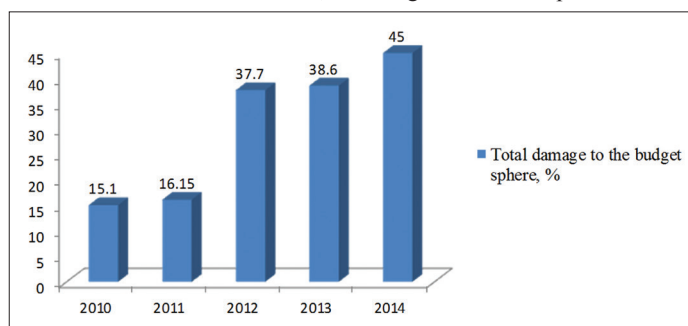
Source: Calculated and compiled by the author on the damage assessment to the state budget

Figure 13: The structure of the damage to the state budget revenues of Kazakhstan in 2010-2014
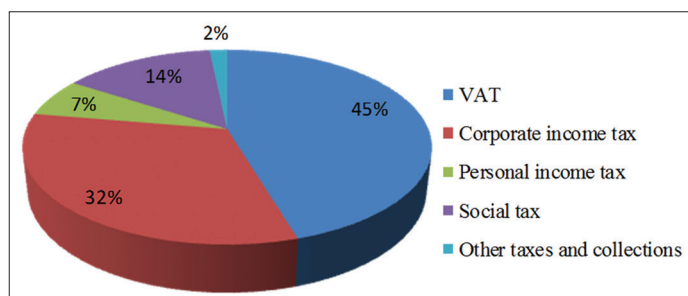
Source: Calculated and compiled by the author on the damage assessment to the state budget

non-compliance with tax obligations. With regard to this issue, Doctor of Economics V. T. Ruggiero stated that labor migration affects this considerably (Ruggiero et al., 2012).

Therefore, the shadow economy leads to the deformation of the budget area. The analysis shows a definite inverse proportion between the dynamics of the budget revenues and dynamics of the shadow economy size. The ring of factors closes: Reduction of the budget revenues is a cause for the funding gap in the state economic institutions; it degrades the level of welfare of citizens and raises the shadow economy growth. The problems of the replenishment of the national budget lie within the sphere of tax administration: The biggest damage to the budget sphere was related to VAT and CIT. The factor of the damage to the budget is not taken into account when developing measures for countering the shadow economy.

4. CONCLUSIONS

The methods, used to evaluate the shadow economy volumes in Kazakhstan (up to 2013 and beyond) do not reflect the real level of the shadow economy. Very often the interpretation of the invisible economy and its components by authorized ministries and agencies is different from the accepted one for statistical purposes. According to information received by law enforcement bodies, the committee on combating drugs and other agencies that lead to complications with the registration of informal, illegal and hidden activities. Data on registered respondents, obtained through open control techniques, is not sufficient for the assessment of the shadow economy.

Macromodel methods are inadequate for studying the shadow economy because of focusing on suggestions, which cannot be checked (for example: The method of cash demand anticipates that with the growth of illegal business, demand on cash grows, because the majority of such operations are carried out via cash). Existing macromodel methods are improbable in some cases.

Shadow activities are unevenly distributed in the Kazakh economy sectors. The leaders among "shadow" sectors of the economy are agriculture, trade, construction and transport. Minimal values of shadow activities are registered in the mineral extraction industry (7%), production and distribution of oil, gas and water (up to 21%). This is because the government fully supervises these industries.

Statistical and tax accounting, absence of the analysis of possible shadow schemes when forming and amending the legislation boost their development in the country. Activities of law enforcement agencies are instrumental, identifying the shadow economic entities, but there is a need in such a model of economic

management, in which it would be beneficial to work openly and legally. In the situation of permanent reforms and financial crises, it is important to consider the condition and interests of socially vulnerable people, enterprises with low profitability. A set of elaborate administrative, economic and judicial measures towards the elimination of causes of shadow activities is needed.

Reduced income levels of the population and their sharp differentiation culminated in the growth of shadow activities among people. This became most obvious in agriculture and transport areas, because the tax administration in these economic sectors is problematic. As for enterprises, they strive to maximize profits and in many cases fudge tax base using zero invoices, providing additional financial reports, outflow capital through foreign firms and etc.

Shadow activities harm the public budget. The proposed technique of assessing the damage to the state budget revenues showed that this damage increased from 16% to 45% in 2010-2014. In addition, Kazakhstan always faces the problem of the budget deficit and uses the National Fund resources. Over the whole examined period the budget deficit is in the critical range - 3-4%. State budget revenues are growing, but insignificantly. Moreover, it is necessary to note that the growth of the shadow economy is comparable with the growth of the consolidated budget revenues, this means that the illegal economy has long ago outgrown the safe borderline, which is 8% in developed countries.

2/3 of the national budget of Kazakhstan is represented by tax revenues. The bulk of taxpayers' earnings come from CIT, PIT and VAT. During the same period, the size of VAT non-payment exceeds 50%. The main grounds for partial payment of taxes are bound with the imperfection of the tax legislation and disadvantages in administering large and medium taxpayers. The minimal damage to the budget sphere is mostly observed in the regions with advanced oil and gas production, and only due to the mining tax. It is closely connected with physical volumes of extraction, since it is challengeable to manipulate it.

5. RECOMMENDATIONS

The obtained results and conclusions of the research allow to offer the following recommendations on the management in the sphere of the shadow economy minimization:
- Data integration between statistical bodies and line ministries and agencies is required. Each statistical indicator needs the collection of information from various authorized bodies. Finding a single standard for the statistical database may increase the accuracy of calculations;
- Any concept for combating the shadow economy necessitates the legal enforcement of a universally understood and applied definition for the shadow economy and gradation of its spheres (types);
- In addition to the accounting-statistical method for collecting information, there is a need to introduce a formal-legal and criminological approach (under the criterion of public harm);
- In order to evaluate the shadow economy the improvement of methods of the invisible economy assessment shall be

conducted within the vector of multifactor models;
- Tax rate play a crucial role for the transfer of funds into the shadow economy. This fact should be considered while developing measures against shadow business;
- Shadow economy must always be treated as a hidden resource of the national budget, thus all areas of the state budget regulation shall include impacts to address this resource;
- When developing a mechanism for combating the shadow economy, it is obligatory to take into account its internal structure and structural influence on the economy sectors;
- When developing a tax policy, it is important to keep in mind the size of damage to the budget sphere with regard to the non-payment of a concrete type of taxes;
- Addressing the issue of the shadow economy begins with the dialogue between the state and "shadow merchants", determination of reasons and evaluation of repercussions on subjects of shadow economic activities.

The obtained results of the research are universal and valuable for all the world countries. They can be used to form a state policy to deal with the shadow sector of the economy.

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