ASSESSMENT OF THE SHADOW ECONOMY IN THE REPUBLIC OF MOLDOVA: THEORETICAL GROUNDING AND PRACTICAL RESULTS OF THE INPUT-OUTPUT MODEL

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Abstract

Assessment of the phenomenon of shadow economy represents an actual challenge for researchers from all over the world. The current paper aims to make a theoretical grounding and assessment of the shadow economy in the Republic of Moldova. Research is based on the use of the input-output model, which, through its evaluation function estimates the main macroeconomic indicators and allows assessing the shadow economy. The research is based on the analysis of 18 official documents provided by the National Bureau of Statistics of the Republic of Moldova, the Customs Service of the Republic of Moldova, the State Tax Service of the Republic of Moldova, the National Agency for Regulation in Energy, etc. The main findings present considerable losses of the state budget in 2018 (3.02% of GDP), while the agro-industrial complex registering the highest detected values of the shadow economy.

Keywords: Shadow economy, Input-Output model, Republic of Moldova.

JEL Classification: O17, H26, C67.

1. Introduction

The shadow economy represents an actual and acute threat to the national economy of any country, as well for the development of the whole world. Therefore, it is becoming increasingly important to study this phenomenon by measuring its effects on the national economies. Assessment of the shadow economy represents a

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challenge for different scholars from different countries. The researchers have developed a number of methods when trying to evaluate the shadow economy as accurately as possible, but an unanimously accepted evaluation methodology has not been identified yet.

The paper aims to make an assessment of the shadow economy in the Republic of Moldova, based on the input-output measurement approach. The input-output model, which is part of the indirect evaluation methods category, represents one of the applied scientific methods for studying the phenomenon of the shadow economy. The given model represents the balance and flows of products, services and their costs as well as the interdependence between different branches of the industry. The balance of interdependencies between the branches can be drawn up both in natural values and in monetary ones. At the macroeconomic level, it can describe the flow of goods and services, as well as their costs, among all sectors of a national economy over a specific period of time, usually a year.

2. Literature review

In the Republic of Moldova, the input-output model has been used as a research method by various scholars, like: Filip and Silvestru (2010), Naval and Ghereg (2017), Gaftea (2013), Ustian (2015). Taking into account its various functions, the method was used for general analysis of the economy of the country, approaching issues related to the balanced functioning of the economy. In the current conditions of the Republic of Moldova, the phenomenon of shadow economy has been studied by such researchers as: Costandachi (2012), Budianschi et al. (2014), Gutium and Ganciucova (2018), Ganciucova et al. (2016) and others. The author also has a specific contribution in researching the phenomenon of shadow economy in the Republic of Moldova, through the research activity carried out in the framework of the institutional project dedicated to analysis and forecast of macroeconomic indicators in the Republic of Moldova, by a direct contribution to the annual scientific report.

However, there is still no unambiguously acceptable method of assessment of the shadowy economy related to the country's realities.

3. Research methodology

3.1. The input-output model

This model originates in 1898, when Russian economist V.K. Dmitriev, in his paper "Economic Essays"[1], first developed a system of linear equations that linked the prices of goods and the costs of their production, that is, the prices of goods and resources. Proving the solvency of this system of equations, he introduced a series of technical coefficients that show the share of costs of one product in the production of another. In 1924, the Central Statistical Administration prepared for the first time in history a national economy balance for the period 1923–1924 and a forecast balance for the years 1924–1925 (Popov, 1993).

American economist of Russian origin V.V. Leontief, studying the above-mentioned work, carried out a series of researches dedicated to the theoretical foundations of inter-branch balance and concluded that the coefficients that express the connections between the sectors of the economy are quite stable, can be predicted and can be used in economic planning (Leontief, 1925). In the following years, the model was further developed by the scholar and was subsequently used in the analysis of economies of other countries such as USA, Germany, etc. Given the importance of the model for the economy, in 1973 Leontief received the Nobel Prize in economics for developing the "input-output" model and for its applicability in solving important economic problems.

The input-output model found its application immediately after its launch. In Romania, the first Input-Output Table was prepared in 1990. In 1991, Russian Federation implemented the System of National Accounts, and in accordance with the concept of this system, the first input-output balance was drawn up in 1995. Other countries where the model has been developed were USA (1939), France (1950s), United Kingdom (1991), Japan (1995), New Zealand (1953). In 1995, OECD lays the foundation for a project for the elaboration of an input-output table on a global level by grouping 10 countries, over a historical period covering the years 1968-1990. Over the years, the global database of resources and uses (World Input-output database) has been updated, so that in 2016 it included the table of resources-

[1] *V. K. Dmitriev, "Economic Essays on Value: Competition and Utility", Cambridge University Press (1974).*

uses for 43 countries of the world, including most of the countries from the European continent. (World Input-Output Database, 2016).

The specialized literature admits 4 functions of the model:

- *The statistical function* allows the integration of the statistical data in a concise framework, with the possibility of verifying the coherence of the economic information describing the inputs and outputs of goods and services.

- Through the analytical function, consumption ratios in the production process, distribution of the production-by-production branches, as well as the share of final consumption in the total global production can be analyzed.

- The essence of the *evaluation function* is the estimation of the main macroeconomic indicators and the evaluation of the shadow economy.

- Using the model, through the *forecast function*, the main macroeconomic aggregates can be predicted, thus being elaborated economic development scenarios, and anticipated the consequences of modifying different internal and external factors on the demand.

In the general scheme of the input-output model, four components can be highlighted, called quadrants (Table 1).

Table 1

Quadrants of the input-output model

	Intermediate consumption	**Final consumption**
Intermediate product	I	II
Gross value added, import, net taxes	III	IV

Source: Leontief (1925)

First quadrant represents the square matrix of the intra-branch flows of production and expresses the intermediate consumption on various products of the branches of the national economy. The columns of the first quadrant reflect the costs of production of products and services for each industry (cost of raw materials, materials, fuel, energy, services), and the rows indicate the use of products and services for intermediate consumption (production) in the economic sectors. Second quadrant contains the information about the structure of the final used product, by which is understood the sum of the non-productive consumption, of investments, economies of goods, export.

Third quadrant includes the sources of use of the factors of production (capital and labor) for the creation of the gross added value, import on each branch and the net taxes of products and import. The columns of quadrants I and III, which provide us with information on the intermediate product and the added value, reflect the entries. The rows of quadrants I and II provide information on intermediate and final consumption, thus characterizing the use of resources, respectively, outputs (Ganciucov, 2006).

As a result, given that the resources are equal to uses, there is an equality between the sum of quadrants I with III and the sum of quadrants I with II, which can be expressed by the following formula:

$$Q_{pb} + M + T - S = CI + CF + F + V + E \quad (1)$$

where:
Q_{pb} – production volume at basic prices;
M – import of goods and services;
T – indirect taxes on products and imports;
S – subsidies on products and imports;
CI – intermediate consumption;
CF – final consumption;
F – gross fixed capital formation;
V – variation of stocks;
E – export of goods and services.

Indirect taxes on products and imports include Value Added Tax (VAT), excise duties, customs duty, etc.

If we move the intermediate consumption to the left, we obtain the equality (3):

$$(Q - CI) + M + T - S = CF + F + V + E \quad (2)$$

$$VAB + M + T - S = C + G + F + V + E \quad (3)$$

where:
VAB – gross added value;
C – final consumption of households;
G – final consumption of public administration and non-profit institutions serving the households.

The left side of equality (3) expresses the elements of third quadrant, and the right part – the elements of second quadrant, that is the final total demand D_i

$$D = C + G + F + V + E \quad (4)$$

The main elements of the model at the macroeconomic level, used for a simplified economy, conventionally structured by branches, are presented in Table 2. The respective model creates the possibility of evaluating the efficiency of the macroeconomic policies.

Table 2

Input-output model (at the macroeconomic level)

	Intermediate consumption on branch *j*				**Final consumption**						***Yi* Total uses**
Intermediate product on branch *i*:	1	2	...	n	C_i	G_i	F_i	V_i	E_i	D_i Final total demand	
1	x_{11}	x_{12}	...	x_{1n}	C_1	G_1	F_1	V_1	E_1	D_1	Y_1
2	x_{21}	x_{22}	...	x_{2n}	C_2	G_2	F_2	V_2	E_2	D_2	Y_2
...	...	...	...	...	...	...	...	...	...	...	...
n	x_{n1}	x_{n2}	...	x_{nn}	C_n	G_n	F_n	V_n	E_n	D_n	Y_n
Gross added value *VABj*	VAB_1	VAB_2	...	VAB_n	Quadrant IV						
Import *Mj*	M_1	M_2	...	M_n							
Taxes on products and imports *Tj*	T_1	T_2	...	T_n							
Subsidies on products and imports (-) S_j	S_1	S_2	...	S_n							
Total quadrant III Z_j	Z_1	Z_2	...	Z_n							
Total resources Y_j	Y_1	Y_2	...	Y_n							

Source: Leontief (1925)

Since the products from each branch are used for both intermediate and final consumption, we obtain the following formula:

$$Y_i = X_i + D_i \quad (5)$$

or

$$Y_i = \sum_{j=1}^{n} x_{ij} + D_i \quad (6)$$

where:

X_i or $\sum_{j=1}^{n} x_{ij}$ – inter-branch consumption for product *i*;

D_i – final total demand for product *i*.

$$X_i = \sum_{j=1}^{n} a_{ij} \times Q_j \times P_i \quad (7)$$

because

$$x_{ij} = a_{ij} \times Q_j \times P_i \quad (8)$$

where:

a_{ij} – technical coefficient of the consumption of the product *i* when manufacturing the product "j";
Q_j – volume of production *j* in natural expression.
P_i – weighted average price based on the production and import of the product "i".

By generalizing the above-mentioned formulas, we obtain the following formula, which reflects the sum of quadrants I and II, that is, the total uses:

$$Y_i = \sum_{j=1}^{n} a_{ij} \times Q_j \times P_i + C_i + G_i + F_i + V_i + E_i \quad (9)$$

The total resources (sum of quadrants I and III) can be calculated using the following formula:

$$Y_j = \sum_{i=1}^{n} a_{ij} \times Q_i \times P_j + VAB_j + M_j + T_j - S_j \quad (10)$$

The Leontief model explains the scheme for the production of the final demand product in an economy: for consumption, investment and export. The respective model makes a compromise between simplicity and the efficiency of reflecting the economic processes that take place, thus being a convenient, useful and practical tool.

The following basic assumptions regarding the properties of the economic system are used in the construction of the input-output model:

1. An economic system is composed of a series of determined economic elements – branches. Each branch is characterized by a numerical indicator, denoting the overall internal volume of production, expressed naturally or in value.
2. For the production of a given volume of production each branch uses strictly determined quantities of the production of other branches of the same system.
3. Increasing the volume of production per branch requires the proportional increase of all consumption elements included in the production technological scheme.
4. The production provided by each branch is partially used in the production process of other branches, and what remains, goes outside the production system as a final product.

Double registration ensures the equality between the gross output of each branch and the gross input for the respective branch. Therefore, the input-output model allows an accurate detection of the origin of the inputs (resources) and the destination of the outputs (uses), which makes it possible to estimate the shadow economy.

3.2. The input-output model adapted to the conditions of the economy of the Republic of Moldova

The input-output model of V. Leontief can be adapted to the conditions of the economy of the Republic of Moldova, being in accordance with the System of National Accounts. The available statistical data allow the elaboration and use of the input-output model in the evaluation of the shadow economy. The use of this model, unlike other methods of estimating the shadow economy (questionnaire, for example), does not imply the use of additional financial resources, being based exclusively on the analysis of the data provided by the competent bodies. At the same time, a limitation of this method is

represented by the possibility that the provided statistical data may not be of the best quality or the degree of their aggregation is quite high.

Thus, based on the available data, the input-output model for the Republic of Moldova takes the form of a table, comprising several specific interdependent elements. The natural input-output model looks as in Table 3 (see the Appendix).

At the same time, in addition to the table of natural input-output model, it is necessary to elaborate the table of natural-value input-output model, which schematically is displayed in Table 4 (see the Appendix).

This model is required periodically to be adapted, and the technical coefficients need to be revised, stemming from the fact that new technologies are emerging in the national economy, as well as due to manufacturers' tendencies to minimize costs, replacing some types of raw materials with less expensive ones, even to the detriment of the final consumer.

For example, in the Republic of Moldova, mineral wool is no longer produced and no longer used, but at the same time, new materials such as gypsum mixtures are produced and used frequently in this area. Coconut butter is used when making pastry and confectionery instead of butter. When making garments, manufacturers prefer to use synthetic fabrics or with insignificant yarn content.

Although this model involves a large volume of work (data entry for each branch, group of goods or even strategic economic asset such as fuel, calculation of different technological coefficients or different taxes, permanent updating of excise duties or other tax processes for each good, performing an analysis for each branch) it can be considerably simplified using widespread software Microsoft Excel.

4. Results

For elaborating the analysis based on input-output model, a set of official documents (18) have been used, provided by the National Bureau of Statistics of the Republic of Moldova, the Customs Service of the Republic of Moldova, the State Tax Service of the Republic of Moldova, the National Agency for Regulation in Energy, etc. Year 2018 has been examined in order to increase the relevance of the analysis.

Based on the massive volume of information and data needed to study and analyze, as well as for a more convenient and clearer

analysis of them, a number of 208 strategic economic goods have been studied, which were divided into five large complexes: The Agro-Industrial Complex, the Complex of the Machine Building Industry, the Light Industry Complex, the Heavy Industry Complex and Complex of Construction Materials Industry, these being assigned to the members of the project team. The author was directly involved in the analysis of the Heavy Industry Complex, but the analysis of the shadow economy will cover the entire industry in this section.

Agro-Industrial Complex

Within the Agro-Industrial Complex, based on the data analyzed for the year 2018 with the help of input-output model, deviations have been detected in the import and export of the following types of products: groats, cheese and cottage cheese, cognac, tobacco products, ethyl alcohol, combined feed and perfumery and cosmetic articles. Thus, using the official import and export tariffs and prices for the analyzed production, the volume of losses in the state budget from the account of the Agro-Industrial Complex was estimated at 2639.58 mil. MDL, which constituted 1.37% of GDP (see Table 5, in the Appendix).

Besides the elements of the shadow economy observed in the respective complex, other negative phenomena in the national economy were detected, namely:

- It was found that meat production is about 1.8 times smaller compared to the volume expected according to the average norms of the food basket of the minimum of existence, which reflects the low purchasing capacity.
- The volume of production of groats and dairy products, also, for the year 2018 is much lower (about 5 times) than the requirements of the food basket of the minimum of existence.

Complex of the Machine Building Industry

Following the development of input-output model for 2018, deviations of the following economic goods have been detected within the respective complex: jewelry, video recorders or reproducers, electrical household appliances, transformers <= 16 KVA, parts and accessories for cars- metal cutting tools.

Thus, following the analysis of the unofficial import that took place within the Complex of the Machine Building Industry and using the customs tariffs and the official prices for the given goods, it was

found that the volume of losses to the state budget according to our calculations reached 1325.18 mil. MDL (Table 6), which constituted 0.69% of GDP.

Heavy Industry Complex

The input-output model for the group of economic goods that are present in the Heavy Industry Complex (2018) showed gaps in the following goods: manufacture of pharmaceutical products, manufacture of furniture in assortment, gasoline, diesel.

Thus, following the analysis of the respective complex, it was observed the excessive unofficial import of some products. Using the official import and export tariffs and prices for the given goods, according to the calculations, we consider that there were missed receipts in the state budget in the amount that reached 1243.61 mil. Lei (see Table 7), which constitutes 0.65% of GDP.

Complex of Construction Materials Industry

The input-output model developed for the economic goods of the Complex of Construction Materials Industry for 2018 detected the elements of the shadow economy in the case of nine economic goods. Following the analysis of the difference between the resources and the uses in the case of two economic goods (raw slate; marble and raw travertine, cut into blocks) the export of goods that are not produced in the Republic of Moldova and which were not imported takes place. Thus, one reaches the following conclusion: either the illegal import of these economic goods took place, or the raw material was imported under other customs codes, and then the illegal production followed by the export of these economic goods took place.

According to the data of the statistical report on the circulation of industrial production in the Republic of Moldova, in 2018 there were exported “gravel and pebbles” in the amount of 60.4509 thousand tons, “granules, chips and stone dust” in volume of 17.1193 thousand tons, and “other stones for carving” -0.1422 thousand tons, while according to the export customs declarations of the economic agents in the year 2018 there was not exported “gravel and pebbles”, “granules, chips and stone dust”, and the export volume of “other stones for carving” constituted only 0.04707 thousand tons.

The analysis of the deviations between resources and uses showed that identical situations were detected in the case of other goods of the construction materials industry: Ecausin and limestone; Cement blocks and bricks for construction; Paves, sidewalks and

paving tiles made of natural stone; Tiles, cubes and the like, of natural stone.

Based on the made estimates, we can conclude that the shadow economy of the complex of the construction materials industry caused losses of the state budget in the amount of about 4 mil. Lei.

Light Industry Complex

Within the Light Industry Complex in 2018, the input-output model detected the elements of the shadow economy of the following economic goods: whole cattle skins, sheep skins, tanned furs, duvets, pillows, headboards, trainers, suits and ski suits, knitted briefs, shawls, scarves, coats, veils, veils and the like, furniture coverings, including kitchen covers, furniture covers, headrests and covers for car seats, cotton bags and sacks, embroidery with bottom decorated in pieces, ribbons or decorative motifs. Thus, after analyzing the shadow economy of the given complex of the goods listed above, the authors concluded that the damage to the state amounting to 532,527 mil. Lei was caused.

The adaptation by the author of the input-output model for the situation of the Republic of Moldova allows keeping the correct record of the flow of economic goods, and based on them, the correlation between the branches of industry that can serve in the future for other types of analysis. In the case when the balance in the correlations between the branches is distorted, it will serve as a reason for the intervention of the public authorities. The research carried out using this model approach allow the authorities to make a short- and medium-term forecast for some branches of economy.

5. Conclusions

One of the main functions of the input-output model is to estimate the main macroeconomic indicators and to evaluate the shadow economy. It can be used as an indirect method of assessing a country's economic situation, including by identifying the elements of the shadow economy. An advantage of this model is that it allows the identification of concrete branches or economic activities in which there are signs of the presence of a shadow economy. In addition, the advantages of this model are: possibility of adapting it to the economy of the Republic of Moldova, availability of statistical data that allow work within this model, and the lack of specific costly software needed to use it. At the same time, the widespread use of the model globally allows

comparisons to be made regarding the economic situation of different countries.

Of course, this model also has a number of shortcomings, which can be reduced to the possibility of a margin of error due to the fact that the services sector cannot be covered by that model, as well as the need to constantly update statistical, financial, fiscal and technical data (taking into account the technological evolutions within the enterprises), as the accuracy of the given model depends a lot on the number of specialists involved in the work on data analysis, both at the stage of their introduction and database formation, and at the stage of analysis of results.

The input-output methodology allows us to estimate the losses of the state budget based on the assessment of the volume of hidden production, shadow import and export of economic goods within the industry, using official import and export tariffs and prices for a certain period.

According to estimates, losses of the state budget in 2018 amounted to about 5744.851 million lei or 3.02% of GDP. The agro-industrial complex registered the highest detected values of the shadow economy. These are determined by the greater possibility of leaving the control area by the competent authorities, as well as the imposing presence of peasant households, including small ones, which comply partially or not at all with the rules for submitting tax and statistical declarations and reports. The same situation is present in the other complexes but with different values and shares.

We mention, however, that compared to 2017, the estimated value of the shadow economy is lower. At the same time, the method did not involve the calculation of other economic activities, such as the services sector, the banking sphere, etc., as well as the analysis of the salaries of the categories of personnel involved in production activities, where “envelope” remuneration is still present.

Following the made conclusions, the author comes with a series of recommendations for estimating the shadow economy in the Republic of Moldova:

- In order to conduct a reliable research and bring the result as close as possible to the real situation in the economic sector, it is often recommended to use several cumulative methods.
- The academic environment should pay more attention to researching this phenomenon, by creating strategic

partnerships with such public institutions as the Customs Service of the Republic of Moldova, the State Fiscal Service, the National Bureau of Statistics, the Ministry of Economy and Infrastructure, etc. for more in-depth and comprehensive research on the methodology for assessing the shadow economy.

- Following the analysis through the input - output model, there can be observed the moment when consumption prevails over resources, thus detecting the phenomenon of the shadow economy. At the same time, the source of the excessive consumption, necessary to identify the starting point for the emergence of the shadow economy, cannot be traced exactly up to the economic agent who produced or imported the given good. The introduction of a digitization system of data on the appearance and movement of economic goods as their physical volume and not only monetary, the economic agent being responsible for the given goods, will not only detect the appearance of hidden goods, but also will contribute to a stricter record of economic goods, which will significantly facilitate the collection of data for more accurate statistics and create new opportunities for their analysis.

The author also developed a series of proposals to fight with the phenomenon of the shadow economy:

- Stability of the system of taxation and fiscal procedures. Due to the frequent changes in tax legislation, the economic entity, especially small SMEs, being directly managed by the administrator who also combines the function of accountant, finds it difficult to stay connected to all changes in the field (for example, only in the last 2 years the VAT on the HORECA sector has been reduced from 20% to 10%, then raised to 20% and more recently, reduced to 15% or the introduction of new financial reporting tables or only small changes in their original form, but which implies that the tax reports are not presented correctly as changes are not taken into account).
- Amplifying the process of tax education for entrepreneurs. Due to the fact that the economic agent does not know well the normative and legislative framework, he/she can involuntarily resort to informal economy (informal - all units that deal with the production of goods and services that are legal but not

registered. Usually, they are small size economic agents whose target customer is individuals, are set up from their own resources, have a low level of organization and the division of production factors is not clear). Thus, it would be good for the state to intervene in a provision that requires the administration of the enterpriser to follow certain theoretical courses for a deeper education and a better knowledge of his/her obligations to record and analyze its own business and obtain a certificate of the gained knowledge. On the other hand, if, after obtaining this certificate, the entrepreneur has been found to be practicing the shadow economy, depending on its severity, the appropriate control bodies must take measures to optimize the record of the economic agent, to take measures of administrative punishment, to resort to legal constraints (such as the prohibition of the agricultural economic agent to obtain subsidies from the state), to make public the administration or employers who practice this type of activity in the media, etc.

- Transparency from the state's side regarding the accumulation and distribution of collected taxes and, where possible, the involvement of the economic agent in deciding how to manage these resources. This will encourage the economic agent to come out of the shadows.

Acknowledgement

The author expresses his gratitude to the World Federation of Scientists for funding the National Scholarship Program in the framework of which the present paper has been developed.

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Online resources

www.statistica.md

http://www.wiod.org/home

APPENDIX

Table 3

The natural input-output model for the Republic of Moldova

Product name	UM	A. RESOURCES				B. USES								
		Balance (beginning of the year)	Production	Import	Total resources	Consumption within the country			Production consumption	Totally consumed in the country	Export	Other outputs (loses)	Balance (end of year)	Total use
						By population								
						Total	Including in							
							Organized trade	Unorganized trade						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Product 1	1000 t													
Product 2	1000 t													
Product n	pieces													

Source: processing after Leontief (1925)

Table 4

The natural-value input-output model for the Republic of Moldova

		UM	INTERMEDIATE CONSUMPTION					FINAL PRODUCT								CALCULATION UP TO THE PRICE OF USE					
			Industry	Agriculture	Constructions	Other branches of production	Total intermediate consumption	Retail movement of goods	Goods on the unorganized market	Loses	Import	Export	Stock variation	Total	Total production	Total	VAT	Wholesale discount	Transport expenses	Commercial discount	Excises
A	B	C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Product 1	1.000 lei																			
		mil.kw/t																			
2	Product 2	1.000 lei																			
		mil.Gkal																			
3	Product n	1.000 lei																			
		1000 t																			

Source: processing after Leontief (1925)

Table 5

Losses of the state budget within the Agro-Industrial Complex, 2018

	Deviations	Price	Normative, 2018				Excise	Custom duty	VAT	Excise + Custom duty + VAT	Custom services	State loses
			VAT %	Excise		Custom duty %						
1. Groats, thousands t	11,35	8	20			0,15		13,62	20,89	34,52	0,03	34,55
2. Cheese and cottage cheese, thousands t	1,74	65	20			0,1		11,34	24,94	36,28	0,04	36,31
3. Cognac, thousands dal	360,14	670	20	94,63	lei/l alc.abs	0,5 euro/l alc. abs.	141,12	14,8	79,44	235,36	0,24	235,59
4. Tobacco products bil. pieces	4,61	245	20	0,41		3 euro/1000 pieces	462,97	274,39	373,3	1110,67	1,11	1111,8
5. Ethyl alcohol, mil. dal	1,58	111,3	20	94,63	lei/l alc.abs	0,5 euro/l	619,5	156,87	190,5	966,84	0,97	967,81
6. Combined feed, thousands t	70,38	3	20			0,05		10,56	44,34	54,9	0,05	54,95
7. Etheric oil, t	16	1100	20			0,05		0,88	3,7	4,58	0	4,58
8. Perfumery and cosmetic articles, mil. lei	303,78		20	0,3		0,07	91,13	19,75	82,93	193,81	0,19	194,01
Total												**2639,6**

Source: based on NIER Annual Report, 2020

Table 6

Loses of the state budget within the Complex of Machine Building Industry, 2018

	Deviations	Price	Normative, 2018			Excise	Custom duty	VAT	Excise + Custom duty + VAT	Custom services	State loses
			VAT %	Excise	Custom duty %						
1. Electrical household appliances, thousands pieces	1057,5	3024,5	20		8		255,87	690,86	946,73	0,947	947,68
2. Video recorders or reproducers., thousands pieces	210,9	3754	20		10		79,2	174,2	253,4	0,3	253,6
3. Jewelry , thousands lei	149,04		20	39,27	10	26,1	14,9	38	79	0,1	79,1
4. Transformers <=16KVA, thousands pieces	11799,2	14,6	20	lei/gr	5		8,6	36,1	44,7	0,04	44,8
5. Parts and accessories for cars- metal cutting tools., millions lei	3,98		20		5		0,0002	0,00004	0,00024	0	0,0002
Total						**26,1**	**358,6**	**939,2**	**1323,8**	**1,3**	**1325,1**

Source: based on NIER Annual Report, 2020

Table 7

State loses in the Heavy Industry Complex 2018

	Deviations	Price	Normative, 2018			Excise	Custom duty	VAT	Excise + Custom duty + VAT	Custom services	State loses
			VAT (%)	Excise	Custom duty (%)						
1. Medicines, mil. Lei	463,8		8,0					37,1	37,1	0,5	37,6
2. Furniture, mil. Lei	230,1		20,0		0,1		23,01	46,0	69,0	0,2	69,3
3. Diesel, 1000 T	82,2	10,2	20,0	2092		172		201,4	373,4	0,8	374,2
4. Gasoline, 1000 T	87,3	13,9	20,0	4961		433		328,5	761,3	1,2	762,5
Total						**605**	**23,01**	**613,05**	**1240,87**	**2,74**	**1243,61**

Source: based on NIER Annual Report, 2020