Vadyba
Journal of Management
2019, № 1 (34)
ISSN 1648-7974

FACTORS INFLUENCING THE LEVEL OF SHADOW ECONOMY IN LITHUANIA

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Abstract
The shadow economy is an important indicator of the economy. The shadow economy is a multidimensional and ambiguously valued phenomenon, determined not only by economic but, to a large extent, both socio-psychological, legal and administrative factors. In practice, the main causes of this shadow economy are the following: tax burden, regulation, income and living standards, state support system, quantity and quality of public services, corruption, trust in authorities and institutions. The scale of the shadow economy varies considerably between European countries. It is estimated that the largest scale of the shadow economy is in Central, Eastern European and Southern European countries. The lowest in Western Europe and the Scandinavian countries. The purpose of this article is to evaluate factors influencing the level of shadow economy in Lithuania. Calculated in 2002-2010 Lithuania's relative dynamic indicators of the shadow economy, based on different methodologies, show that 20-33% of the Lithuanian economy is created in the shadow economy based on the countries added value.
KEY WORDS: shadow economy, measurement of shadow economy, factors.

Introduction

The general public, academics, politicians, and control bodies around the world are discussing the shadow economy at national, European and international levels. However, despite the high interest, there is still no agreement at national or international level on the common terminology, content and structure of this phenomenon, as well as the reasons for this phenomenon. The relevance of the shadow economy as a scientific problem is linked to one of the most important macroeconomic indicators - gross domestic product (GDP) - inaccuracy, as well as the non-collection of planned revenue from the consolidated budget. According to Kochetkov (2015) gross domestic product (GDP) is the main indicator in the system of national accounts. Shadow economic activity adversely affects the country's small and medium business, has a significant impact on the formation of the state budget, reduces the motivation of honest workers to work in the official market, increases the tolerance of the illegal goods and highlights the phenomenon of bribery and abuse service, which are inseparable from shadow agreements.

The shadow economy is like a public protest showing that the country's economic system is not working properly. The growing shadow economy is spreading discrepancies between government decisions and people's expectations, between taxes and regulation, and people's standard of living.

According to Schneider (2015), the underlying driving forces in the shadow economy are indirect taxes, followed by self-employment and unemployment. According to Dobovšek and Slak (2017), different subcategories should be used to distinguish different forms of manifestation in the shadow economy. According to Žukauskas (2009), the shadow economy usually occurs when the laws restrict human activity. According to Vousinas (2017) tax evasion is inseparable from the shadow economy. According to Vilkas (2002), the shadow economy distorts official statistics, so the policy based on it can become unreliable or simply irrational. Quintano and Mazzocchi (2015) argue that the effects of the shadow economy can be reduced in several ways related to asset, tax burden and co-regulation. According to Bose et al. (2012), the efficiency of the banking sector is related to the reduction of the size of the shadow economy in the country. According to Roy (2017), official economic growth, coupled with a decrease in unemployment and an increase in "formal" employment, would help reduce the global economy's shadow economy. According to Pocius (2015), different ways of calculating the results of a shadow economy can vary greatly, so it is very difficult to choose the most appropriate calculation methodology.

The scientific research problem: which factors influence the level of shadow economy?

The main aim of the article to evaluate factors influencing the level of shadow economy in Lithuania.

Research methods: literature review, statistical data analysis, regression, correliation.

Literature review

The shadow economy began to be discussed and addressed in the 1990s, in the mid-1990s, during the Great Economic Crisis. The shadow economy as a phenomenon has started to be highly updated in 2008, which began during the economic crisis. This topic is being discussed at the scientific and practical level, and various studies are conducted.

Despite the relevance of the problem, there is still no agreement at national or international level on the common terminology and concepts that define the shadow economy as a phenomenon, its content and structure.

The shadow economy, as a term in the literature, was first mentioned in the German language schattenwirtschaft, and later was used in other terms. According to Ahmed et.al (2007), the terms black economy and black work were first introduced in 1970. Italian literature was mentioned in the literature - *nero lavoro*, and in German - *schwarzarbeit*.

Although the shadow economy is widely debated around the world, there are no concepts of a well-established shadow economy. The following shadow economy terms are identified: underground, informal, illicit, illegal, hidden, unobserved, unrecorded, black, and many others. In practice, the concept of a shadow economy is often synonymous with the concept of an officially unrecognized economy. However, according to Schneider and Enste (2000), the concepts of a shadow economy and an officially unrecognized economy are not identical, as the shadow economy is associated only with the unlawful activity of economic operators without giving an interest in economic meaning. Meanwhile, an officially unrecognized economy involves only activities that create services and goods on the market. Also, an officially unrecognized economy is not simply a violation of law.

Most often, the shadow economy is interpreted in different perspectives. Table 1 presents several concepts of the shadow economy, based on the statistical, legal, criminal economics and state revenue.

Table 1. The concept of a shadow economy based on different perspectives

View	Summarized concepts of the shadow economy
Statistical (officially unrecognized economy)	Part of gross domestic product (GDP) that can not be directly measured using official data sources in line with the requirements of the European Commission in order to ensure the completeness and comparability of GDP.
Legal	Everything that is done to obtain financial and non-financial benefits, in breach of legal provisions.
Criminal economics	The processes occurring both in regulated, unregulated or prohibited activities and covering the entirely opposite legal activities that generate unlawful financial resources.
State Revenue (Tax)	The processes that are taking place in the regulated market, which adversely affects the tax revenue of the state and encompasses opposite legal activities that avoid tax obligations or other unlawful tax benefits.

(Source: own)

From the table below, we see that the concept of shadow economy differs from each of the approaches, because the concept is interpreted differently in different areas. The statistical approach relates the shadow economy to the GDP share, while the legal approach identifies the shadow economy as an illegal activity that is carried out of violation of the law. According to Schultzová (2017) tax revenues in all European Union countries represent the most important source of income.

Friedrich Schneider is one of the most famous scholars of the shadow economy, also known as the "guru" of the shadow economy, who presents a rather comprehensive definition of the shadow economy. Schneider (2015) provides the following definition of the shadow economy: the shadow economy is the whole production of goods and services, the provision of services that is concealed from the authorities in pursuit of the following objectives:

1. Avoid added value to the revenue and other taxes to the budget;
2. To avoid paying social security contributions;
3. To avoid compliance with certain standards (eg minimum wage, security, etc.);
4. To avoid compliance with various administrative procedures.

According to Schneider (2015), the definition of a shadow economy should exclude:

1. Underground activities are illegal acts that meet the standard characteristics of classical crimes (theft, drug trafficking, robbery);
2. An informal economy of households - it covers a variety of household activities, activities that are not formally governed by specific national legislation.

In the literature, when analyzing the shadow economy as a phenomenon, there is a rather high interest of scientists in the calculations of the size of the shadow economy, and many studies are being carried out to determine the "shadow" lower and upper limits in the world in certain periods.

However, according to Professor Schneider (2015), "the interest in calculating the size of the shadow economy, and not in it's other aspects, can be explained in a very simple way - to identify the exact causes of the economic shadow of the country expensive and complex social and microeconomic studies are needed, but shadow" size can be calculated using simpler macroeconomic methods that require less resources; journalists tend to publicize easy-to-understand information on simple content, otherwise they will not receive or receive insufficient public interest. For people numbers and percentages are much simpler to interpret than complex data requiring in-depth knowledge of economic science." Table 2 presents the main reasons Schneider and Buehn (2016) suggests is the shadow economy. The author justifies these reasons by theoretical arguments.

Table 2. Main reasons that causes shadow economy

Reason	Theoretical arguments
Tax and social security contributions	The distortion of the overall tax burden has an impact on leisure time and can stimulate labor supply in the shadow economy.The greater the difference between total labor costs in the formal economy and the loss of earnings (from work), the greater the incentive to reduce the tax burden and work in the shadow economy. This tax barrier depends on the burden of social security / payments and the overall tax burden, which is why it is a major factor determining the existence of a shadow economy.
The quality of state-	The quality of public institutions is another key factor in the development of the shadow econ-

owned enterprises	omy. First of all, the effective and discretionary application of the tax code and government regulations is decisive in the decision to work informally, i.e. avoiding paying taxes. The large bureaucracy of corrupt government officials is mostly related to more informal activities, and ensuring good law-enforcement state through the enforcement of secure property rights and contracts increases the merits of official status. Probability of the development of the non-formal sector due to the failure of political institutions to promote an efficient market economy, and the number of entrepreneurs who do not pay taxes can be reduced.
Regulation	Regulations such as labor market rules or barriers to trade are another important factor in reducing the freedom (choice) of individuals in the formal economy. They lead to a significant increase in labor costs in the formal economy and thus give one more incentive to work in the shadow economy: countries that are tighter regulated tend to have a larger share of the shadow economy from total GDP.
Public sector services	Increasing the shadow economy may reduce government revenue, which in turn will reduce the quality and quantity of public goods and services. Lastly, it can increase tax rates for businesses and individuals, although public goods (such as public infrastructure) and administration may continue to deteriorate. The result is an even stronger incentive to participate in the shadow economy.
Tax morality	Public sector efficiency also has an indirect impact on the size of the shadow economy, as it affects tax morale. Tax compliance is based on a psychological tax treaty consisting of the rights and obligations of taxpayers and citizens as well as the state and its tax authorities on the other hand. Taxpayers are more likely to honestly pay their taxes if they get valuable public services in exchange. The tax authority also treats taxpayers. If taxpayers, as partners (tax) contracts, follow hierarchical relationships on the site of their subordinates, taxpayers will be more likely to fulfill the obligations of the psychological tax convention.
The evolution of the official economy	Another important factor in the shadow economy is the development of the official economy. The higher (lower) the unemployment rate (GDP growth), the greater the incentive to work in the shadow economy.
Self-emplymen t	The higher the level of self-employment, the more activities can be done in the shadow economy.

(Source: Schneider and Buehn, 2016)

According to Senavaitytė (2011) existance of shadow economy distorts official economy indicators, like GDP, unemployement rate, due to that political economy descisions cannot be as effective. Besides, shadow economy has impact on many economic processes: income collecting and allocation, tax system development, fair competition, selling and investment, economical growth. It means, that in order to make proper political - economy descisions, correct information about shadow economy, it‘s rate and consequences is neccesarry. The analytical part of this article will try to find out which of the chosen macroeconomic factors has biggest influence for shadow economy magnitude. Makroekonomical factors are basic indicators foretelling country‘s economical state. In the analytical part of the article for defying macroeconomical factor impact to shadow economics will be used chosen macroeconomic indicators.

Methodology and data

In this article, the absolute and relative indicators collected from various official sources are used to assess the level of the shadow economy. Absolute statistical indicators describe the social phenomenon as the number of units of the whole, or the numerical value of its attributes. Absolute statistical indicators are always expressed by some unit of measure. Meanwhile, relative statistical values show the intrinsic quantitative relationships between particular social phenomena and processes. The size of the shadow economy was calculated on the basis of monetary methods: the money demand method and Gutmann's monetary method.

In order to determine which of the components of the shadow economy: corruption, smuggling or money laundering has a major impact on the model of multiple linear regression (MLR) for the shadow economy. Also, the linear multi-regression model will be used to determine which of the theoretical part of the country's macroeconomic indicators has the most impact on the shadow economy. According to Bagdonas (2009), the model of linear regression is a generalization of one variable linear regression model in which there are more than one variable.

Hypothesis. Higher level of smuggling are associated with a higher level of shadow economy.

Hypothesis. Higher GDP per capita is associated with a lower level of shadow economy.

According to Čekavicius and Murauskas (2015), a good regression model is that the determination coefficient R^2 is greater than or equal to 0, 20 and the ANOVA p value is lower than the chosen level of significance, which is chosen in this study 0, 05.

Descriptive Statistic

Figure 1 shows the 2002-2010 period Lithuania's relative dynamic of the shadow economy, calculated on the basis of monetary demand and Gutmann's monetary method.

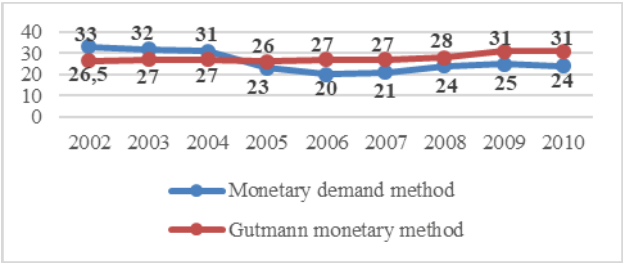

Fig. 1. The relative dynamic indicators of the shadow economy in Lithuania, calculated according to different methodologies (Percentage).
(Source: own)

According to Senavaitytė (2011), the shadow economy indicator, after applying Gutmann's monetary model,

quite accurately reflects trends in general changes in change. By 2005 when the country's economy grew, according to Gutmann's monetary calculation method, the share of the shadow economy declined in GDP. However, during the economic downturn, the growth of the shadow economy was noticeable, and it was also noticeable a few years before the crisis.

In order to determine the relationship between the shadow economy and the selected variables, the Pearson correlation coefficient was calculated. The Pearson correlation coefficient allows determine the different variables (strong, weak, positive, and negative). Regression analysis allows one variable to be predicted for another variable. **Table 3** shows the correlation analysis of shadow economy variables.

Table 3. Correlation analysis of variables of the shadow economy

	Shadow econonomy (% of GDP)	Corruption	Smuggling	Money laundering
Shadow econonomy (% of GDP)	**1**	0,15	0,93	-0,87
Corruption	0,15	**1**	-0,10	-0,24
Smuggling	0,93	-0,10	**1**	-0,90
Money laundering	-0,87	-0,24	-0,90	**1**

(Source: own)

The Pearson Correlation Coefficient allows to estimate the strength of the linear coupling between variables. How this factor is closer than 1, the linear relationship between variables is stronger. From the table below, we see that a very strong linear positive relationship correlates between the size of the shadow economy and smuggling, with a correlation coefficient of 0, 93. There is also a very strong negative link between money laundering and smuggling, a correlation coefficient of -0, 90, and a shadow economy and money laundering, with a correlation coefficient of -0, 87. Very weak negative correlation is between corruption and money laundering, the correlation coefficient is -0, 24 and smuggling and corruption, the correlation coefficient reaches just -0, 10. A very weak but positive correwlation is between shadow economy and corruption, here the correlation coefficient is equal to 0, 15.

Hypothesis testing. After calculating the values of the suitability of the shadow economic variables, we obtained a Significance F value of 0, 04. α is the materiality level chosen in this case, which is equal to 0,05.

Table 4. Values of the variables of the shadow economy

ANOVA					
	f	*SS*	*MS*	*F*	*Significance F*
Regression		7,11	2,37	21,96	0,04
Residual		0,23	0,11		
Total		7,33			

(Source: own)

Since p = 0,04 < 0, 05, H_0 is rejected, due to the fact that there is a statistically significant linear relationship between the shadow economy and corruption, smuggling and money laundering.

Regression model evaluation. After checking the hypothesis, the determination coefficient R^2 is calculated. Determination coefficient shows the significance of the independent variable, in this case, of the shadow economy for all three dependent variables - corruption, smuggling and money laundering. Table 5 presents a summary of the linear regression model indicators, which shows how the dependent variables explain the change in the independent variable (shadow economy).

Table 5. Summary of indicators of the linear regression model of the shadow economy

Regression Statistics	
Multiple R	0,99
R Square	0,97
Adjusted R Square	0,93
Standard Error	0,33
Observations	6

(Source: own)

From the table below we can see that the calculated coefficient of determination is equal to 0, 9851. The literature states that the higher the coefficient value, the model is better suited for the data. If R^2 = 0, 89, one can assume that the model describes the data very well. In this case, the estimated R^2> 0, 89, therefore, it can be stated that the linear regression model is valid.

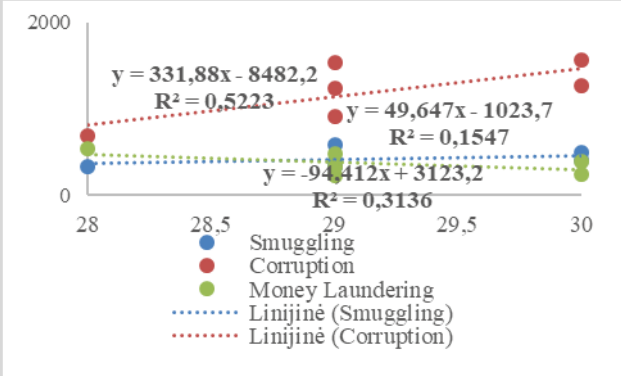

Fig. 2. Linear regression equations for shadow economy factors
(Source: own)

Based on the linear regression equation for the shadow economy, we can see that the regression equation cannot be applied to smuggling, since the determination coefficient R^2 is only 0, 1547. Based on the corruption equation written, the regression equation can be applied, since the determination coefficient R^2 is 0, 5223, which means that the shadow economy is directly affected by corruption, corruption in this case increases the shadow economy according to the equation obtained. The estimated money laundering determination coefficient R^2 is

0, 3136, which means that money laundering also affects the shadow economy.

The study found that smuggling had the greatest impact on the shadow economy, since the calculated coefficient of determination was 0, 8721. The Pearson correlation coefficient was calculated to determine which of the selected macroeconomic indicators most influenced the size of the shadow economy. The values of the selected shadow economy variables are presented in Table 6.

Table 6. Selected macroeconomic factors and their meanings for correlation coefficient estimation

	Size of shadow economy (% of GDP)	Average unemployment rate (%)	Annual inflation rate (%)	Average salary, before taxes (Eur)	GDP per capita (thsd EUR)	Number of enterprises in operation at the beginning of the year (thsd)	Export of goods (billion Eur)	Import of goods (billion Eur)	Tax burden (% of GDP)
Year	**Y**	**X_1**	**X_2**	**X_3**	**X_4**	**X_5**	**X_6**	**X_7**	**X_8**
2007	29	4,2	8,1	547,8	8,89	60,094	12509	17,813	30
2008	30	5,8	8,5	653,6	10,14	63,561	16077	21144	30,6
2009	30	13,7	1,3	624,6	8,43	65,629	11797	13123	30,2
2010	29	17,8	3,8	600,2	8,95	66,838	15651	17653	28,5
2011	29	15,4	3,4	613,3	10,22	62,889	20151	22826	37,4
2012	28	13,4	2,8	629,5	11,03	65,779	23047	24879	27,2
2013	28	11,8	0,4	661,2	11,7	68,279	24545	26208	27,2
2014	27	10,7	-0,3	691,1	12,4	67,670	24361	25889	27
2015	26	9,1	-0,1	726,4	12,9	76,427	22904	25399	29,2
2016	26	7,9	1,7	784,4	13,5	79,840	22609	24836	30,1
2017	26	7,1	3,9	848	14,03	83,256	26429	28763	30,7

(Source: own)

The Pearson Correlation Coefficient allows you to determine the varying dependencies between variables (strong, weak, positive, and negative). Regression analysis allows one variable to be predicted against another variable. The Pearson Correlation Coefficient allows you to estimate the strength of the linear coupling between variables. How this factor is closer than 1, the linear relationship between variables is stronger.

Table 7. The correlation between the shadow economy and selected macroeconomic factors

	Average unemployment rate (%)	Annual inflation rate (%)	Average salary, before taxes (Eur)	GDP per capita (thsd EUR)	Number of enterprises in operation at the beginning of the year	Export of goods (billion Eur)	Import of goods (billion Eur)	Tax burden (% of GDP)	Size of shadow economy (% of GDP)
Average unemployment rate (%)	**1**								
Annual inflation rate (%)	-0,4384	**1**							
Average salary, before taxes (Eur)	-0,3242	-0,3525	**1**						
GDP per capita (thsd EUR)	-0,3393	-0,4452	0,9036	**1**					
Number of enterprises in operation at the beginning of the year	-0,2309	-0,4103	0,9513	0,85166	**1**				
Export of goods (billion Eur)	-0,0401	-0,5380	0,7140	0,89977	0,6481	**1**			

Import of goods (billion Eur)	0,1931	-0,5551	0,7020	0,7604	0,60 74	0,8658	1		
Tax burden (% of GDP)	0,0778	0,2960	-0,0665	-0,1589	-0,11 96	-0,1912	-0,0878	1	

Size of shadow economy (% of GDP)	0,2807	0,4900	-0,8385	-0,9355	-0,8786	-0,8111	-0,5909	0,2158	1

(Source: own)

From Table 7 we can see that a strong negative affinity relates to the shadow economy and: 1. GDP per capita, correlation coefficient is -0,9355; 2. Number of enterprises in operation in Lithuania, the correlation coefficient is -0,8786; 3. The average salary, correlation coefficient is -0,8385; 4. The export of goods has a correlation coefficient of -0,8111.

The average negative relationship relates to the shadow economy and import of goods, the correlation coefficient is -0, 5909. The weak positive relationship links the shadow economy and the following macroeconomic indicators: the annual inflation rate 0, 49, the unemployment rate 0, 2807 and the tax burden 0, 2158.

Hypothesis testing. After calculating the values of the suitability of the shadow eco-nomic variables, we obtained a Significance F value of 0,044. α is the materiality level chosen in this case, which is equal to 0,05.

Table 8. The relevance of the macroeconomic indicators of the shadow economy

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	25,89332	3,236665	19,3842	0,04996707
Residual	2	0,333949	0,166974		
Total	10	26,22727			

(Source: own)

Since p = 0, 04996707 < 0, 05, H_0 is a rejection because there is a statistically significant linear relationship between the shadow and selected macroeconomic indices.

Regression model evaluation. After checking the hypothesis, the determination coefficient R^2 is calculated. Determination coefficient shows the significance of the independent variable, in this case, of the shadow economy for all three dependent variables - corruption, smuggling and money laundering. Table 9 presents a summary of the linear regression model indicators, which shows how dependent variables explain the change in the independent variable (the shadow economy).

Table 9. Summary of indicators of the linear regression model of the shadow economy

Regression Statistics	
Multiple R	*0,993613*
R square	*0,987267*
Adjusted R Square	*0,936336*
Standart Erorr	*0,408625*
Observations	*11*

(Source: own)

From the table below we can see that the calculated de-termination coefficient is equal to 0, 98. The literature states that the higher the coefficient value, the model is better suited for the data. If R^2 = 0, 89, one can assume that the model describes the data very well. In this case, the calculated R^2 > 0, 98, therefore, it can be argued that the linear regression model is valid. In this case, 98% Changes in the size of all shadow economy can be explained by changes in selected macroeconomic factors. We will map out 3 macroeconomic factors that have the most influential factors.

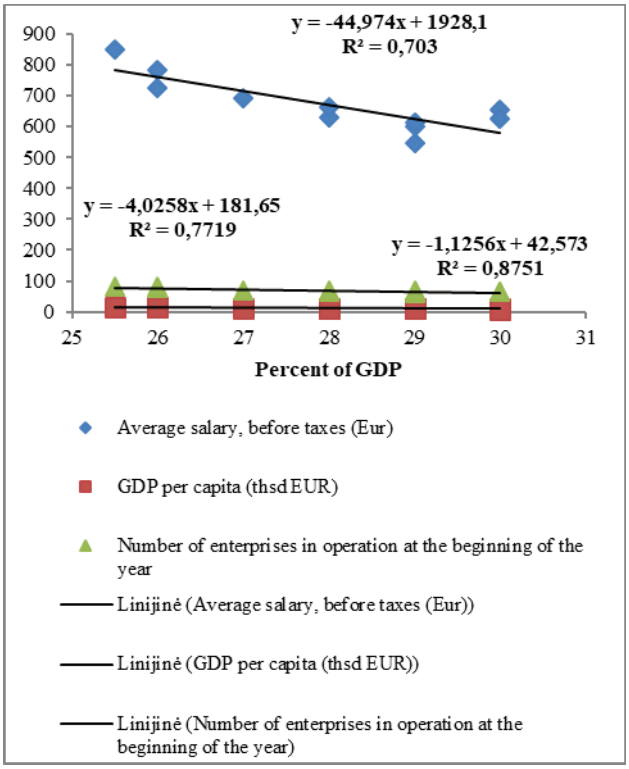

Fig. 3. Linear regression equations for macroeconomic factors
(Source: own)

Based on the linear equation of the shadow economy, we can see that for all three chosen macroeconomic factors we can apply the regression equation, since the determination coefficient is near 1. From the picture presented, we notice that 87, 5% the change in the size of the shadow economy is explained by the change in GDP per capita in Lithuania. As much as 77% the change in the size of the shadow economy can be explained by changes in the

operating companies in Lithuania, and by 70% - changes in the average salary.

Discussion

According to various sources, the relative indicators of the shadow economy dynamics yield different results, since different variables are included, and different assumptions are made to calculate the size of the shadow economy. According to various studies, the size of the shadow economy in Lithuania can be about 15-30% gross domestic product.

Lithuanian Statistics Department submits quarterly gross domestic product (GDP) assessment, which includes shadow economy. However, there is no official information on the methodology for calculating this indicator. The lack of this information, which creates distorted reality, creates unreliable trust as the official statistics.

According to Vytautas Žukauskas, expert of the Lithuanian Free Market Institute, measurement of things that are not measurable is really complicated, full of methodological problems and very inaccurate. One can criticize the methodology of the evaluation of the Shadow Economy of Statistics Lithuania, but it can equally be criticized for any other methodology, because its imperfection arises from the shadow economy itself, as it is impossible to directly estimate the phenomenon. However, the fact that there is not and non accurate calculation the size of the shadow economy does not mean that the existence of shadow economy can be ignored or the fact that it varies under the influence of various factors. Whatever the methodology of shadow valuation, there will always be a different kind of assumption than the assessment of GDP volumes, which has its own flaws. Statistics Lithuania can not and will not be able to measure the shadow with the same accuracy as the officially accounted "transparent" economy. Therefore, the assertion that the GDP indicators published by Statistics Lithuania also assess the scale of the shadow economy is misleading. It gives the impression that the GDP indicator is indisputable and objective, accurately and clearly demonstrating the economic situation. This is not the case. GDP, like all other statistical indicators, has its disadvantages, and part of the shadow economy is one of them. Perhaps if it were directly declared and disclosed, doubts would be placed on the reliability of national accounts, more attention would be given to the shadow, to the analysis of government decisions. According to the expert, there are other more reliable ways to analyze them: not by quantity, but by explaining their causes and consequences.

Conclusions

The shadow economy is a multidimensional and ambiguously valued phenomenon, determined not only by economic but, to a large extent, both socio-psychological, legal and administrative factors. In practice, the main causes of this shadow economy are the following: tax burden, regulation, income and living standards, state support system, quantity and quality of public services, corruption, trust in authorities and institutions.

Based on the analysis of the correlation between the components of the shadow economy, it was observed that a very strong linear relationship links the shadow economy and c, since the calculated correlation coefficient is equal to 0, 93. A strong negative link relates to the size of the shadow economy and money laundering. Also, a very strong negative connection relates to money laundering and counter-herds, here the correlation coefficient is -0, 90. A very weak negative affinity affects corruption and money laundering, the correlation coefficient is -0, 24, and smuggling and corruption, the correlation coefficient reaches just -0, 10. A very weak but positive affiliation links the shadow economy and corruption, here the correlation coefficient is equal to 0, 15. Calculating the values of the suitability of the shadow economy variables, the p value obtained is 0, 044, which means that there is a statistically significant linear relationship between the shadow economy and co-operation, smuggling and money laundering. The calculated coefficient of determination is 0, 9851 therefore it can be stated that the linear regression model is suitable for the analysis of components of the shadow economy. By writing the linear regression equation for the shadow economy components, it was obtained that smuggling makes the largest impact on the shadow economy, since the calculated determination coefficient is equal to 0, 8721, which means that as the growth rate increases, the shadow economy, so the hypothesis can be expanded.

Based on the correlation between the chosen macroeconomic factors and the size of the shadow economy, the correlation between the strong negative affinity: the shadow economy and GDP per capita, the coefficient of correlation is -0, 9355 the number of enterprises operating in Lithuania, the correlation coefficient is -0, 8786 the average labor the correlation coefficient is equal to -0, 8385, and the export of goods, the correlation coefficient reaches -0, 8111. The average negative relationship relates to the shadow economy and import of goods, the correlation coefficient is -0, 5909. The weak positive relationship links the shadow economy and the following macroeconomic indicators: annual inflation rate 0, 49, unemployment rate 0, 2807 and tax burden 0, 2158. The estimated determination coefficient is 0, 9936, which indicates that the regression model is suitable for analyzing the influence of macroeconomic factors on the size of the shadow economy. By writing the linear regression equation, it has been obtained that the macroeconomic indicator - GDP per capita has the biggest impact on the shadow economy, and therefore the hypothesis can be confirmed - the higher per capita GDP is associated with a lower level of the shadow economy.

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RECEIVED: 10 October 2018 **ACCEPTED: 5 June 2019**

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