

EFFECTS OF THE NON-OBSERVED ECONOMY ON ECONOMIC SECURITY IN THE REPUBLIC OF MOLDOVA

Alexandru STRATAN

Academy of Economic Studies of Moldova (Republic of Moldova)

alex_stratan@yahoo.com

Tatiana GUTIUM

National Institute for Economic Research (Republic of Moldova)

gutium.tatiana1@gmail.com

Larisa ŞAVGA

Trade Co-operative University of Moldova (Republic of Moldova)

savga.larisa@gmail.com

Abstract

The non-observed economy refers to economic activity that escaped state control. Economic agents have learned to circumvent the laws governing economic activity. The elements of the non-observed economy are shadow production, smuggling, informal employment, income hiding, and other types of tax evasion. Economic crimes could be divided into two groups. The first group is illegal activities caused by high taxes or inefficient legislation, and the second is activities that harm not only the country's economy but on society. One of the objectives of the research is an analysis of the main shadow sectors, including informal employment, contraventions that affect entrepreneurial activity, taxation, customs activity, and securities. Thus, a quantitative and qualitative assessment of the non-observed economy was carried out (case: Republic of Moldova). The main methods used are theoretical and empirical. The authors identified the causes of the non-observed economy and their impact on economic security and described methods to combat the shadow economy. Among the main reasons are the lack of jobs, the relatively high unemployment among young people, and inefficient legislation. One of the reasons for the non-observed economy is a way to make more money because illegal goods are rare and have a high cost. Often, the existence of a shadow economy is caused by the high level of corruption in the country. All the described cases of the non-observed economy negatively affect economic security.

Keywords: non-observed economy, informal employment, contraventions that affect economic activity

1. Introduction

The elements of the non-observed economy have a significant impact on the economy, on the performance, and the development prospects of enterprises. The shadow economy is a part of the national economy. We cannot deny that informality still produces goods and provide services. It is impossible to assess the correct level of the national economy, the level of its sectors, and the production volume of the enterprises, excluding the unobserved economy.

In current conditions, shadow activity cannot be carried out without hidden cash flows and underground financial relationships. Combating the non-observed economy has become one of the significant tasks for many countries. Some shadow activities, such as drug dealing, corruption, human trafficking, and smuggling, are recognized as threats to national economic security. Therefore, this research topic is one of the most important and relevant.

The shadow economy is characterized by dualism, which is expressed in its dual role: positive – smoothing out negative conditions for business development; negative – reduction of the tax base, diminution of state revenues, polarization of society, anti-social redistribution of society's income, a decline in its well-being, decrease in the efficiency of the economic management system. Some scientists argue that the Shadow Economy (SE) hurts economic development (Esaku, 2021; Gutium, 2020), and the others part – that it has a positive impact (Darbi and Knott, 2021; Nguyen *et al.*, 2021).

The concept of the non-observed economy at different stages of its study was interpreted using permanently introduce new terminology: informal economy (Khambule, 2022; Thulare *et al.*, 2021), unofficial economy (Mikulić, 2021), underground economy (Hoang, 2020; Huynh, 2022; Nandini *et al.*, 2020), shadow economy (Bayar *et al.*, 2020; Le and Nguyen, 2022; Safuan *et al.*, 2021). The Non-Observed Economy (NOE) is the totality of forms of economic activity not reflected in official statistics. According to the methodology applied by the National Bureau of Statistics of the Republic of Moldova (NBS RM), NOE includes “informal sector production, production of households for their own final use, hidden production of the formal sector, illegal production” (NBS RM, 2021a).

On the one hand, NOE can be characterized as a multilateral phenomenon, which changes over time as new types of shadow activity appear. On the other hand, there is no general approach to NOE in the academic community. The unobserved economy affects both the economic and social sectors and has a direct impact on the production of goods and services, income distribution, investment allocation, and job creation. At the same time, it leads to social tensions, as it increases the population polarization and the gap between rich and poor. Driving Forces for the Non-Observed Economy are informal employment (Elgin *et al.*, 2021; Polese *et al.*, 2022), taxation (Nemec *et al.*, 2021), finance constraints (Safuan *et al.*, 2021), corruption (Esaku and Tajani, 2021; Hoinaru *et al.*, 2020) etc.

Mohammed Nayel Abu Alfoul *et al.* raised an issue of importance to study the origins of shadow structures, to research the reasons that determine the Shadow Economy (SE). They analyzed the quality of institutions. The results obtained showed that the main factors influencing the SE are “the quality of bureaucracy, law and order, corruption, internal conflicts, inflation, and poverty” (Nguyen and Luong, 2020). These scientists studied the relationship between digitalization and the shadow economy and concluded that there is a negative correlation between them.

Akvazba *et al.* devoted their research to the main factors that determine the scale of the shadow economy, issues of employment in the shadow economy, the profitability of shadow activities, and the role of violence in the economic relations of society. In their work, an analysis of the sources and causes of Informal Employment (IE) was carried out. Based on the results obtained, measures were systematized to reduce the level of IE (Akvezba *et al.*, 2020).

Monica Violeta Achim and Sorin Nicolae Borlea analyzed the shadow economy, economic and financial crimes (corruption, tax evasion, money laundering). Culture, religion, tax morality, trust in the state, and happiness were studied as behavioral determinants in SE. Scientists have shown that the happier a person is, the less likely he is to engage in corrupt

activities (Achim and Borlea, 2021). In the least developed countries, it is poverty that pushes people to participate in the shadow economy.

There are a few studies on the influence of the unobserved economy on economic security. It is necessary to mention that they are mainly dedicated to studying “the impact of the shadow economy on the country’s financial security” (Meleshko *et al.*, 2021). Therefore, in this study, non-observed economy is addressed in the context of the threats it poses to the economic security in the Republic of Moldova.

2. Methodology

In this study, null hypotheses that the non-observed economy does not affect some indicators of economic security (deficit of national public budget, inflation, ratio of the average salary to the living wage, etc.) are tested using program EViews 9. The main methods used are theoretical and empirical. Data were collected from statistical databank “Statbank” of National Bureau of Statistics of the Republic of Moldova (NBS). Only data for the period 2010-2020 are available.

3. Results and discussion

3.1. Evolution of the Non-Observed Economy in the Republic of Moldova

According to the latest data statistics published by the International Labor Organization (ILO), the share of informal employment in total employment (SIE) of world is over 60% (ILO, 2018). In the Republic of Moldova, this index calculated on the basis of the stable population (SP) constituted on average 33.24% in 2010-2018. It represented 22.76% in 2019-2020 (calculated on the basis of the population with habitual residence (HR), according to the new sampling plan and according to the revised definition of employment) (Figure 1).

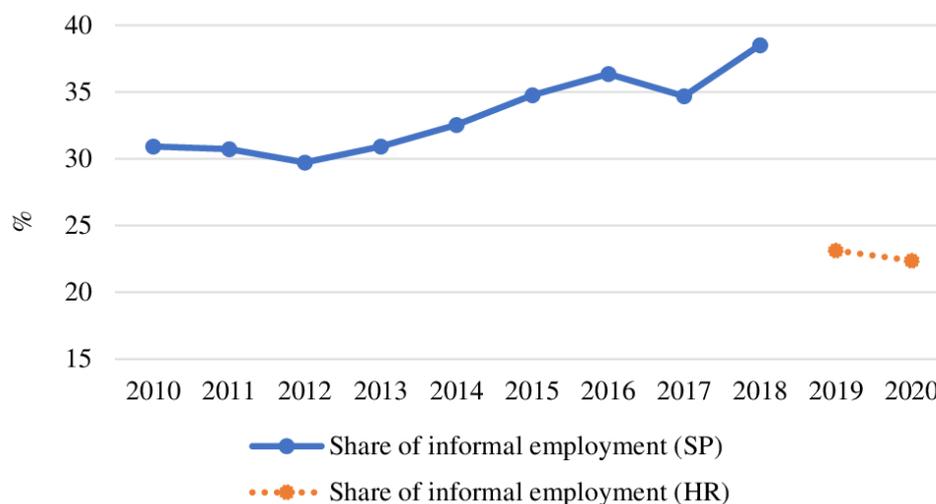


Figure 1. Evolution of the share of informal employment in total employment, the Republic of Moldova (NBS RM, 2021b)

In 2021, 16.9% of the total number of people employed in the economy worked in the informal sector, and in the previous year – 16.7%. The share of informal employment was

22.8% in 2021 and 22.4% in 2020. The highest share of people employed informally is registered in construction (65.1%) (NBS RM, 2022b).

A quantitative analysis of the size of the unobserved economy is extremely difficult, as it is largely based on indirect data. Various methods are applied in world practice. The results obtained differ from one calculation method to another. According to the statistics of NBS RM, the volume of Moldova's non-observed economy in 2020 amounted to about 27% of the GDP (Figure 2).

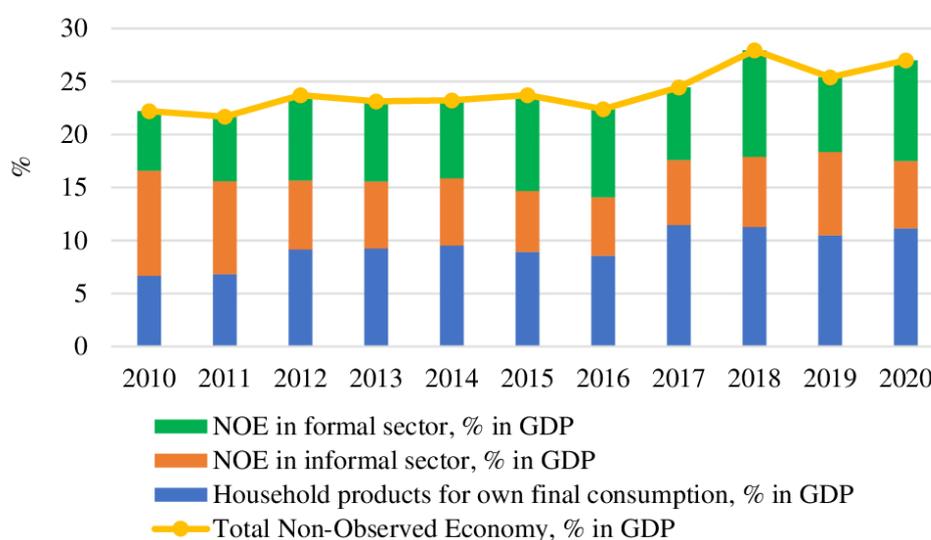


Figure 2. Evolution of Non-Observed Economy, the Republic of Moldova (NBS RM, 2021c)

During the analyzed period, the highest level of NOE share in GDP was registered in 2018. The increase of this indicator took place due to the growth of NOE in the formal sector, whose share in GDP increased by 3.2 percentage points. In the structure of the unobserved economy, the largest share belonged in 2010 to the NOE in the informal sector, and in 2020 – household products for own final consumption.

3.2. Impact of the Non-Observed Economy on Economic Security

Overcoming the impact of the unseen economy on economic security is relevant in current period, in economic and geopolitical instability. It is a common problem for most countries. The large size of the shadow sector of the national economy leads to increased threats to the country's economic security. Also, it leads to loss of stability of the economic system, making it vulnerable to external aggression, does not increase the country's competitiveness, and does not ensure sustainable economic growth.

In Moldova, no strategies have been developed and adopted by the Government to counteract the destructive effects of the shadow economy. But a legal and regulatory framework for national security has been formed, including economic security. “The Economic Security Strategy of the Republic of Moldova” was adopted in 2011.

Many reasons contribute to the development of shadow economic activity. The authors systematized rather extensive information on this issue. It has been established that the expansion of the unobserved economy is characterized by several main causes. One of the reasons is the crisis or the depressed state of the national economy, which, even without the presence of the shadow sector, creates the conditions for a threat to the country's economic

security. At the same time, during the period of depression, part of the business is forced to move into the shadow sector to avoid bankruptcy.

The causes of the expansion of the non-observed economy are increasing the burden of taxes and social security contributions, shortcomings of the country's legislation, corruption in the state apparatus, increasing the number of government regulations in the formal sector, high unemployment, declining disposable income and the well-being of the population.

The impact of NOE on economic security is dualistic. On the one hand, it has positive effects, and on the other, negative ones. Negative consequences of the influence of the shadow economy on economic security:

- the growth of the economic development of the state slows down (the physical volume index of GDP decreases compared to the previous year);
- unemployment is growing, informal employment is increasing;
- tax revenues are diminishing, as enterprises from the shadow sector and informally employed do not pay taxes;
- government revenues are declining, as the bulk of this is tax revenue. A decrease in income leads to a reduction in budget expenditures;
- the state does not have the opportunity to increase assistance to the poor;
- reduced investment income.

Positive effects of NOE influence on economic security:

- increasing the competitiveness of various goods and services, due to the reduction of costs in their production, since mandatory payments to the state treasury are not paid;
- creates conditions for bankruptcy prevention;
- stimulates the growth of employment in the informal sector;
- helps mitigate the effects of the economic and financial crisis.

It should be noted that the negative effects prevail over the positive ones.

Based on the availability of data, the time frame 2010-2020 and a set of indicators were chosen. For example, the share of investment in GDP as an indicator of economic security is not applied because the calculation methodology was changed in 2017 and the series of statistical data is discontinued in that year. The situation is the same with other indicators. The main descriptive statistics used in the study are presented in Table 1.

Table 1. Main descriptive statistics

	NOE, % in GDP	Budget deficit, % in GDP	Inflation, %	Ratio of salary to living wage, %	Ratio of fines for economic contraventions to total fines, %
Mean	24.08088	8.415996	5.787273	275.4618	8.861296
Median	23.71000	8.493298	5.100000	261.7150	8.438703
Maximum	27.95374	9.275830	9.700000	380.3390	12.48714
Minimum	21.68000	7.219069	3.050000	202.4085	5.569226
Standard Deviation	1.983816	0.647376	1.948928	59.74718	2.219692
Skewness	0.784102	-0.580003	0.532423	0.500154	0.339598
Kurtosis	2.518707	2.312304	2.517754	1.954112	2.221602
Jarque-Bera	1.233332	0.833497	0.626293	0.959979	0.489139

Probability	0.539741	0.659187	0.731143	0.618790	0.783042
Sum	264.8897	92.57595	63.66000	3030.080	97.47425
Sum of Squared Deviations	39.35527	4.190955	37.98322	35697.25	49.27031

In order to determine the correlation between the level of the non-observed economy and the economic security of the country, a comparative analysis of the trends of these indicators was performed. One of the indicators that reflects the economic security of the state is the volume of the public deficit. In the Republic of Moldova, the increase of the deficit of the national public budget is characterized by an unstable dynamic, which represents a threat to the economic security of the country and its financial stability. The evolution of budget deficit is identical the dynamics of NOE (Figure 3). The existence of the shadow sector reveals the existence of tax evasion.

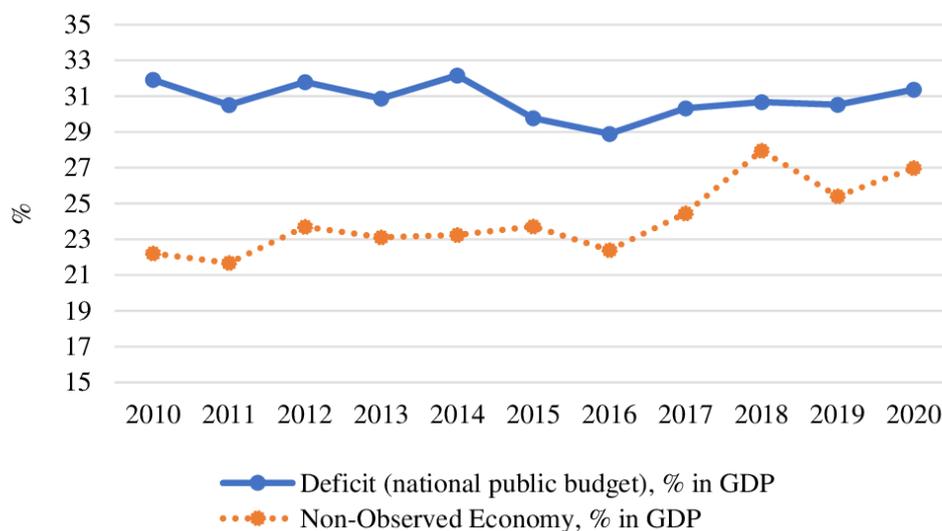


Figure 3. Evolution of Non-Observed Economy and deficit (national public budget), the Republic of Moldova (NBS RM, 2021d)

Another indicator of economic security is inflation. In 2010-2020, the lowest level of inflation was in 2018, while the NOE (% in GDP) this year reached its highest level (Figure 4). Comparing the trends of this indicator with NOE shows the absence of a direct relationship between them. The increase in NOE (% of GDP) by 2.0 percentage points in 2012 and by 3.5 percentage points in 2018 was accompanied by a decrease in inflation, corresponding to 3.0 and 3.6 percentage points. At the same time, the increase in NOE in 2014-2015 occurred during a period of increased inflationary processes in the country.

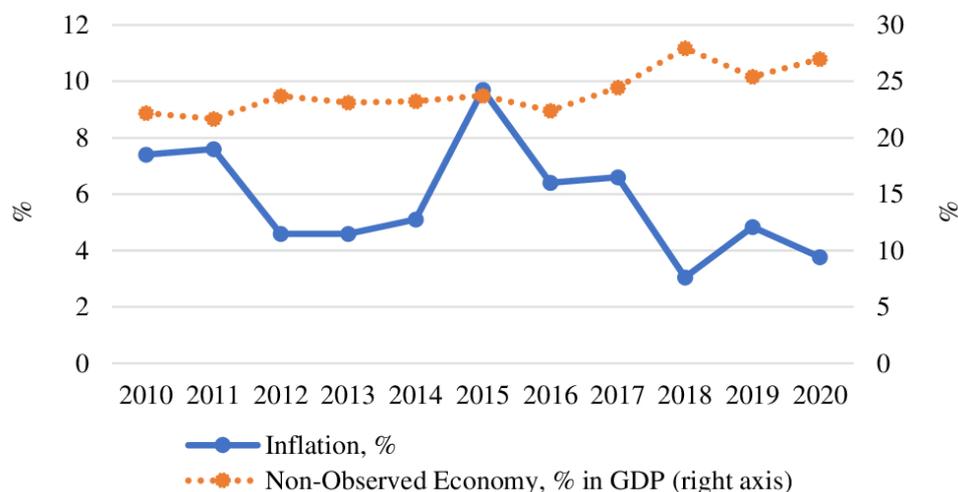


Figure 4. Evolution of Non-Observed Economy and inflation, the Republic of Moldova (NBS RM, 2021d)

The ratio of the average salary to the living wage is an indicator of economic security. It is quite sensitive to changes in the economic situation. The analysis of the change of this indicator and NOE (% in GDP) showed that in 2010-2012, 2014-2015, 2017-2018 and 2020 the signs of the modification coincide (Figure 5). This fact suggests that the correlation between these indicators will be relatively high.

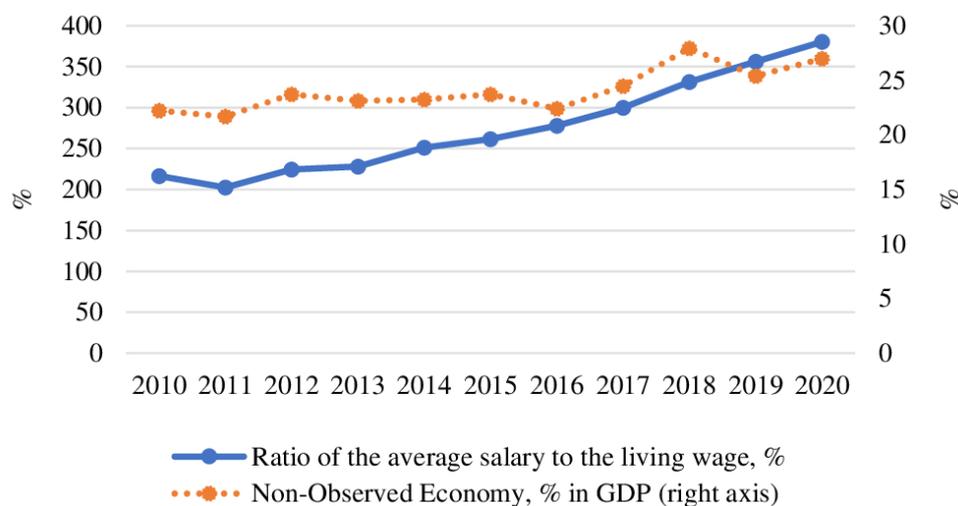


Figure 5. Evolution of Non-Observed Economy and ratio of the average salary to the living wage, the Republic of Moldova (NBS RM, 2021d)

According to the report “Detected contraventions in 2021”, in the case of contraventions which affected the entrepreneurial activity, taxation, customs and securities, 31.9 thousand contraventions were found. The main sanction for this category of contraventions was the fine (31.4 thousand fines in 2021 and 24.2 thousand fines in 2020). At the same time, for 170 contraventions the confiscation was applied, and in the case of 122 the counter-equivalent lifting of the object was applied (NBS RM, 2022a). As can be seen from Figure 6, the largest share of fines for economic contraventions to total fines were recorded in 2017, and the smallest

number in 2014. The dynamics of this indicator does not correlate with the evolution of NOE (% in GDP).

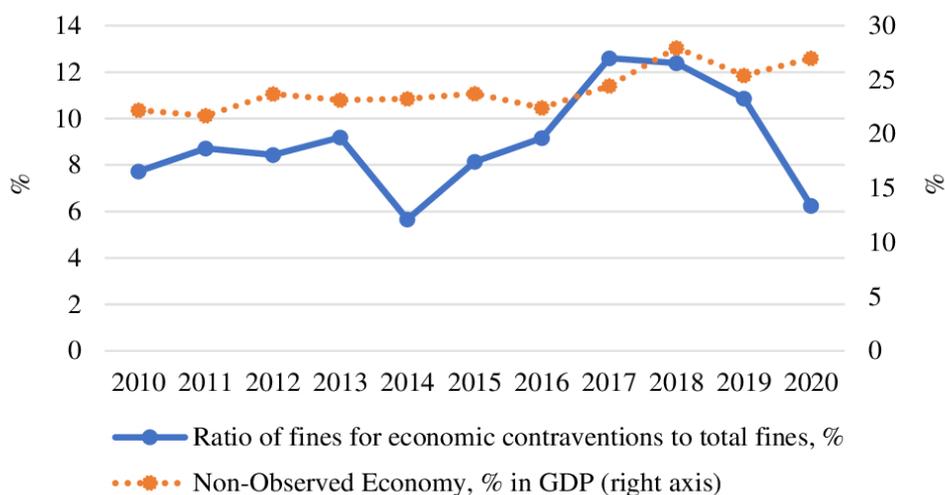


Figure 6. Evolution of Non-Observed Economy and ratio of amends for contraventions which affect (fiscality, customs, etc.) to total amends, the Republic of Moldova (NBS RM, 2021d)

To test the hypothesis about the impact of the non-observed economy on the four indicators listed in Table 1, a correlation analysis was carried out. The results are presented in Table 2. The NOE has the greatest impact on the government deficit, and also affects other indicators of economic security.

Table 2. The results of the test of influence of the Non-Observed Economy on some indicators of economic security

	t-Statistic	p-value	Conclusion
Budget deficit, % in GDP	-42.1460	0.0000	The correlation coefficient is significant
Inflation, %	-2.5528	0.0311	The correlation coefficient is significant
Ratio of salary to living wage, %	4.8841	0.0009	The correlation coefficient is significant
Ratio of fines for economic contraventions to total fines, %	1.1298	0.2878	The correlation coefficient is not significant

The fact that no connection was found between the shadow sectors and the share of fines for economic contraventions does not mean that this connection does not exist, since not all economic crimes are disclosed. To this day, nobody has been punished for stealing a billion from the Moldovan banking system.

4. Conclusions

The conducted correlation analysis proved that the non-observed economy affects the economic security of the Republic of Moldova. The correlation coefficients of NOE and the

following indicators are significant: budget deficit, inflation, and the ratio of salary to the living wage.

Despite the existing legal and regulatory framework in Moldova, there is no official interpretation of the shadow economy in the legislative acts. Thus, it is necessary to restructure the legislation to suit the existing realities, and to consolidate at the national level a legal act regulating the concept and essence of the shadow economy, which will subsequently resolve the gaps in the legislation and contribute to counteracting the shadow economy and ensuring the economic security of the Republic of Moldova.

The state can take the following measures to combat the non-observed economy:

- to toughen punishment for lobbying the interests of representatives of the shadow sector by officials from state authorities;
- implementation by law enforcement agencies of measures to reduce the number of illegal enterprises and activities;
- to toughen the punishment and change the legislation in the direction of facilitating the procedure for the expropriation of material goods and property acquired with money received from money laundering (laundromat) and bribes;
- creating a negative image of the shadow economy through the media and advertising, which talks about the extensive damage caused to the state and society by this phenomenon, explain that those employed in the informal sector will lose part of their pension when they retire;
- development of legislative acts to facilitate the implementation of the activities of legal business. In this regard, it is necessary:
 - improve the investment climate;
 - reduce administrative pressure (bureaucracy) on the business environment;
 - improve the tax climate;
 - make the credit system more accessible for business;
 - eliminate the system of extortion and extortion to protect a business from the negative impact of the criminal world and the actions of officials who take bribes.

Acknowledgements

This study was carried out within the framework of two Application Projects from the “State Program” competition (2020-2023): 20.80009.0807.38 “Multidimensional assessment and development of the entrepreneurial ecosystem at national and regional level in order to boost the SME sector in the Republic of Moldova” and 20.80009.0807.22 “Developing the circular economy mechanism for the Republic of Moldova”, financed from the budget of the Republic of Moldova.

References

- Achim, M.V., Borlea, S.N. (2021) *Economic and Financial Crime: Corruption, Shadow Economy, and Money Laundering*. Springer Nature: Cham, Switzerland.
- Akvazba, E.O., Uhabina, T.E., Starkova, A.V. (2020) Informal Employment and the Shadow Economy: Essence and Social Functions. *Proceedings of the International Scientific Conference “Far East Con” (ISCFEC 2020) Advances in Economics*, 2041-2049. <https://doi.org/10.2991/aebmr.k.200312.284>
- Bayar, Y., Remeikiene, R., Androniceanu, A., Gaspareniene, L., Jucevicius, R. (2020) The Shadow Economy, Human Development and Foreign Direct Investment Inflows. *Journal of Competitiveness* 12(1), 5–21. <https://doi.org/10.7441/joc.2020.01.01>

- Darbi, W.P., Knott, P. (2021) The positive development role of informal economic activity: The case of informal printing firms in Ghana. *Business Strategy and Development* 4(4), 449-464. <https://doi.org/10.1002/bsd2.170>
- Elgin, C., Kose, A., Ohnsorge, F., and Yu, S. (2021) Understanding Informality. CAMA Working Paper 76, 1-44. Retrieved from: https://cama.crawford.anu.edu.au/sites/default/files/publication/cama_crawford_anu_edu_au/2021-09/76_2021_elgin_kose_ohnsorge_yu.pdf (Accessed on March 27, 2022).
- Esaku, S. (2021) Does income inequality increase the shadow economy? Empirical evidence from Uganda. *Development Studies Research* 8(1), 147-160. <https://doi.org/10.1080/21665095.2021.1939082>
- Esaku, S., Tajani, F. (2021) Does corruption contribute to the rise of the shadow economy? Empirical evidence from Uganda. *Cogent Economics & Finance* 9(1), 1912896, 1-20. <https://doi.org/10.1080/23322039.2021.1932246>
- Gutium, T. (2020) Competitivitatea și elementele economiei tenebre bunurilor industriei ușoare și materialelor de construcție. In *Tendențe contemporane ale dezvoltării științei: viziuni ale tinerilor cercetători* (pp. 272-277). Chișinău: Tipografia Artpoligraf.
- Hoang, H. (2020) The underground economy in transition countries from the perspective of globalization: The case of Vietnam. *Amazonia Investiga* 9(29), 234–242. <https://doi.org/10.34069/AI/2020.29.05.26>
- Hoinaru, R., Buda, D., Borlea, S.N., Văidean, V.L., Achim, M.V. (2020) The Impact of Corruption and Shadow Economy on the Economic and Sustainable Development. Do They “Sand the Wheels” or “Grease the Wheels”? *Sustainability* 12, 481, 1-29. <https://doi.org/10.3390/su12020481>
- Huynh, C.M. (2022) How does the impact of foreign direct investment on institutional quality depend on the underground economy? *Journal of Sustainable Finance & Investment* 12(2), 554-569. <https://doi.org/10.1080/20430795.2020.1788851>
- ILO (2018) Informal Economy. Retrieved from: https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_627189/lang--en/index.htm (Accessed on March 05, 2022).
- Khambule, I. (2022) COVID-19 and the informal economy in a small-town in South Africa: governance implications in the post-COVID era. *Cogent Social Sciences* 8(1), 1-16. <https://doi.org/10.1080/23311886.2022.2078528>
- Le, T.H., Nguyen, T.T. (2022) Global value chains and shadow economy: A multi-dimensional analysis. *Journal of International Trade & Economic Development*. <https://doi.org/10.1080/09638199.2022.2064902>
- Meleshko, O., Prokopenko, N., Gudz, O. (2021) The impact of the shadow economy on the country’s financial security. *E3S Web of Conferences, Topical Problems of Green Architecture, Civil and Environmental Engineering (TPACEE-2021)* 284, 07005. <https://doi.org/10.1051/e3sconf/202128407005>
- Mikulić, D. (2021) Volume of the unofficial economy in the Western Balkan region. Volume of the unofficial economy in the Western Balkan region. *Economic Research-Ekonomska Istraživanja* 34(1), 1603-1622. <https://doi.org/10.1080/1331677X.2020.1844584>
- Nandini, G., Abhishek, N., Akash, R.M., Chandan, K.A., Navneeth, S. (2020) Analysing Cybercrime Underground Economy Using Data Analytics. *Journal Critical Reviews* 7(14), 1770–1774. <https://doi.org/10.31838/jcr.07.14.368>
- NBS RM (2021a) Conturi Naționale. Metadata. Retrieved from: https://statistica.gov.md/public/files/Metadate/Conturi_nationale.pdf (Accessed on January 27, 2022).
- NBS RM (2021b) Employed population. Retrieved from: <https://statbank.statistica.md/pxweb/pxweb/ro/30%20Statistica%20sociala/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774> (Accessed on March 12, 2022)
- NBS RM (2021c) Non-Observed Economy. Retrieved from: https://statistica.gov.md/public/files/serii_de_timp/conturi_nationale/serii_anuale/Dinamica_econom_neob_servate.xls+&cd=3&hl=ru&ct=clnk&gl=md (Accessed on September 09, 2021).
- NBS RM (2021d) Statistical databank “Statbank”. Retrieved from: <https://statistica.gov.md/pageview.php?l=en&idc=407> (Accessed on March 20, 2022).
- NBS RM (2022a) Detected contraventions in 2021. Retrieved from: <https://statistica.gov.md/newsview.php?l=en&id=7372&idc=168> (Accessed on April 15, 2022)
- NBS RM (2022b) Labour Force in the Republic of Moldova: Employment and unemployment in 2021. Retrieved from: <https://statistica.gov.md/newsview.php?l=en&id=7347&idc=168> (Accessed on April 15, 2022)
- Nemec, D., Kotlánová, E., Kotlán, I., Machová, Z. (2021) Corruption, Taxation and the Impact on the Shadow Economy. *Economies* 9(1), 18, 1-16. <https://doi.org/10.3390/economies9010018>

ACROSS

www.across-journal.com

Proceedings of the International Conference “Interdisciplinarity and Cooperation in Cross-border Research”

Chisinau, Republic of Moldova, June 2022

Vol. 6. No. 1 – Economics

- Nguyen, D.V., Duong, M.T.H. (2021) Shadow Economy, Corruption and Economic Growth: An Analysis of BRICS Countries. *Journal of Asian Finance, Economics and Business* 8(4), 665–672. <https://doi.org/10.13106/jafeb.2021.vol8.no4.0665>
- Nguyen, T.A.N., Luong, T.T.H. (2020) Corruption, Shadow Economy and Economic Growth: Evidence from Emerging and Developing Asian Economies. *Montenegrin Journal of Economics* 16(4), 85–94. <https://doi.org/10.14254/1800-5845/2020.16-4.7>
- Polese, A., Moisé, G.M., Lysa, O., Kerikmäe, T., Sauka, A., Seliverstova, O. (2022) Presenting the results of the shadow economy survey in Ukraine while reflecting on the future(s) of informality studies. *Journal of Contemporary Central and Eastern Europe* 30(1), 101-123. <https://doi.org/10.1080/25739638.2022.2044585>
- Safuan, S., Habibullah, M.S., Sugandi, E.A. (2021) Mitigating the shadow economy through financial sector development in Indonesia: some empirical results. *Heliyon* 7(12), 1-13. <https://doi.org/10.1016/j.heliyon.2021.e08633>
- Thulare, M.H., Moyo, I., Xulu, S. (2021) Systematic Review of Informal Urban Economies. *Sustainability* 13(20), 1-18. <https://doi.org/10.3390/su132011414>