

SHADOW ECONOMY INDEX

for Ukraine

2017-2018

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Executive summary

This report presents estimates of the size of the shadow economy in Ukraine during the years 2017-2018. The estimates are based on Ukrainian businesses survey and following the method of Putniņš and Sauka (2017). The components of the shadow economy captured by this approach include misreported business income, unregistered or hidden employees, and ‘envelope’ wages. The estimates indicate that the size of the shadow economy in Ukraine was approximately 38.5% of GDP in 2017 and 38.3% of GDP in 2018. The estimated size of the shadow economy slightly decreased in 2018 compared to 2017 by 0.7%. The contraction is driven by decrease of all components of the shadow economy.

According to our data, unreported salaries (“envelope wages”) in Ukraine are about one-third of total salaries (30.5% in 2018 and 31.7% in 2017). About the same share of business income is deliberately concealed (underreported) from authorities (30.2% in 2018 and 30.9% in 2017). Comparing to above components high driven decrease had become in unofficial employment by 1.4 times, when in 2017 27,6% of businesses underreported their employees, in 2018 just 19.8%.

The findings suggest that Ukraine exhibit quit high levels of bribery. For example, the percentage of revenue spent ‘to get things done’ (which can be interpreted as bribery) by companies was 12.6% in 2018 and 11.8% in 2017. When doing business with the government, companies typically pay up to one-tenth of the contract value (7.5%) to secure the contract. Unregistered companies make up 13.8% and 14.7% of all enterprises in 2018 and 2017, respectively.

The highest levels of shadow activity as could be foreseen was in East region of Ukraine, for both years it slightly exceeded 50% and even grew. After East region, have gone South and Kyiv city with little bit more than 40% but here are positive tendencies of shadow index reduction. The least shadowed regions are West and North/Center, for them the index a bit over 30%. Despite the best values among all Ukraine region, they didn’t show positive trends in time: the North/Center stayed on the same level while the West’s values grew by 2.4%.

The Manufacturing sector had the highest level of shadow activity in 2018 (54.5%), while in 2017 the highest proportion of shadow activity was found in the Retail sector (57.9%). These two sectors and Construction demonstrated more than 50% of informality as in 2018 as in 2017. Small companies tend to operate “in the shadows” more than medium and large companies but micro companies not such extensive. The perceived probability of being caught for underreporting salaries (paying envelope wages) is 44.4%, while the expected penalties for deliberate misreporting (tax evasion), are about 70% – corporate managers expect the penalty to be a serious fine that would impact competitiveness, put the company at risk of insolvency or even caused to cease operations.

Companies are relatively satisfied with the State Fiscal Service of Ukraine and relatively dissatisfied with the government support to businesses. The most obstacles for business in Ukraine are Political instability and Corruptions. Uncertainty about regulatory policies as well as Tax policy perceived to be a very severe obstacle to doing business in Ukraine.

Table of contents

Executive summary	3
1. Introduction	6
2. Previous Ukrainian experience in Shadow economy measurement	7
3. Methods used in constructing the Index	16
4. Shadow Economy Index for Ukraine 2017 - 2018	21
5. Determinants of shadow activity	27
6. Comparison with estimates from other methods	38
7. Discussion and conclusions	39
References	42
Appendix 1: Questionnaire form	46
Appendix 2: Observed and non-observed components of GDP	53

1. Introduction

The aim of this report is to present estimates of the size of the shadow economies in Ukraine and to explore the main factors that influence participation in the shadow economy. We used methodology developed by Putniņš and Sauka (2017), which allows us to compare the size of the shadow economy in Ukraine with shadow economies in other countries, which measure shadow economy index by the same methodology. We also compare the results with estimates from methodologies of Ministry of Economic Development of Ukraine to get a sense of how the estimated size of the shadow economy vary depends of methods.

We use the definition of “shadow economy” that corresponds to described by the Organisation for Economic Co-operation and Development (OECD), in the comprehensive 2002 handbook “Measuring the Non-observed Economy”, as well as the System of National Accounts (SNA 1993). It refer to all legal production of goods and services produced by registered firms that is deliberately concealed from public authorities. The Shadow Economy Index has already been estimated in the Baltic countries (since 2010), in Moldova and Romania (2015-2016), and Poland. This report analyses the dynamics of the shadow economy in Ukraine during the period of 2017-2018. It also provides evidence on the main factors that influence entrepreneurs’ involvement in the shadow economy.

The Shadow Economy Index is based on representative Ukrainian business survey conducted in 2019. The approach, introduced by Putniņš and Sauka (2017), is based on the notion that those most likely to know how much production/income goes unreported are the entrepreneurs that themselves engage in the misreporting and shadow production. The Index combines estimates of misreported business income, unregistered or hidden employees, and unreported ‘envelope’ wages to obtain estimates of the size of the shadow economies as a proportion of GDP. The method used in this report requires fewer assumptions than most existing methods for estimating the size of the shadow economy, in particular compared to methods based on macro indicators. Furthermore, the method allows to make time or across sectors and countries comparisons of Shadow Economy Index and could be used as helpful tool for evaluating the effectiveness of policy designed to minimise the shadow economy.

Survey-based approaches always face the risk of underestimating the total size of the shadow economy due to non-response and untruthful responses given the sensitive nature of the topic. We minimizes this risk by implementing a number of survey and data collection techniques. These include guaranty of confidentiality for respondents, implementing of effective sample design, developed and tested tools, where the most sensitive questions follow less sensitive questions.

The next section describes how the Index is constructed, starting with the survey and then the calculations. The third section of this report presents estimates of the Index and analyses the various forms of shadow activity. Section 4 analyses the determinants of entrepreneurs' involvement in the shadow sector and their attitudes towards shadow activities. In Section 5 we compare the estimates with data on shadow economy produced by Ministry of Economic Development of Ukraine. The last section of the report summarizes the conclusions that we can draw from the results.

2. Previous Ukrainian experience in Shadow economy measurement

There have been multiple attempts to describe and measure the informal sector in Ukrainian economy. For the practically 30 years since the country became independent, the lack of tax revenues due to unreported employment and off the books trade has been an important problem for Ukraine with its deficits of state budget and the pension fund exacerbated by workforce emigration.

International studies and local research conducted by the government, academia, and think tanks suggested different methods to measure the size of the shadow economy, identified the reasons for this problem, and offered various recommendations regarding how to improve the situation, or to “de-shadow” the economy.

A 1999 investigation by the World Bank utilizing government and academic reports and feedback from local experts defines shadow economy as economic activity not reflected in accounting and reporting of enterprises, not accounted and controlled by official state bodies, and/or aimed at gaining profits through violating legislation, and whose profits are neither controlled nor taxed by the state¹.

This research paper noted the practice that is still in place today in Ukraine: paying real wages in cash (in foreign currency then) in addition to minimum official salaries due to high payroll taxes and illegal capital export.

An important distinction of shadow economy under socialism and in the independent Ukraine has been made in this paper. Before the dissolution of the USSR, shadow economic activity was mostly comprised of overreporting, plundering the resources of state-owned enterprises, as well as clandestine business activity and “speculation”, since private entrepreneurship was illegal. A decade later, shadow operations in already independent Ukraine included mainly concealment of profits by enterprises, contraband, and corruption, according to this research.

¹ The World Bank (1999) *Economic Growth with Equity: Ukrainian Perspectives*. Available [online]: <http://documents.worldbank.org/curated/en/467251468778815404/pdf/multi-page.pdf>

This paper also described the volume of the shadow economy by the coefficient of the “shadowization” of Ukrainian economy, which is a ratio of the GDP produced in the shadow economy to the overall GDP. According to the paper, the coefficient of shadowization of Ukraine’s economy increased from 12.3% in 1990 to 20.1% already in 1992 and doubled up to 41.7% in 1997. However, apart from experts’ estimations, the paper does not cite the sources of information about the size of the shadow economy. Therefore, it is difficult to verify the obtained results and to bring them in line with calculations carried out later using various methods.

This World Bank paper concludes that liberalization of doing business and the resulting decrease of the informal sector could boost Ukraine’s gross domestic product (GDP) by 20% to 25% and result in a 17% to 28% increase of annual receipts to state budget as well as a substantial growth of investment.

A working paper by German Advisory Group in Ukraine issued in 2001² looked back on the evolution of the shadow economy in the country since 1993 and outlined reasons that eventually restrained its growth. The model determining the causes and dynamics of Ukrainian shadow economy is described in the paper. The shadow economy is measured as the ratio of currency to money aggregate M2, which includes cash plus deposits in Ukrainian currency such as savings deposits and money market securities.

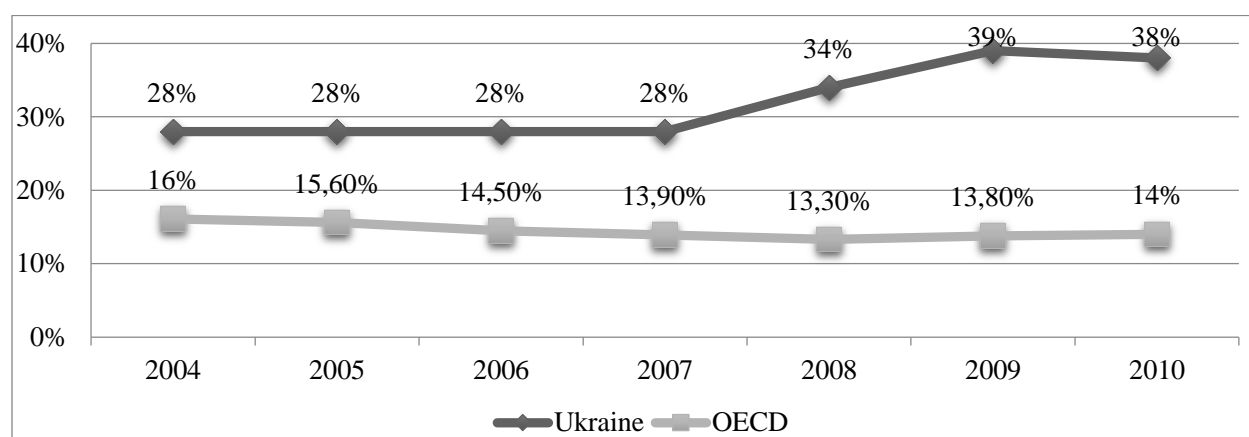
The model analyzes the impact of several factors (direct and indirect tax burdens, regulatory burden, social security burden, complexity of the tax system, and overdue inter-enterprise arrears) on the dynamics of the shadow economy. Out of them, four factors showed to have an impact on the changes in the shadow economy: the direct tax burden, especially the personal income tax, regulatory burden, complexity of the tax system, and inter-enterprise arrears. The paper concludes that the decline in the shadow economy observed in the late 1990’s – early 2000’s can be attributed to the lowering of the social security burden, the introduction of a single tax contribution for small and medium-sized businesses, and some hardening of budget constraints for enterprises.

It also names lowering regulatory burden and reducing personal income tax, as well as simplifying tax system and hardening of budget constraints for enterprises as conditions for further reduction of shadow economy.

² Ulrich Thießen, Tetyana Vakhnenko, Iryna Mel'ota (2001) *Fiscal and Regulatory Causes of the Shadow Economies in Transition Countries: The Case of Ukraine*. Available [online]: http://www.ier.com.ua/en/publications/working_paper?pid=1693

In 2009, the Ministry of Economy of Ukraine adopted a new method of measuring the volume of the shadow economy via an integral indicator that it has been applying since then³. The integral indicator is a weighted average of the levels of the shadow economy calculated using several methods of assessment: the method of “consumer spending – retail turnover”, the financial method, the monetary method, and the electricity method.

The “consumer spending – retail turnover” method identifies informal sector of the economy by comparing household expenditures on goods with volumes of purchase of goods in retail networks, while the financial method compares the dynamics of prices for finished products and components of their prime cost. The monetary method looks at the monetary supply and GDP dynamics, and the electricity method compares the changes in electricity consumption and GDP⁴. The more stable are any method’s assessments over the previous five years, the more weight it has on the final integral indicator.



Source: The National Institute for Strategic Studies (2011) *Shadow Economy in Ukraine: Scale and Ways to Overcome It. Analytical report*. Ukraine data source: Ministry of Economic Development and Trade of Ukraine; OECD data source: *The Influence of the economic crisis on the underground economy in Germany and the other OECD-countries in 2010: a (further) increase*. By Friedrich Schneider⁵

Figure 2.1. The different post-recession dynamics of the volume of shadow economy in Ukraine and in OECD countries

³ Ministry of Economy of Ukraine (2009) *Decree On Approval of Methodological Recommendations for Calculating the Level of the Shadow Economy*. Available [online]: <http://www.me.gov.ua/LegislativeActs/Detail?lang=uk-UA&id=4bb297a0-c900-404f-8c6f-5f76f18b1503> [in Ukrainian]

⁴ More information explaining each method used by Ukrainian government is available here: Tyshchuk, T. (2015) “Myth and Realities: the Level of the Shadow Economy in Ukraine” in *Vox Ukraine*. Available [online]: <https://voxukraine.org/en/myth-and-realities-the-level-of-the-shadow-economy-in-ukraine-en/>

⁵ Schneider, F. (2010) *The Influence of the economic crisis on the underground economy in Germany and the other OECD-countries in 2010: a (further) increase*. Available [online]: <https://www.scribd.com/document/81232881/The-Influence-of-the-economic-crisis-on-the-underground-economy-in-Germany-and-the-other-OECD-countries-in-2010-a-further-increase-By-Friedrich-Sc>

The 2011 analytical report by Ukraine's government-affiliated think tank the National Institute for Strategic Studies⁶ draws attention to the different reactions to the 2008 recession of the informal sectors in Ukraine and in OECD countries (fig. 2.1).

While from 2008 to 2010 – the years following the recession – the percentage of the shadow economy in OECD countries was the same or even slightly lower than in 2007, in Ukraine, it increased drastically. The share of the shadow economy had remained at stable 28% level in Ukraine up until 2007 rising to 34% in 2008 and to 39% in 2009.

The paper explains this difference by stating that unreported employment is the main driver of the shadow economy in the OECD countries; therefore, dismissing unreported employees and closing down non-registered businesses due to market decline actually decreased the level of shadow economy in these countries at the beginning of the recession. Afterwards, however, the economic downturn prompted legally working firms to enter the informal sector, which caused the relative rise of the share of the shadow economy.

By contrast, the paper posits that recession-hit Ukraine's businesses massively and hurriedly withdrew their capital from legal circulation into the informal sector, which caused a large gap in the country's finances. Compared to capital outflow, the reduction of the illegally employed staff or the size of the informal wages had a relatively smaller impact, the paper argues.

Further research of the shadow economy in Ukraine by the German Advisory Group resulted in a paper issued in 2011, which analyzes the incentives behind unreported economy⁷. The authors chose unreported economy as their research focus due to this practice (underreporting employees' incomes by paying them partly officially and partly in cash) being widespread in Ukraine. First of all, the paper attributed unreported economy to high social security contributions, which ranged from almost 40 percent to more than 50 percent in 2011 including employers' and employees' contributions.

Complicated tax administration was named as the second incentive that put administrative burden on taxpayers and led to tax avoidance. Finally, the paper argued that in public opinion, budget funds were perceived as being badly managed and misappropriated. Ukraine's citizens observed that public projects were few, more expensive than in other countries, and of bad quality. This was outlined as the third reason for tax evasion through underreporting wages. Thus, the paper states, the permissive culture of tax evasion emerges, where cheating a tax

⁶ The National Institute for Strategic Studies (2011) *Shadow Economy in Ukraine: Scale and Ways to Overcome It. Analytical report*. Available [online]: http://old2.niss.gov.ua/content/articles/files/1201_dop_new-a1c95.pdf [in Ukrainian]

⁷ Ehrke J., Betliy O., Kirchner R., Giucci R. (2011) *Proposals to De-shadow Ukraine's Economy*. Policy Paper Series [PP/04/2011]. Available [online]: http://www.ier.com.ua/en/publications/consultancy_work?pid=2898

officer is not considered immoral, but rather as “an act of legitimate resistance against a kleptocratic state”.

A comprehensive overview of the shadow economy by Ukrainian think tank the International Centre for Policy Studies (ICPS) published in 2014 provides estimations of the size of the shadow economy according to different methods and enumerates several factors causing this problem⁸. Among them are barriers for doing business and heavy tax burden tied with selective tax subsidies, but also high crime rate and non-transparent banking sector. The paper cites the monetary value of shadow economy in Ukraine as estimated by government agencies: approximately UAH 250 billion (USD 31.2 billion per 2013 exchange rate) of Ukrainian tax payers’ money circulating in the shadow economy in 2013 and the size of the shadow wages in Ukraine reaching UAH 170 – 200 billion (USD 21 – 25 billion) annually.

In her 2015 article⁹, Ukrainian researcher Tetyana Tyshchuk argues that the shadow economy makes a significant contribution to Ukraine’s economy and the value added produced by unreported economic activities is already accounted for in official statistics. The two types of economic activity – the official and the shadow one – do not exist as two parallel realities, according to the researcher, because the chain from production to income and to consumption (or savings) can consist of both legal and shadow operations. The author illustrates her point with the examples of a person earning off the books salary to pay legally for goods in a supermarket and of the funds allocated through official procurement later being used to pay a bribe. Therefore, she concludes, the statistically measured effects of the reduction of Ukrainian sizable informal sector of the economy may not be as substantial as expected.

A report by ACCA (the Association of Chartered Certified Accountants) published in 2017¹⁰ estimated the size of Ukraine’s shadow economy in 2016 at 45.96 percent of GDP, which put the country at the third position after Azerbaijan and Nigeria by this percentage in the overall ranking of 28 countries. Bureaucratic quality, GDP per capita, and political stability were outlined in this publication as top three factors that determined the size of Ukraine’s shadow economy at the time of evaluation.

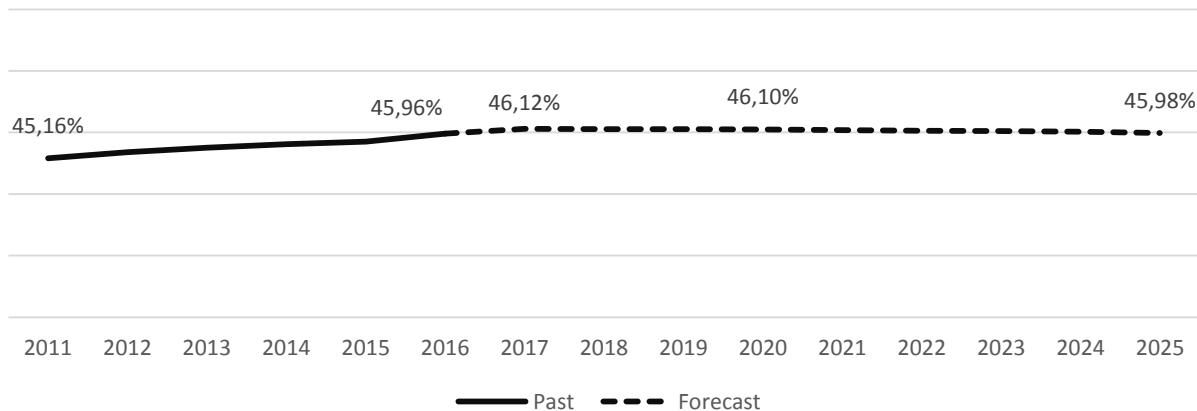
The ACCA report provides a forecast of the future changes of the size of shadow economy in the world based on the analysis of the “currently observed” factors (such as economic downturns, intense market competition, population growth, and low risk of detection) and the “emerging” ones (for example, growth of sharing economy and artificial intelligence). No significant changes

⁸ Bochi A., Povoroznyk V. (2014) *Shadow economy in Ukraine: causes and solutions*, International Centre for Policy Studies. Available [online]: http://www.ineko.sk/file_download/821

⁹ Tyshchuk T. (2015) *Myth and Realities: the Level of the Shadow Economy in Ukraine*, Vox Ukraine. Available [online]: <https://voxukraine.org/en/myth-and-realities-the-level-of-the-shadow-economy-in-ukraine-en/>

¹⁰ ACCA (2017) *Emerging from the shadows: the shadow economy to 2025*. Professional insight report. Available [online]: https://www.accaglobal.com/content/dam/ACCA_Global/Technical/Future/pi-shadow-economy.pdf

in the shadow economy scale were anticipated for Ukraine for the following decade in this publication (fig. 2.2). Its size was projected to increase slightly to 46.12% in 2017 and to return back to its previous under 46% level in 2025.



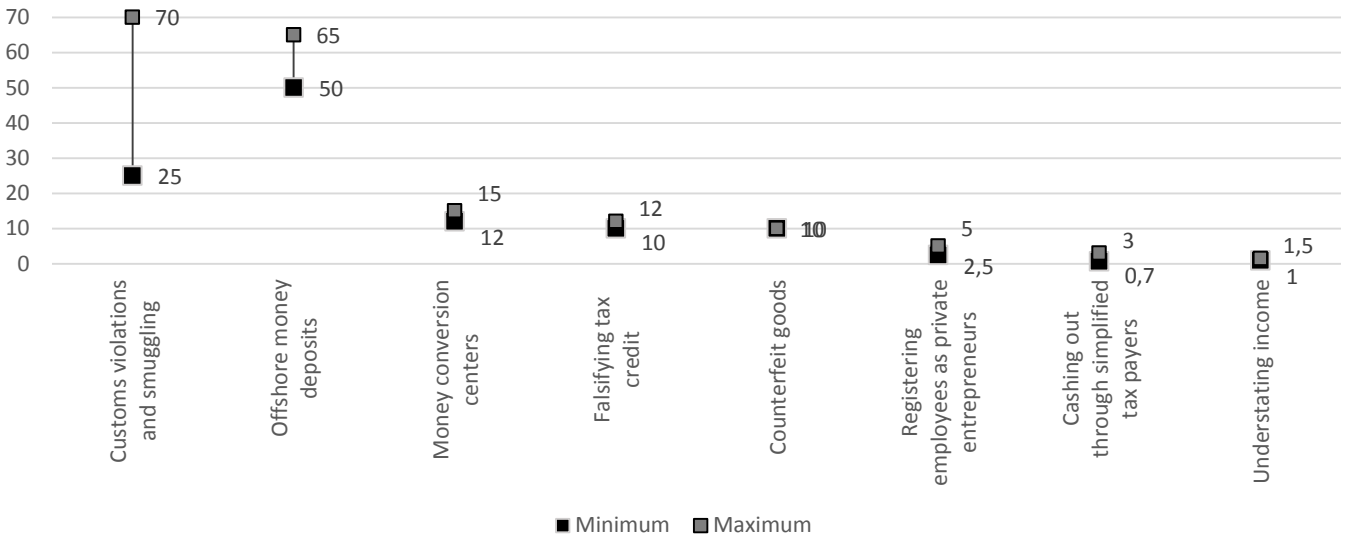
Source: ACCA (2017) *Emerging from the shadows: the shadow economy to 2025. Professional insight report.*

Figure 2.2. Projection of the size of the shadow economy in Ukraine by 2025 by ACCA

In 2017, Ukrainian think tank the Institute for Social and Political Transformation published research paper comparing the losses of the country’s economy from various methods of tax evasion¹¹. The publication was a contribution by this think tank to the ongoing public discussion in Ukraine regarding possible changes to regulation that would oblige small businesses to use cash registers and would cancel or limit special conditions available for businesses using simplified tax system. The paper argues that Ukrainian budget loses much more from large-scale tax evasion schemes utilized by big and politically connected businesses rather than from abusing simplified tax system.

The annual losses attributed to depositing money on offshore accounts are estimated as reaching from 50 billion to 65 billion UAH (approximately 2 – 2.5 billion USD), while the losses due to customs violations and smuggling are estimated at a wide range from 12 billion to 70 billion UAH (0.5 – 2.6 billion USD). Smaller, but still substantial amounts of budget loss are caused by money conversion centers (12 – 15 billion UAH or approximately 0.5 billion USD annually) and falsifying tax credit (10 – 12 billion UAH or approximately 0.4 billion USD annually). Counterfeit goods add another 10 billion UAH (approximately 0.4 billion USD) of losses, as estimated by this research (fig. 2.3).

¹¹ Dubrovsky V., Cherkashin V. (2017) *Comparative analysis of the fiscal effects of the use of tools evasion / tax avoidance in Ukraine*, Institute for Social and Political Transformation. Available [online]: <https://rpr.org.ua/wp-content/uploads/2018/02/Instrumenty-uhyllyannya-vid-splaty-podatkov-2017-1.pdf> [in Ukrainian]



Source: Dubrovsky V., Cherkashin V. (2017) *Comparative analysis of the fiscal effects of the use of tools evasion / tax avoidance in Ukraine*, Institute for Social and Political Transformation

Figure 2.3. Approximate budget losses due to different tax evasion schemes, in billions of UAH (from minimum to maximum estimated values)

Overall, according to calculations provided in the paper, the amount to which these illegal schemes decrease Ukraine’s budget revenues can be as high as 162 billion UAH (6.1 billion USD) each year. Compared to them, evading taxes through using different weaknesses of the simplified tax system is estimated as amounting approximately 9.5 billion UAH (0.35 billion USD) at maximum annually and presented as a much lesser challenge for the country’s public finances. Therefore, the paper argues, policy efforts in Ukraine should be concentrated on fighting large-scale tax evasion connected to political corruption rather than relatively smaller violations by small-size businesses.

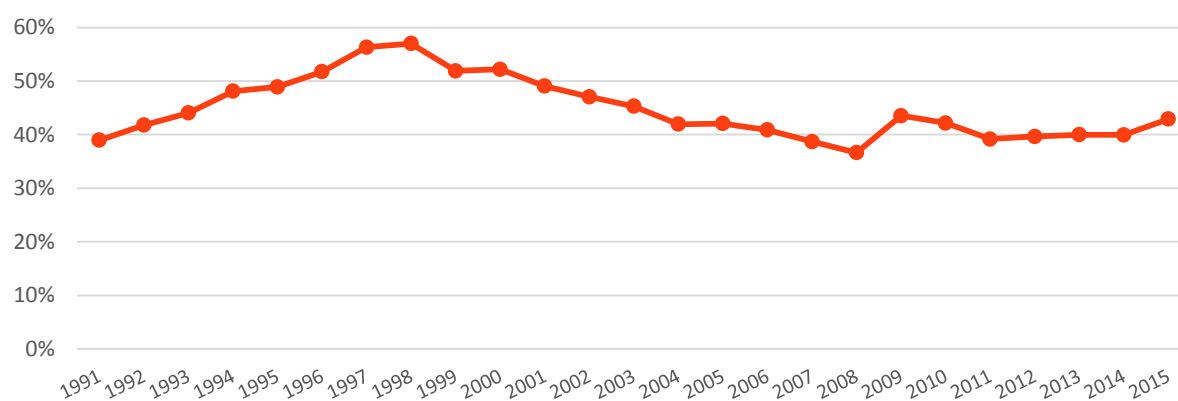
The 2018 report of International Labour Organization describes the results of the Ukrainian Undeclared Work Survey conducted by the Kyiv International Institute of Sociology in 2017¹². The country-wide survey of 1,000 respondents looks at the “demand” and “supply” sides of the undeclared work. Seven percent of the respondent reported having participate in undeclared work over the previous 12 months, while almost 46% of the respondents said they personally knew people who work without declaring their income to tax authorities. According to the survey, the most frequent types of undeclared work performed by the respondents were home maintenance or home improvement services (26%), selling food, for example farm produce (14%), as well as gardening, car repairs, and selling goods of services associated with the respondent’s hobby (from 7% to 9% each). Inability to find legal employment was named by the

¹² ILO (2018) *Undeclared Work in Ukraine: Nature, Scope and Measures to Tackle It* (EUILO Project “Enhancing the Labour Administration Capacity to Improve Working Conditions and Tackle Undeclared Work”). Available [online]: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---lab_admin/documents/projectdocumentation/wcms_630068.pdf

respondents most often as the reason why they worked unofficially, while lower price was the most frequently stated reason for using undeclared work.

In her PhD paper published in 2018¹³, Ukrainian researcher Oksana Nezhyvenko compared the results of the Ukrainian Undeclared Work Survey with the 2013 Eurobarometer survey. Her analysis showed that in the EU, it was more common to buy undeclared goods or services from a person the respondents knew, unlike in Ukraine, where the majority of the undeclared work was performed by unknown individuals or households. While difficulties with finding a legal job were the main reason for working informally in Ukraine, in the EU, by contrast, the main reason was mutual benefit. Her research also showed that the undeclared work was more accepted in Ukraine than in the EU, while the risks and sanctions associated with it were perceived as lower in Ukraine compared to the EU.

The dynamics of Ukraine’s shadow economy since 1991 were presented in a 2018 paper¹⁴ by the International Monetary Fund (IMF) where the authors, Leandro Medina and Friedrich Schneider, used the Multiple Indicators Multiple Causes (MIMIC) model to estimate the size of the shadow economy in 158 countries. This model is based on several factors including tax burden, regulatory burden, and official employment rate and takes into account economic freedom and business freedom.



Source: Medina L., Schneider F. (2018) *Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?* IMF Working Paper No. 18/17.

Figure 2.4. Size and development of the shadow economy of Ukraine over the period from 1991 to 2015, as estimated by Leandro Medina and Friedrich Schneider using the MIMIC model

¹³ Nezhyvenko O. (2018) *Informal employment in Ukraine and European Union transition countries*. Economies and finances. Université Paris-Est; Natsional’nyi universytet “Kyyevo-Mohylians’ka Akademiya”. Available [online]: <https://tel.archives-ouvertes.fr/tel-02096333/document>

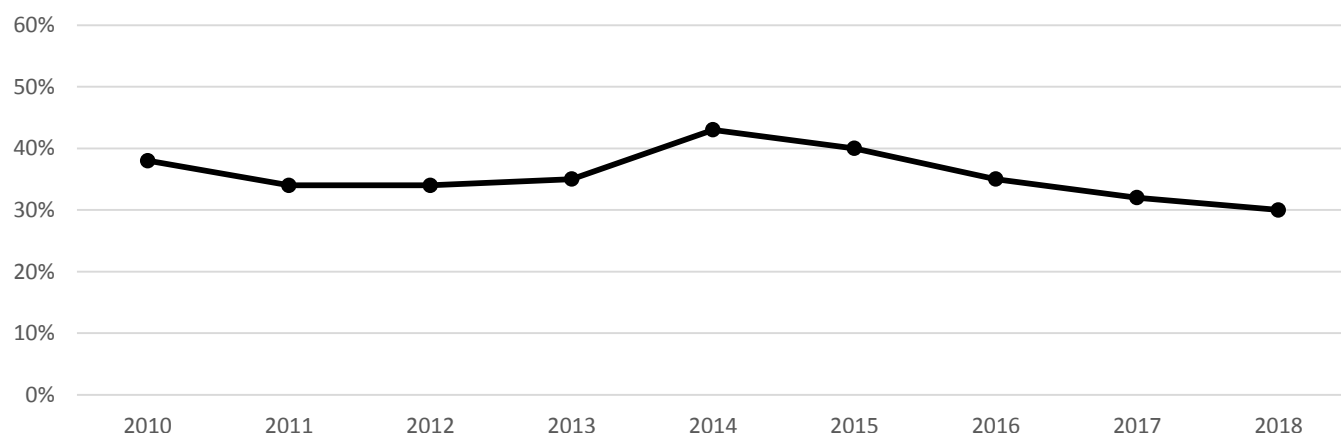
¹⁴ Medina L., Schneider F. (2018) *Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?* IMF Working Paper No. 18/17. Available [online]: <https://www.imf.org/en/publications/wp/issues/2018/01/25/shadow-economies-around-the-world-what-did-we-learn-over-the-last-20-years-45583>

According to these estimates (fig. 2.4), Ukraine’s shadow economy reached its record size in 1998 where it comprised 57% of the GDP – more than the official sector. From there, the trend had been decreasing down to the currently lowest level of 37% in 2008. Spiking to 44% during the recession-marked 2009, the size of the shadow economy in Ukraine had remained around 40% during the first half of 2010’s. It increased again in 2015 to almost 43%, after the Russian occupation of the Crimea and the war started in Ukraine along with significant economic downturn.

The estimations of Ukraine’s Ministry of Economic Development and Trade show somewhat different picture (fig. 2.5). Using the integral indicator methodology with changes made in 2009, the Ministry registered the highest size of the shadow economy in Ukraine in the recent decade in 2014, when it increased to 43% from 35% in 2014.

Since then, the Ministry’s calculations show a downward trend in the shadow economy dynamics: its size decreased to 40% in 2015 and was at the level of 30% in 2018, which is the lowest recorded value over the last 10 years¹⁵.

One of the methods used by the Ministry estimate the size of the shadow economy – the loss-making enterprises method – indicates that the informal share remains the highest in the financial and transport sectors, where it comprises 40% and 38% respectively. On the contrary, the share of the shadow economy is the lowest in agriculture (12%) and in retail and wholesale trade (18%), according to the Ministry.



Source: Ministry of Economic Development and Trade of Ukraine

Figure 2.5. Integral indicator of the size of the shadow economy in Ukraine, in percentage from the official GDP volume

¹⁵ Ministry of Economic Development and Trade of Ukraine (2019) Tendencies of the Shadow Economy in Ukraine in 2018. Available [online]: <http://www.me.gov.ua/Documents/Download?id=41c32df1-6e16-4226-a1cc-6e230ecf65e0>

To summarize, the research on the shadow economy in Ukraine was focused on determining its size and causes as well as providing recommendations for the government on the policy steps aimed at mitigating this issue. Different measurement models show the increase of the shadow economy in the country around 2009 and 2014, which matches the periods of economic recession in the country.

A survey on the participation in the shadow economy by working unofficially was carried out in Ukraine in 2017, but it did not intend to quantify the size or dynamics of the shadow economy in terms of macroeconomic indicators, instead contributing qualitative information such as the reasons for undeclared work. Therefore, it is important to study the shadow economy via enterprise surveys, as they provide the estimations from the enterprises regarding the scope of unreported income and employment among Ukrainian businesses.

3. Methods used in constructing the Index

3.1. The survey of entrepreneurs

The estimates of the shadow economy in Ukraine was computed drawing on the survey of company owners and managers. The Ukrainian business survey was conducted during February – May 2019 and contain questions about shadow activity during the previous two years (2018 and 2017).

Random stratified sample design was developed that provides representativeness of all Ukrainian companies. Based on the computer-assisted telephone interviewing (CATI) method and the random sampling selection procedure, a total number of 801 phone interviews were conducted. The general population was stratified by 5 regions of Ukraine: (1) South, (2) West, (3) East, (4) North-Centre and (5) Kyiv city. By 160 companies in every region were surveyed using the CATI method.

The questionnaire form (see Appendix 1) contains four main sections: (i) external influences and satisfaction; (ii) shadow activity; (iii) company and owner characteristics; and (iv) entrepreneurs' attitudes. To increase the response rate and truthfulness of responses, the questionnaire begins with non-sensitive questions about satisfaction with the government and tax policy before moving on to more sensitive questions about shadow activity and deliberate misreporting. This 'gradual' approach is recommended by methodological studies of survey design in the context of tax evasion and the shadow economy (e.g., Gerxhani, 2007; Kazemier and van Eck, 1992). Further, the survey is framed as a study of satisfaction with government policy, rather than a study of tax evasion and misreporting (similar to Hanousek and Palda, 2004). We also guarantee respondents 100% confidentiality with respect to their identities.

In the first survey block, ‘external influences’, respondents are asked to express their satisfaction with the State Revenue Service, tax policy, business legislation and government support for entrepreneurs in the respective country. The questions use a five-point Likert scale from “1” (“very unsatisfied”) to “5” (“very satisfied”). The first section of the questionnaire also includes two questions related to entrepreneurs’ social norms: entrepreneurs’ tolerance towards tax evasion and towards bribery. The measures of tolerance serve a second important role as control variables for possible understating of the extent of shadow activity due to the sensitivity of the topic.

The second section of the questionnaire, ‘informal business’, is constructed based on the concepts of productive, unproductive and destructive entrepreneurship by Baumol (1990), assessment of ‘deviance’ or ‘departure from norms’ within organisations (e.g., Warren, 2003) and empirical studies of tax evasion in various settings (e.g., Fairlie, 2002; Aidis and Van Praag, 2007). We assess the amount of shadow activity by asking entrepreneurs to estimate the degree of underreporting of business income (net profits), underreporting of the number of employees, underreporting of salaries paid to employees and the percentage of revenues that firms pay in bribes.

We employ the ‘indirect’ approach for questions about informal business, asking entrepreneurs about ‘firms in their industry’ rather than ‘their firm’¹⁶. This approach is discussed by Gerxhani (2007) as a method of obtaining more truthful answers and is used by Hanousek and Palda (2004), for example. A study conducted by Sauka (2008) shows that even if asked indirectly, entrepreneurs’ answers can be attributed to the particular respondent or company that the respondent represents.¹⁷ Furthermore, experience from Sauka (2008) suggests that phone interviews are an appropriate tool to elicit information about tax evasion.¹⁸ The second section of the questionnaire also elicits entrepreneurs’ perceptions of the probability of being caught for various forms of shadow activity and the severity of penalties if caught deliberately misreporting.

In addition to measuring the shadow economy involvement of registered businesses, a question that measures the amount of unregistered business is also included. Owners/managers of

¹⁶ Even when asked indirectly, some entrepreneurs choose not to answer sensitive questions about shadow activity. One way to avoid providing truthful answers to such questions is by simply answering “0” to all of them, suggesting that no shadow activity of any kind has taken place during the past two years. We view it as much more likely that these responses reflect avoidance of sensitive questions as truthful opinions and therefore treat these cases as non-responses, in order to minimise the downward bias in estimates of shadow activity.

¹⁷ Sauka (2008) used the following approach: in the follow-up survey (one year after the initial survey), respondents are ‘reminded’ that in the initial survey they stated that, for example, the degree of involvement in underreporting business income by ‘their firm’ (not by ‘firms in their industry’ as formulated in the initial survey) was, for example, 23%. Each respondent is then asked whether the degree of underreporting in their companies is the same this year and if not, to what extent it has changed. The conclusion from using this method is that respondents tend to state the amount of underreporting in ‘their firm’ when asked about ‘firms in their industry’.

¹⁸ Sauka (2008) uses both face-to-face and phone interviews and concludes that willingness to talk about sensitive issues like tax evasion in Latvia does not differ significantly between the two methods.

registered businesses give their estimates on a share of unregistered enterprises operate in their sector and the percentage of goods/services produced by unregistered enterprises.

The production of unregistered businesses was not included to the shadow economy index as their activity does not fit within our definition of the shadow economy. Yet, by including Q12, we are able to provide a more in-depth picture of the unobserved economies in the two countries. As illustrated in Appendix 2, the key components of the unobserved economy are:

- (1) Unreported income of registered producers. This is what we refer to as the ‘shadow economy’ and measure in the Index.
- (2) Unreported income of unregistered producers. This component is measured but is not included in the Index.
- (3) Income from production of illegal goods/services. We do not measure this component of the unobserved economy since it requires different methods.

The third section of the questionnaire asks entrepreneurs about the performance of their companies (percentage change in net sales profit, sales turnover and employment during the previous year), company age, industry and region.

The fourth section of the questionnaire elicits entrepreneurs’ opinions and attitudes towards tax evasion. This year we have included additional questions relating to entrepreneurs’ tax morale. We draw on Torgler and Schneider (2009), who define tax morale as a moral obligation to pay taxes and “a belief in contributing to society by paying taxes” (Torgler and Schneider 2009: 230). Similar to the approach, we take for other questions relating to tax evasion, we phrase the tax morale question indirectly, asking company managers to what extent they would agree or disagree with the statement: “Companies in your industry would think it is always justified to cheat on tax if they have the chance” using a scale from 1 (‘strongly disagree’) to 5 (‘strongly agree’). We also include a question on community belonging (Q22c) and a question on perceived contribution to the growth of the economy and society in general (Q22a), both of which are factors associated with tax morale.

Finally, we also include questions from the Business Environment and Enterprise Performance Survey (BEEPS) run by the World Bank/European Bank for Reconstruction and Development (EBRD) to measure environmental influences such as institutions. We ask respondents to what extent factors such as tax administration, tax rates, trade and customs regulation, business licensing and permits, functioning of the judiciary/courts, uncertainty about regulatory policies, corruption, anti-competitive practices of other competitors and political instability affect the current operations of a business (Q23).

3.2. Calculation of the Index

The Index measures the size of the shadow economy as a percentage of GDP.¹⁹ There are three common methods of measuring GDP: the output, expenditure and income approaches. Our Index is based on the income approach, which calculates GDP as the sum of gross remuneration of employees (gross personal income) and gross operating income of firms (gross corporate income). Computation of the Index proceeds in three steps: (i) estimate the degree of underreporting of employee remuneration and underreporting of firms' operating income using the survey responses; (ii) estimate each firm's shadow production as a weighted average of its underreported employee remuneration and underreported operating income, with the weights reflecting the proportions of employee remuneration and firms' operating income in the composition of GDP; and (iii) calculate a production-weighted average of shadow production across firms.

In the first step, underreporting of firm i 's operating income, $UR_i^{OperatingIncome}$ is estimated directly from the corresponding survey question (Q7). Underreporting of employee remuneration, however, consists of two components: (i) underreporting of salaries, or 'envelope wages' (Q9); and (ii) unreported employees (Q8). Combining the two components, firm i 's total unreported proportion of employee remuneration is:²⁰

$$UR_i^{EmployeeRemuneration} = 1 - (1 - UR_i^{Salaries})(1 - UR_i^{Employees})$$

In the second step, for each firm we construct a weighted average of underreported personal and underreported corporate income, producing an estimate of the unreported (shadow) proportion of the firm's production (income):

$$ShadowProportion_i = \alpha_c UR_i^{EmployeeRemuneration} + (1 - \alpha_c) UR_i^{OperatingIncome},$$

where α_c is the ratio of employees' remuneration (*Eurostat* item D.1) to the sum of employees' remuneration and gross operating income of firms (*Eurostat* items B.2g and B.3g). Putniņš and Sauka (2017) calculate α_c for each country, c , in each year using data from *Eurostat*. In calculations for Ukraine we use data of *UkrStat* (State statistical Service of Ukraine). In Ukraine, the ratio of employees' remuneration to the sum of employees' remuneration and gross operating income was 28.9% in 2017 and 33.0% in 2018. Taking a weighted average of the underreporting

¹⁹ Two caveats are worth noting: (i) because we do not measure shadow activity in the state (public) sector, our estimates refer to private sector shadow activity as a percentage of private sector domestic output; and (ii) we do not measure the "black economy", i.e., illegal goods and services.

²⁰ In deriving the formula, we make the simplifying assumption that wages of unreported employees are on average equal to those of reported employees.

measures rather than a simple average is important to allow the Shadow Economy Index to be interpreted as a proportion of GDP.²¹

In the third step of the Putniņš and Sauka (2017) methodology one takes the weighted average of underreported production, $ShadowProportion_i$, across firms in country c to arrive at the Shadow Economy Index for that country:

$$INDEX_c^{ShadowEconomy} = \sum_{i=1}^{N_c} w_i ShadowProportion_i$$

The weights, w_i , are the relative contribution of each firm to the country's GDP, which we approximate through the relative amount of wages paid by the firm. Similarly to the second step, the weighting in this final average is important to allow the Shadow Economy Index to reflect the proportion of GDP.²² Yet since such information is not available for Ukraine, we instead use a simple arithmetic mean of the $ShadowProportion_i$ for both countries.

Table 3.1. Distribution of the companies in the Ukrainian sample by number of employees

Employees	Number	%
1 = 1-5	280	39.3
2 = 6-10	117	16.4
3 = 11-20	106	14.9
4 = 21-40	63	8.8
5 = 41-60	42	5.9
6 = 61-100	48	6.7
7 = 101-150	20	2.8
8 = 151-200	11	1.5
9 = 201-250	7	1.0
10 = more than 250	18	2.5
Total	712	100.0

Source: authors' own calculations

Table 3.1 presents the distribution of the Ukrainian sample by number of employees, showing that even 40% of the sample data are micro firms with up to 5 employees, about 30% are firms with 6–20 employees, 15% are firms with 21–60 employees and another 15% of the companies

²¹ For example, suppose in a given economy wages amount to 80 and corporate income amounts to 20, resulting in true GDP of 100. Suppose that wages are underreported by 50% and corporate income is underreported by 10%, resulting in an official reported GDP of 40+18=58. In this example the shadow economy is 42% of true GDP, i.e. (100-58)/100. A weighted average of the two underreporting proportions accurately estimates the size of the shadow economy: (0.8)(50%)+(1-0.8)(10%)=42%. However, neither of the two underreporting proportions themselves correctly represent the size of the shadow economy (50% and 10%), nor does an equal weighted average: (0.5)(50%)+(1-0.5)(10%)=30%.

²² For example, consider the previous footnote, replacing the two sources of income with two firms: a large one that produces income of 80 and a smaller one that produces income of 20.

are considered to be medium sized or large companies with more than 250 employees. The managers of 89 surveyed companies (11%) did not want to say the size of their company.

4. Shadow Economy Index for Ukraine 2017-2018

Table 4.1 presents the aggregate index of the shadow economy in Ukraine in 2017 and 2018. The index, calculated as a simple mean of its components, had stayed at practically the same level over the year reaching 38.5% in 2017 and 3.3% in 2018.

The level of the shadow economy in Ukraine is much higher than in the Baltic countries. Among them, Latvia had the highest level of the shadow economy in 2018 (24.2%), but it was more than twice smaller than the one in Ukraine. The level of the shadow economy in Lithuania and Estonia reached only 18.7% and 16.7% respectively. Additionally, while the size of the shadow economy reduced in Estonia (from 18.2% in 2017), it increased in Latvia (from 22.0% in 2017). From the point of view of the dynamics of the shadow economy, Ukraine is the closest to Lithuania where the change of the size of the shadow economy was minor over the year (it was 18.2% in 2017).

Table 4.1. Size of the shadow economies for the period of 2017–2018

This table shows point estimates and 95% confidence intervals (in parentheses) for the size of the shadow economies as a proportion of GDP using the method of Putniņš and Sauka (2017). The first row shows the change in the relative size of the shadow economy from 2017 to 2018.

	Ukraine	Latvia	Lithuania	Estonia
Change (2018-2017)	-0.7% (-1.5%, 0.2%)	+10.0%	+2.7%	-8.2%
2018	38.5% (35.3%, 41.2%)	24.2% (21.5%, 26.8%)	18.7% (17.0%, 20.4%)	16.7% (14.5%, 18.8%)
2017	38.3% (35.5%, 41.7%)	22.0% (19.6%, 24.5%)	18.2% (16.1%, 20.4%)	18.2% (16.1%, 20.3%)

Sources: for Ukraine: authors' own calculations; for Estonia, Latvia and Lithuania: Putniņš and Sauka (2019).

Figure 4.1 illustrates the relative size of the components of the shadow economy in Ukraine. The largest component of the shadow economy in Ukraine in 2018 was unreported business income (58.2%), followed by unreported (“envelope”) wages (23.1%) and unreported or unregistered employees (18.7%). While the structure of the components of the shadow economy in Ukraine in 2018 remained similar to 2017 – unreported business income being the most important contributing factor, and the other two components being comparably lower – their respective shares changed to a certain degree.

Specifically, the size of the largest factor contributing to the shadow economy in Ukraine – unreported business income – reduced somewhat compared with 2017 when it accounted for 60.2% of the country’s shadow economy sector. On the contrary, the share of unreported wages increased in 2018: it was 18.0% in 2017. Finally, the weight of the remaining factor of shadow economy – unreported or unregistered employee – almost did not change over the year. In 2017, it was 21.9%.

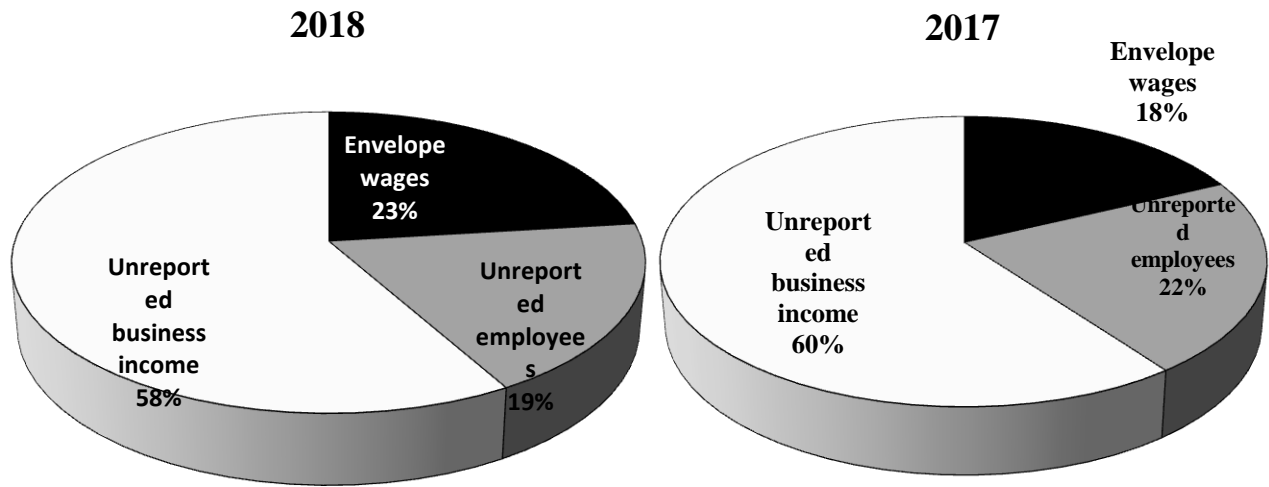


Figure 4.1. Components of the shadow economy in Ukraine, 2017 – 2018

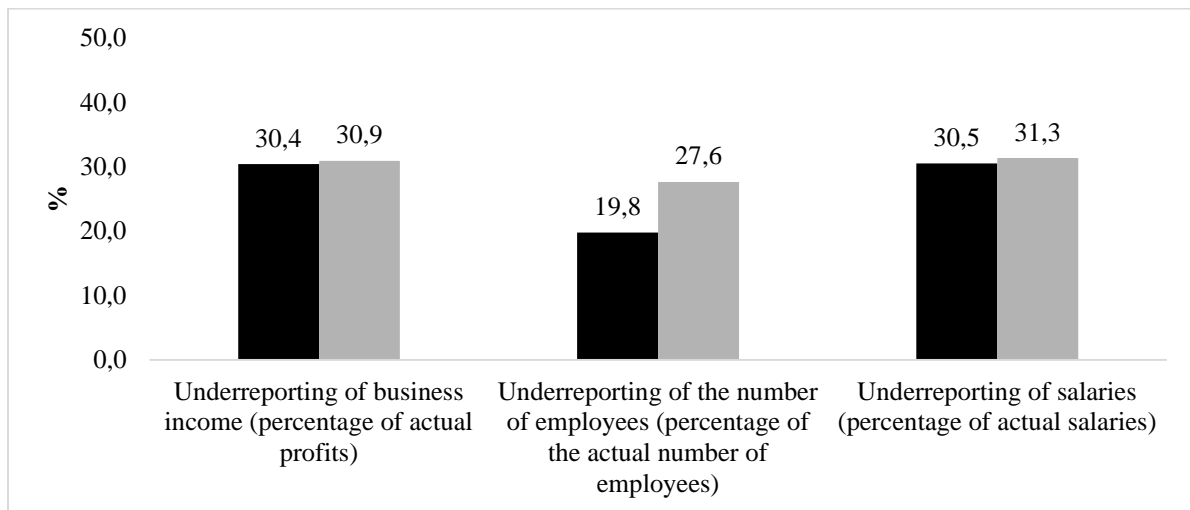


Figure 4.2. The levels of shadow economy index components in Ukraine, 2017–2018

Figure 4.2 illustrates the dynamics of shadow economy index components values in Ukraine from 2017 to 2018 by the respondents’ estimates. Commitment to underreporting reduced in 2018 for all studied components as company’s profit, as number of employees and size of their salaries. The share of the profits intentionally concealed by businesses from the government experienced very small decrease in 2018 (to 30.4% from 30.9% in 2017). The most substantive

changing in positive way was observed in underreporting of the number of employees from 27.6% in 2017 to 19.8% in 2018. About one-third of the respondents believed businesses in their sector did not report actual salaries (31.3% in 2017 and 30.5%, in 2018).

Figure 4.3 shows the distribution of the levels (percentiles) of income underreporting in 2017 and 2018. A third of all respondents in Ukraine (33.3%) said that underreporting of business profits in their sector was 0% in 2018 – i.e., that companies reported 100% of their actual profits (see Figure 4.3). This, however, is less than in 2017 when a much higher percentage of Ukrainian companies – 41.5% – estimated that no underreporting of profits takes place in their industries.

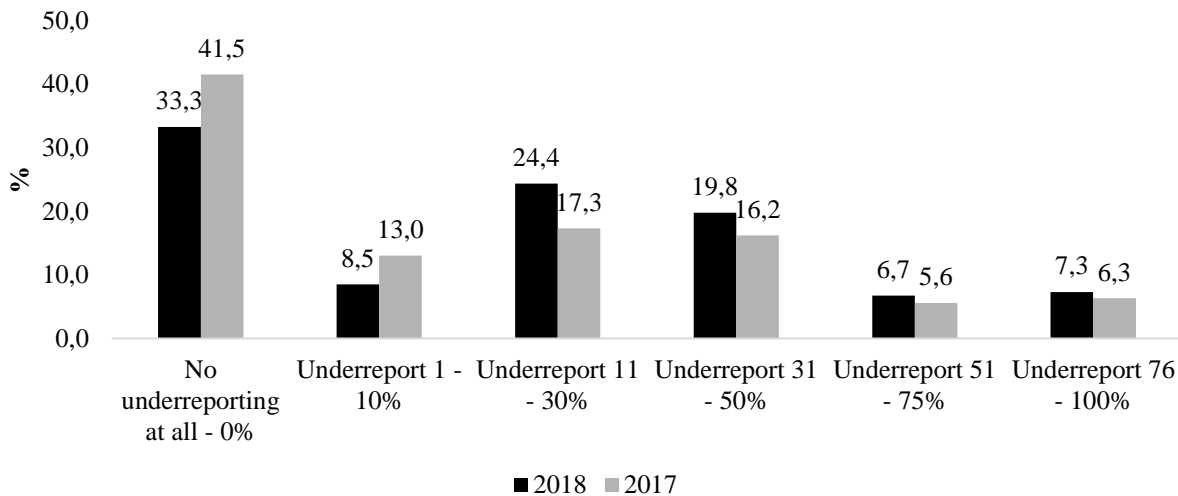


Figure 4.3. Underreporting of income (percentage of actual profits) in Ukraine, 2017–2018. The vertical axis measures the percentage of Ukraine’s respondents estimating the level of underreporting within the range given on the horizontal axis.

Consequently, more respondents in 2018 said that companies in their sector are not transparent about their income. 8.5% of respondents in Ukraine believe that up to 10% of business income in their sector is not reported to the government. The share of these businesses that estimated underreporting as quite low decreased compared to 2017 when it was 13%.

About a quarter of the businesses surveyed in 2018 in Ukraine (24.4%) said that the level of underreporting in their sector was between 11% and 30%. This share notably increased over the year: in 2017, 17.5% of the respondents made such estimates. 19.8% of respondents believed the level of underreporting profits in their sector to be around 31-30% in 2018. The proportion of such respondents increased slightly compared to 2017 when they comprised 16.2%.

Only about 7% of the respondents estimated that from 51% to 75% of business profits by companies in their sector were not reported to the government in 2018, and approximately the same share of the respondents believed underreporting of profits in their sector to be as high as from 75% to 100%. These shares slightly increased in 2018 compared to 2017.

Figure 4.4 shows the respondents' estimated level of underreporting of the number of employees in Ukraine. According to our survey, more than 44% of the respondents believed that companies in their sector registered all of their employees with the government agencies in 2018 – so no unregistered work was taking place. This is a higher share than in 2017 when 33.2% of the respondents said that all workforce in their sectors had legal contracts (see Figure 4.4).

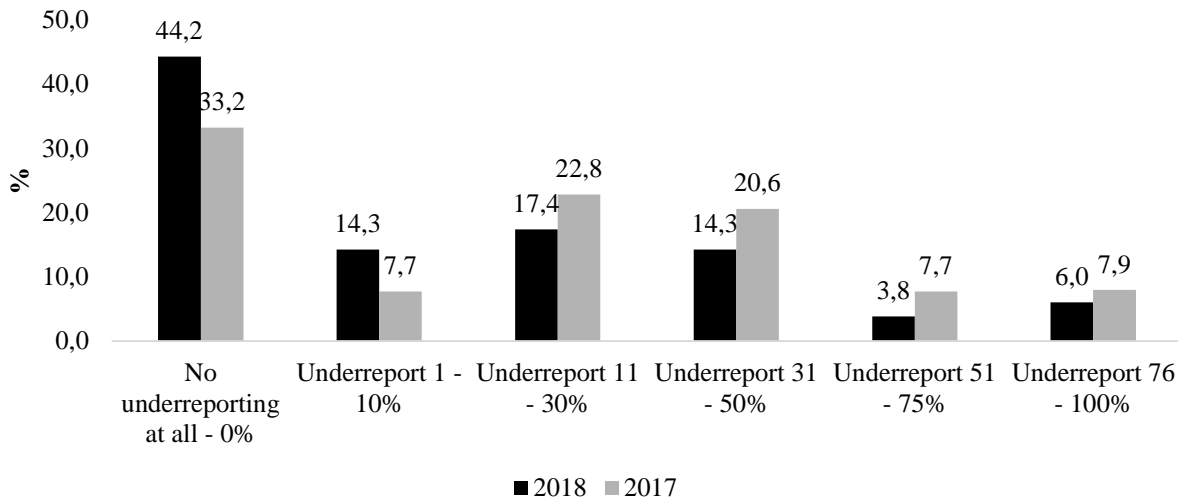


Figure 4.4. Underreporting of the number of employees in Ukraine, 2017–2018. The vertical axis measures the percentage of the respondents estimating the level of underreporting within the range given on the horizontal axis

The remaining respondents mostly estimated the share of underreported employment as being under 50% in 2018. 17.4% said that from 11% to 30% of employees in their sector were not registered with the government, while two identical shares of 14.3% of the respondents estimated this number as either somewhat lower (up to 10%) or somewhat higher (31% to 50%). All of these shares decreased compared to 2017 with the exception of the respondents who gave the lowest estimates of underreporting of employment: the share of those who believed it to fall under 10% doubled compared to 2017 when it was only 7.7%.

Almost 10% of Ukrainian respondents in total say that underreporting of employment in their sectors exceeded 50%: 3.8% believe the share of unreported employees in their sectors to be around 51-75% and 6% indicate a very high level of underreporting: from 76% to 100%.

Figures 4.5 show estimated underreporting of employee compensation or so-called “envelope wages” as a proportion of actual wages. The estimates of unreported salaries remained similar in 2017 and 2018. About a third of the respondents both in 2017 and in 2018 believed that companies in their sectors complied with salary reporting completely. 34.1% of the respondents in 2017 and 32.9% in 2018 said that no salaries were underreported in their sectors (see Figure 4.5).

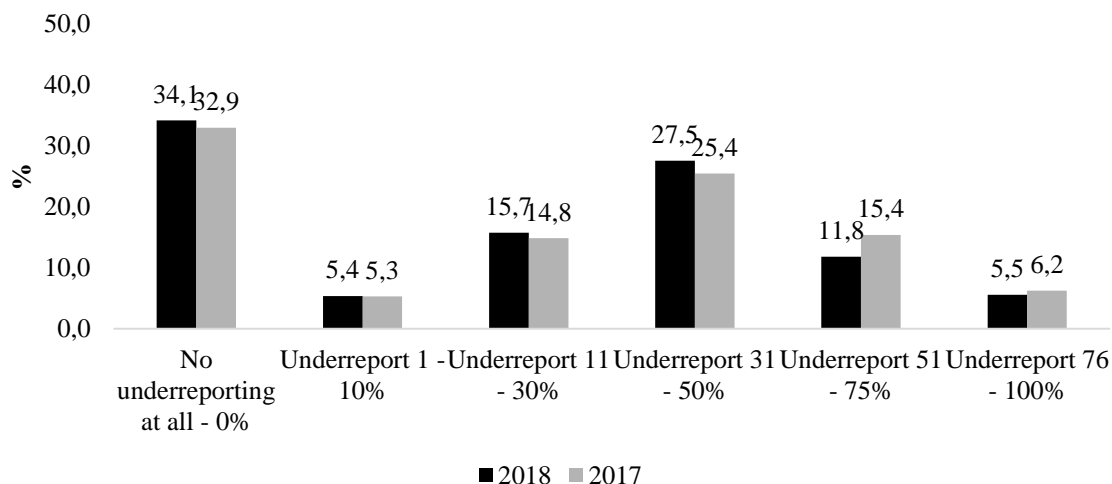


Figure 4.5. Underreporting of salaries in Ukraine, 2017–2018. The vertical axis measures the percentage of the respondents estimating the level of underreporting within the range given on the horizontal axis.

The estimates of the remaining respondents were distributed normally in 2017 and 2018. The largest share of them – 27.5% in 2018 and 25.4% in 2017 – said that from 31% to 50% of employee compensation in their sectors was paid unofficially. Fewer respondents estimated the level of underreporting salaries as falling between either 11% and 30% or 51% and 75%, and only from 5% to 6% of the respondents in 2017 as well as in 2018 believed the underreporting of salaries to be either very low – under 10% – or very high – above 76%.

Taken together, the findings shown in figures 4.2 to 4.5 suggest that underreporting of salaries is the most widespread form of engaging in the shadow economy by Ukrainian firms, followed closely by underreporting of business income. As these two issues are closely connected to taxation, it could mean that reduction of tax rates, simplification of the administration of taxes, and optimization of public spending would motivate Ukrainian businesses to increase their transparency and reduce practices contributing to the shadow economy.

Figure 4.6 indicates that the estimated magnitude of bribery (percentage of revenue spent on “getting things done”) became higher in 2018 – 12.6% when it was 11.8% in 2017. At the same time, the percentage of the contract value that Ukrainian firms typically offer as a bribe to secure a contract with the government reached 7.2%.

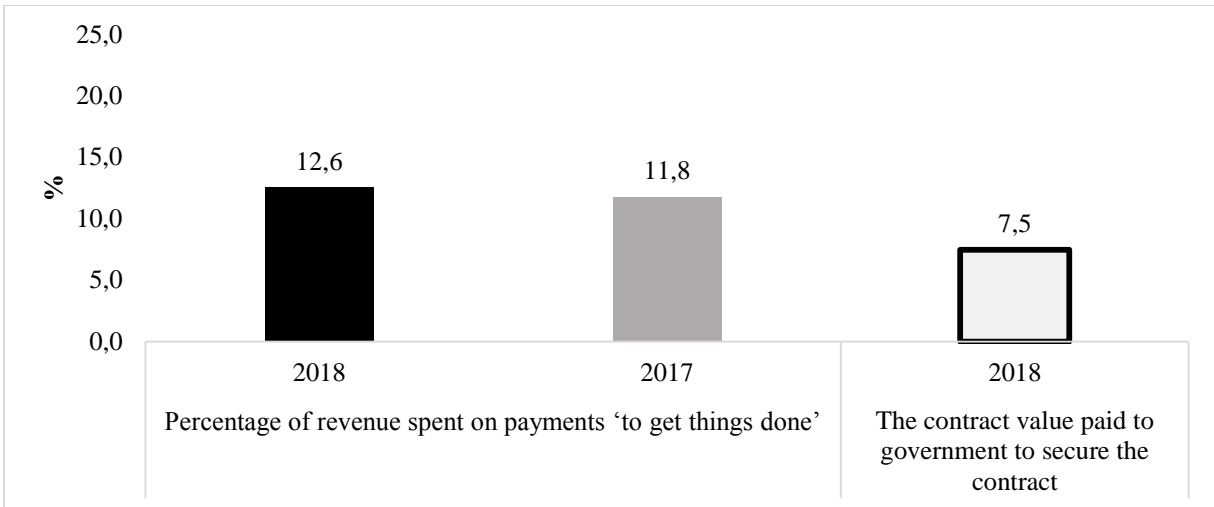


Figure 4.6. Bribery level in Ukraine, 2017-2018

More than half of the respondents in Ukraine said that firms in their sector do not pay bribes at all (see Figure 4.7). In 2017, this share was almost 57%, while in 2018, it was 55.6%. About 19% of the respondents in 2018 and about 17% in 2017 estimated that paying bribes costed under 10% of profits for companies in their sector. About 9% of the respondents both in 2017 and 2018 said that companies in their sector spend from 10% to 25% of their income unofficially, while more than 16% of the respondents – in 2017 as well as in 2018 – said it was over 25%.

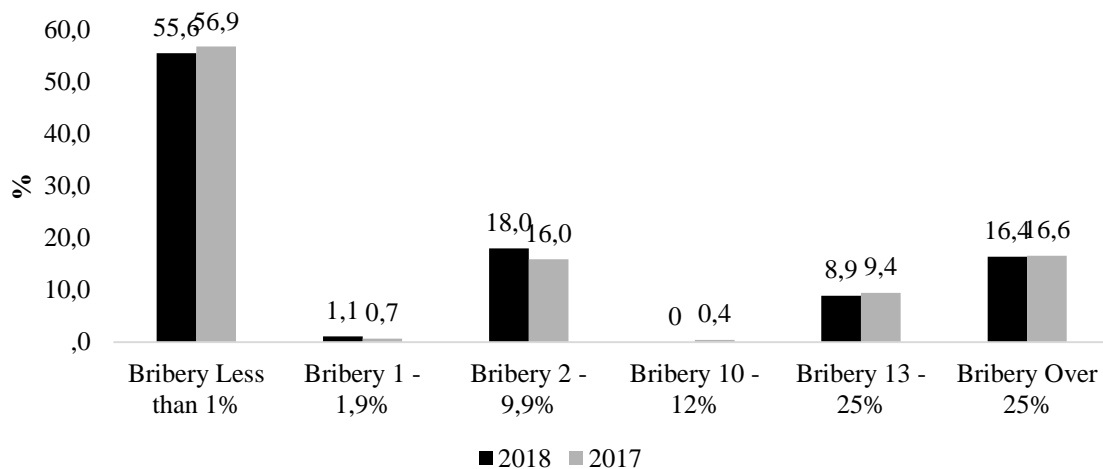


Figure 4.7. Bribery (percentage of revenue spent on payments 'to get things done') in Ukraine, 2017-2018. The vertical axis measures the percentage of the respondents estimating the level of bribery within the range given on the horizontal axis.

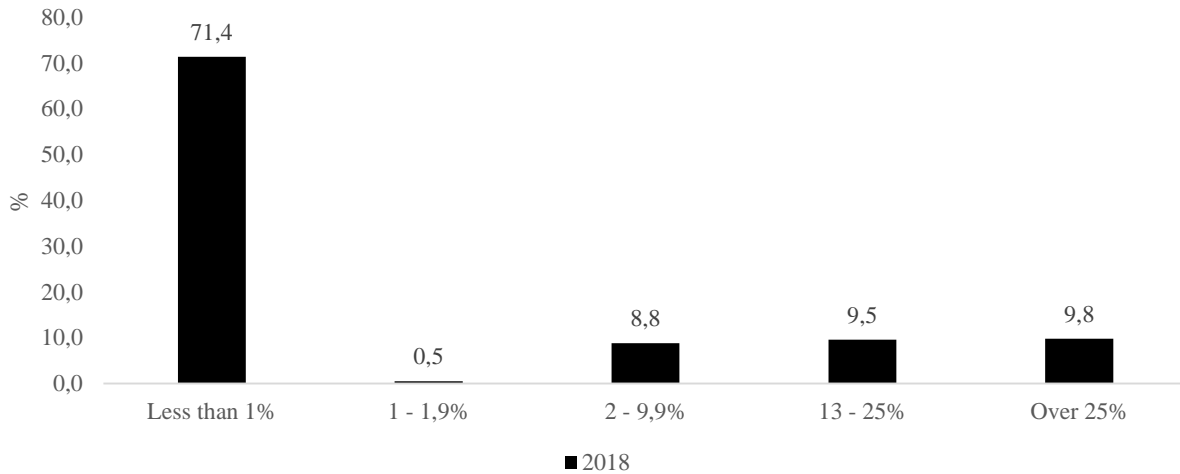


Figure 4.8. Percentage of the contract value paid to the government to secure the contract, Ukraine, 2018.
The vertical axis measures the percentage of each country’s respondents underreporting within the range given on the horizontal axis.

About 71.4% of the respondents in Ukraine said that firms in their sector did not pay any shares of contract value back to take a government contract in 2018. Slightly over 9% of the respondents estimated that the unofficial cost of winning a contract was up to 10% of its value while almost equal shares of about 10% of the respondents said that firms in their sector paid either from 13% to 25% or over 25% of the sum of the government contract back (see Figure 4.18).

5. Determinants of shadow activity

This section is dedicated to detailed exploration of factors that influence the willingness of the surveyed Ukrainian firms to participate in the shadow economy. We will compare the size of the shadow economy in subsamples grouped by the firms’ region, sector, and size as these factors may contribute to the market and regulatory conditions for doing business and subsequent decisions regarding participation in the shadow economy. After that, we will find out how attitudes and perceptions are connected with tax evasion. Tax morale, satisfaction with the government and tax authorities as well as perceived probability of being caught play a role in the weighting the risks and benefits related to the shadow economy, while social identity and the strength of the institutional environment in Ukraine show whether the social framework in the country are conducive for shadow economy activities.

5.1. Company characteristics

Figure 5.1 shows the size of the shadow economy by region in Ukraine in 2017 and 2018. The biggest size of the shadow economy as it could be foreseen was registered in East region of Ukraine, it slightly exceeded 50% in 2017 and grew to 52% in 2018. After East region with a lag of almost 10%, have gone South and Kyiv city. These regions show positive tendency of shadow index reduction from 43.8% to 40.9% in Kyiv city and from 41.2% to 40.3% in the South. The least shadowed regions are West and North/Centre, for them the index a bit over 30%. Despite the best values among all Ukraine regions, they didn't show positive trends in time: the North/Centre stayed on the same level (30.3%) while the values of West region grew by 2.4% (from 40.3% in 2017 to 41.2% in 2018).

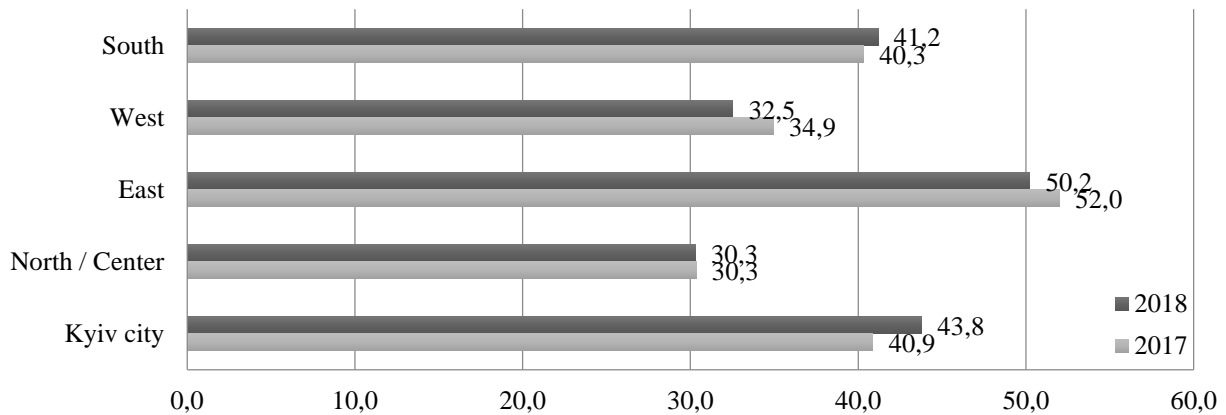


Figure 5.1. Size of the shadow economy (% of GDP) by regions of Ukraine in 2017–2018

Figure 5.2 illustrates how the size of the shadow economy varies by sector of the surveyed firms. In 2018, Retail trade and Construction sectors had the largest sizes of the shadow economy. In Construction, its size was 52.4%, while in the Retail trade, it reached 57.9% and these sectors shows negative dynamics of the changes in the size of the shadow economy. The increasing was on 4.6% in the Retail trade and on 1.7% in the Construction. Closely follows by them the Manufacturing with positive dynamic on reduction to 50.7% in 2018 from 54.5% in 2017.

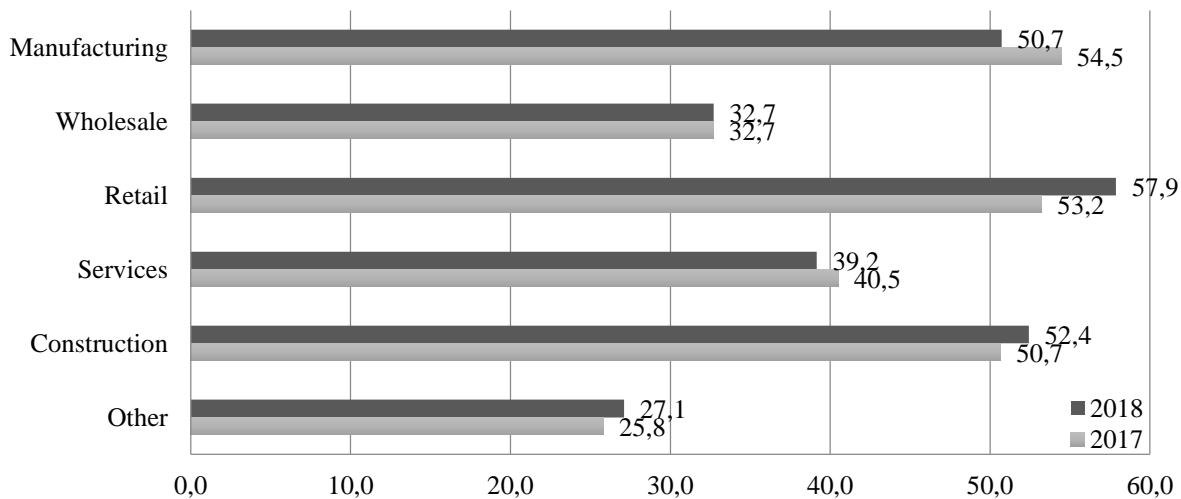


Figure 5.2. Size of the shadow economy (% of GDP) by sectors in Ukraine (2017 – 2018)

The lowest incidence of shadow activities was registered in the sector of Wholesale trade and in the Other sectors. While it stayed constant during years in Wholesale trade (32.7%), it increased in Other sectors from 25.8% in 2017 to 27.1% in 2018. Comparing to mentioned sectors the Services is in the middle of shadow rating with the slight declining from 40.5% in 2017 to 39.2% in 2018.

As Figure 5.3 shows, there is a modest tendency for the level of shadow activity to decrease with the growth of the size of the companies. For Ukrainian companies employing from 1 to 20 people, the level of the shadow economy ranges from 44.5% (firms with 1 to 5 employees) to 53.3% (firms with 11 to 20 employees), whereas it falls down to 32.0% for companies employing between 61 and 100 people. However, the index of the shadow economy again grew to 44.5 for the firms employing from 41 to 60 employees: 53.2%.

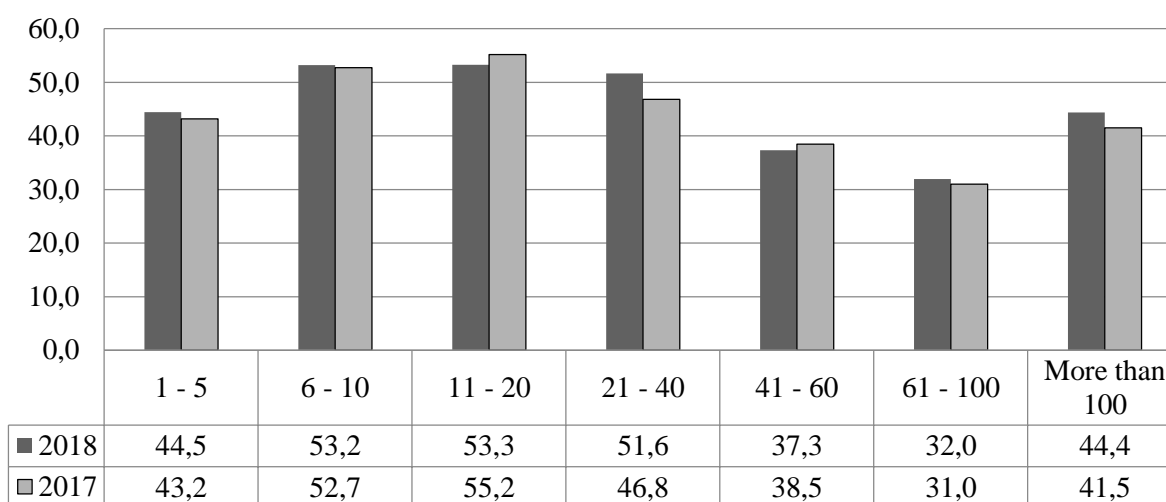


Figure 5.3. Size of the shadow economy (% of GDP) by firm size (number of employees), in 2018

5.2. How attitudes and perceptions affect shadow activity

The decision to evade taxes and to participate in the shadow economy could be affected by the probability of being caught as estimated by business managers and the possible consequences. Over the recent years, Ukraine has reduced payroll tax, on one hand, but increased minimal salary for employees, on the other hand. In addition, fines for unofficial employment were increased dramatically. The size and type of penalties may influence the firms' behaviour, as well as tax morale, firms' attitudes towards risk-taking, and the strength of the institutional framework. In this section, we will analyse the respondent's opinions and attitudes regarding these factors.

5.2.1. Probability of being caught and potential consequences

From the rational choice perspective, the decision to engage in illegal acts, such as shadow economy activities, involves weighting the risks against the expected benefits for business. We assume that the probability of being caught for underreporting business profits, the number of employees or their salaries as well as the probability of being caught paying bribes influence the behaviour of Ukrainian firms.

The perception of the probability of being caught was measured by asking the respondents question about each type of shadow economic activity. The respondents were also asked to evaluate potential consequences for the firm if it were caught for misreporting or bribery.

Figures 5.4 – 5.7 illustrate the results on perceived probabilities of being caught. The highest chance to be caught, as perceived by Ukrainian business managers, is when concealing the number of employees. 36% of the respondents consider this probability to be very high: from 76% to 100% (see Figure 5.5). Nevertheless, almost 17% of the respondents believe that it is impossible to be caught hiding unregistered employees.

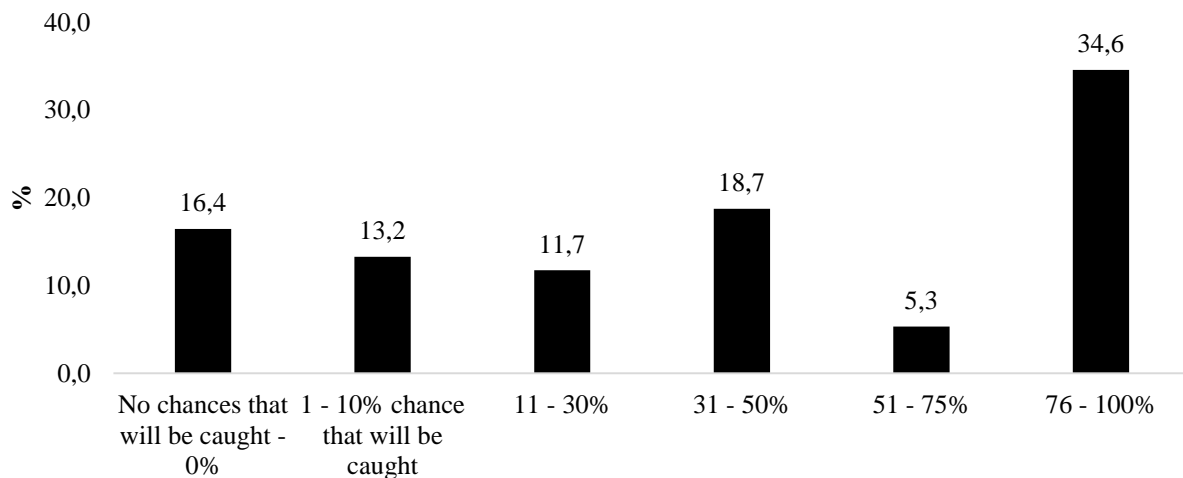


Figure 5.4. Probability of being caught for underreporting business profits in Ukraine, 2018. The vertical axis measures the percentage of responses in each category.

The surveyed business managers perceive concealing business profits as a risky behaviour, too. Almost 35% of the respondents believe that there is a very high (76% – 100%) probability for this violation to be detected, while only 16.4% said there is no chance to be caught for hiding business profits (see Figure 5.4).

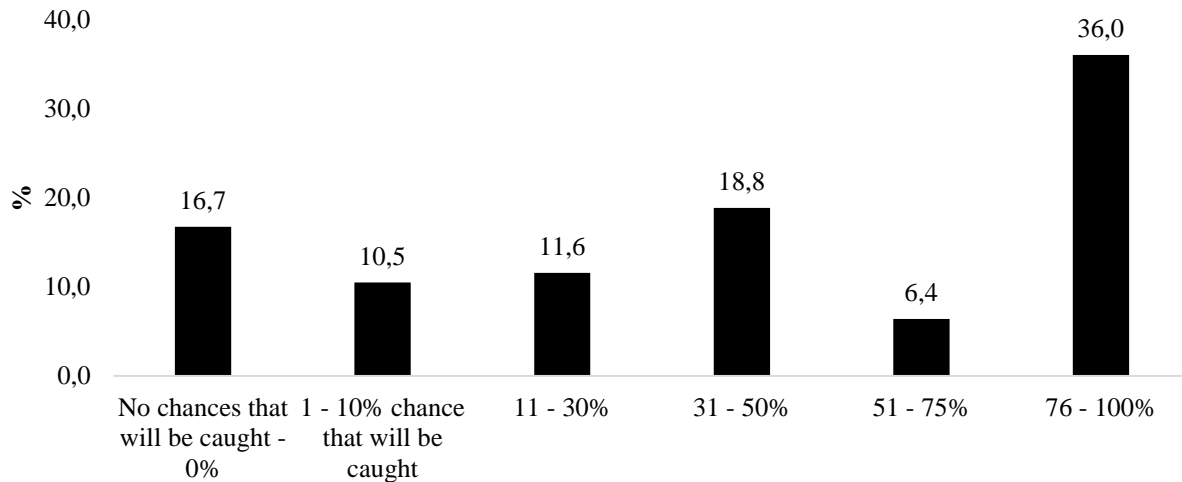


Figure 5.5. Probability of being caught for underreporting number of employees in Ukraine, 2018. The vertical axis measures the percentage of responses in each category.

The chance of being caught underreporting salaries is also quite high, according to the respondents (see Figure 5.6). However, it is lower than the chance to be detected for underreporting the number of employees or business profits: almost 28% of the respondents believe that a Ukrainian firm will be certainly (with 76% – 100% chance) caught if it underreports salaries. On the other hand, 20.5% of the respondents think that there is a zero chance to be caught for this.

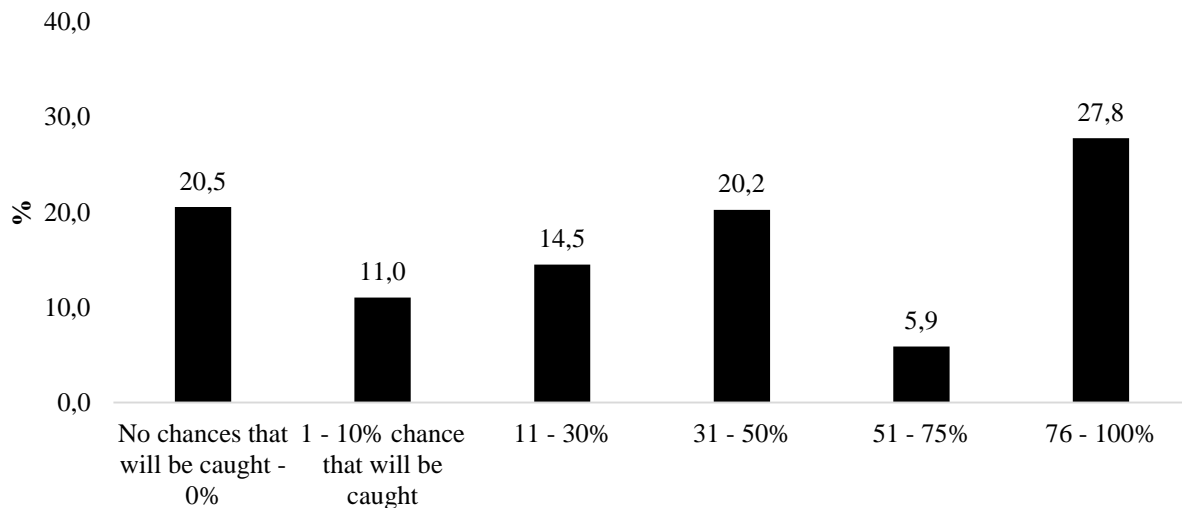


Figure 5.6. Probability of being caught for underreporting salaries in Ukraine, 2018. The vertical axis measures the percentage of responses in each category.

Paying bribes carries the lowest risk of detection for the participants of our survey (see Figure 5.7). It is the only illegal activity where the percentage of the respondents estimating the chance of being caught as zero (29.1%) is higher than the percentage of those who believe it to reach from 76% to 100% (almost 20% of the respondents). This indicates a high tolerance to bribes among Ukrainian business community and a lack of proper legal reaction to them from the public

authorities, which suggests that bribery is a widespread aspect of the shadow economy in Ukraine.

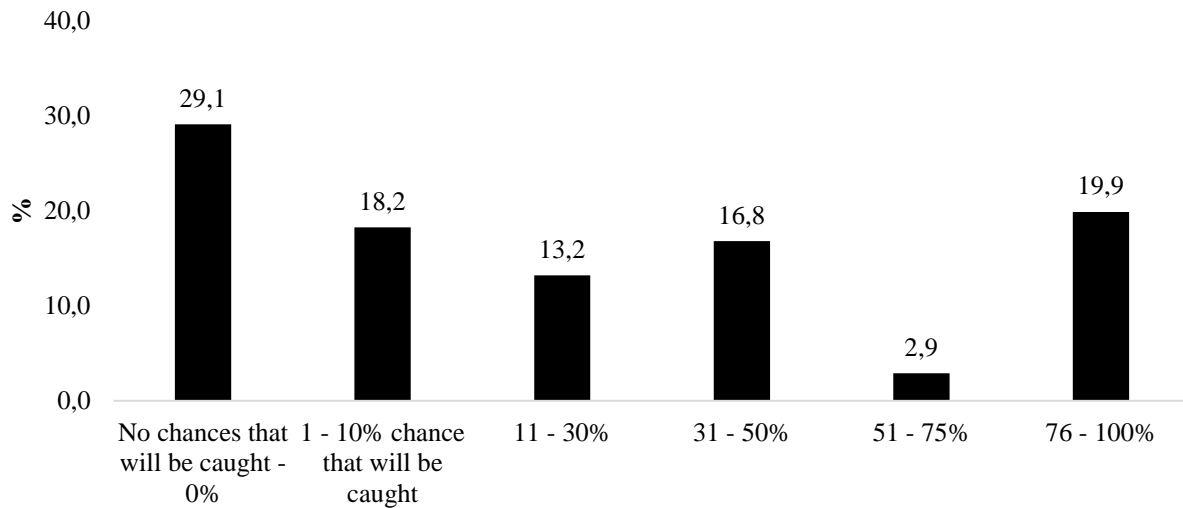


Figure 5.7. Probability of being caught for making payments to ‘get things done’ in Ukraine, 2018. The vertical axis measures the percentage of responses in each category.

Figure 5.8 shows that the most expected consequence of deliberate underreporting is facing a serious fine that would affect the competitiveness of a company. Almost 35% of respondents selected this option. It is likely connected with the fact that recent Ukrainian legislation increased fines for some instances of employing unregistered personnel and preventing government officials from inspections related to labour regulations up to a 100,000 of minimum salaries. 25.6% of the respondents have given a similar answer – but they believe that the fines for intentional misreporting could put a company at the risk of insolvency.

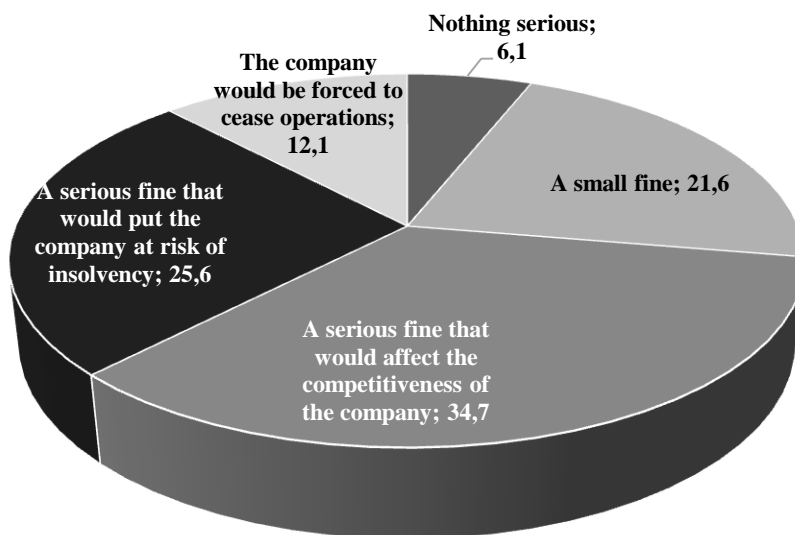


Figure 5.8. Most likely consequences if caught deliberately underreporting in Ukraine, 2018.

A slightly smaller percentage of the respondents – 21.6% – expect only a minor fine in case of violations, while fewer respondents expect to face either very serious consequences (company ceasing operations) or no serious consequences at all.

5.2.2. Tax morale

A higher personal conviction about the value of paying taxes should translate to more compliance and lesser tax evasion. Here, we measure tax morale with a series of questions intended to reveal the respondent’s opinions about the morality and acceptance of tax evasion and the tolerance to bribery. The first of these questions asks business managers to what extent they would agree or disagree with the statement “Companies in your industry would think it is always justified to cheat on tax whenever they have the chance”. Answers to this question are positioned on a scale from 1 (“strongly disagree”) to 5 (“strongly agree”). This question is an adjusted version of a similar World Values Survey question.

The results of the survey indicate that the level of tax morale measured by responses to the above statement is quite high among Ukrainian businesses. More than 75% of the respondents in total said this statement was not true: 30.7% said they “disagreed” and 45% said they “strongly disagreed” (see Figure 5.9). Only slightly over 10% of the respondents agreed that firms in their sector are going to justify evading taxes when given such a chance. Overall, respondents from Ukraine averaged 1.9 on the scale of 1 to 5 mentioned above where ‘1’ is interpreted as very high tax morale, while ‘5’ is interpreted as very low tax morale. This suggests that Ukrainian business managers either don’t think that tax evasion is being justified in their industries or are reluctant to allege that their fellow entrepreneurs might justify evading taxes.

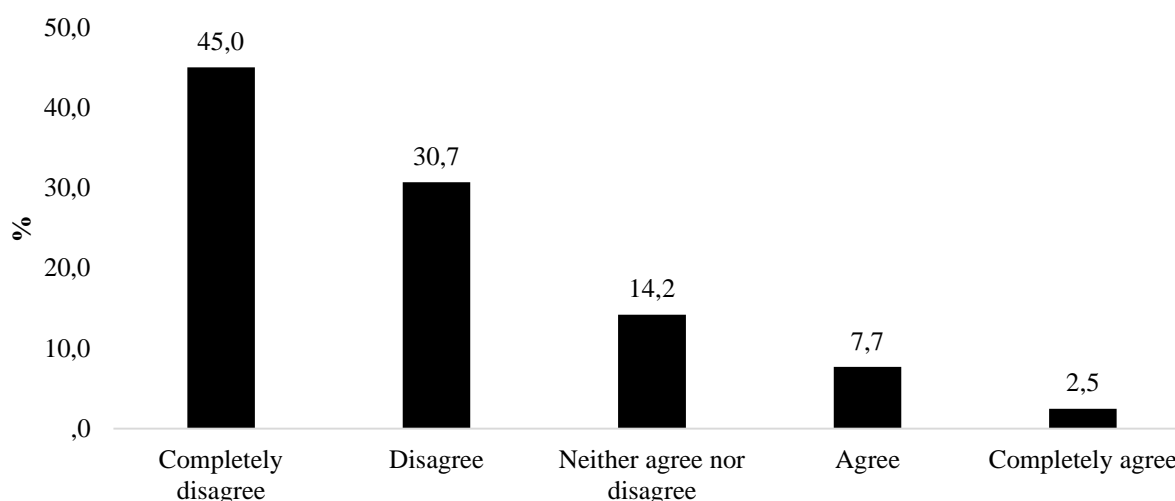


Figure 5.9. Tax morale: responses to the statement “Companies in your industry would think it is always justified to cheat on tax whenever they have the chance” in Ukraine, 2018.

Another aspect of tax morale is tolerance to evading taxes and paying bribes in the society. Business managers are a part of Ukrainian society – therefore, we presume that they may share

social norms regarding bribery and tax evasion. If tolerance to such violations in Ukraine is high, this should entail that the business sector also is more ready to engage in the shadow economy activities. We measure this aspect of tax morale by asking business managers whether they believe that tax evasion and bribery is tolerated behaviour in Ukraine. We calculate tolerance towards tax evasion on a scale from 1 to 5, where 1 means that the respondent strongly disagrees that tax evasion is tolerated behaviour (high tax morale), and 5 means that the respondent strongly agrees that tax evasion is tolerated behaviour (low tax morale). More than half of the respondents believe that evading taxes is not acceptable in Ukraine (27.5% “completely disagreed” with the statement that tax evasion is tolerated, and 28.4% “disagreed” with it).

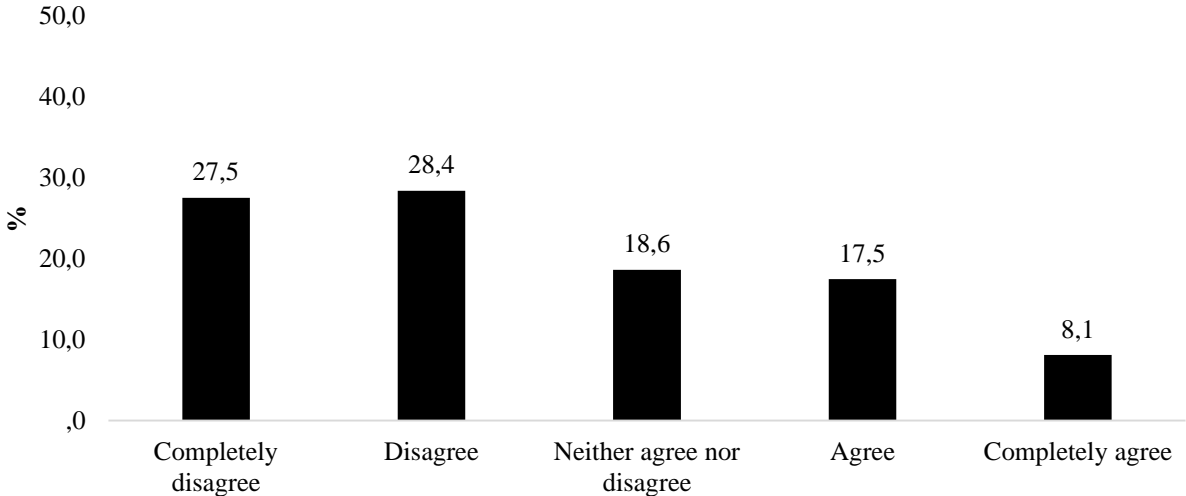


Figure 5.10. Tax morale: tolerance towards tax avoidance in Ukraine, 2018 (responses to the question “Tax avoidance is tolerated behaviour in Ukraine”)

This supports the previous measurement of tax morale (responses to the statement “Companies in your industry would think it is always justified to cheat on tax whenever they have the chance”), but the percentage of the respondents estimating tax morale as high is lower in this case. The country means for tolerance of tax evasion is 2.5, which is higher than the average score for the previous question.

We measure tolerance to bribery also with a scale from 1 to 5, where 1 means that the respondent strongly disagrees that bribery is tolerated behaviour in Ukraine (high tax morale), and 5 means that the respondent strongly agrees that bribery is tolerated behaviour in Ukraine (low tax morale). A slightly higher percentage of respondents considers bribery an unacceptable phenomenon in Ukrainian society. 23.4% of respondents “disagree” and 36.7% “strongly disagree” that paying bribes is tolerated behaviour in Ukraine (see Figure 5.11). The country means for this question is 2.39, which suggests that bribery is tolerated slightly less in Ukraine than tax evasion.

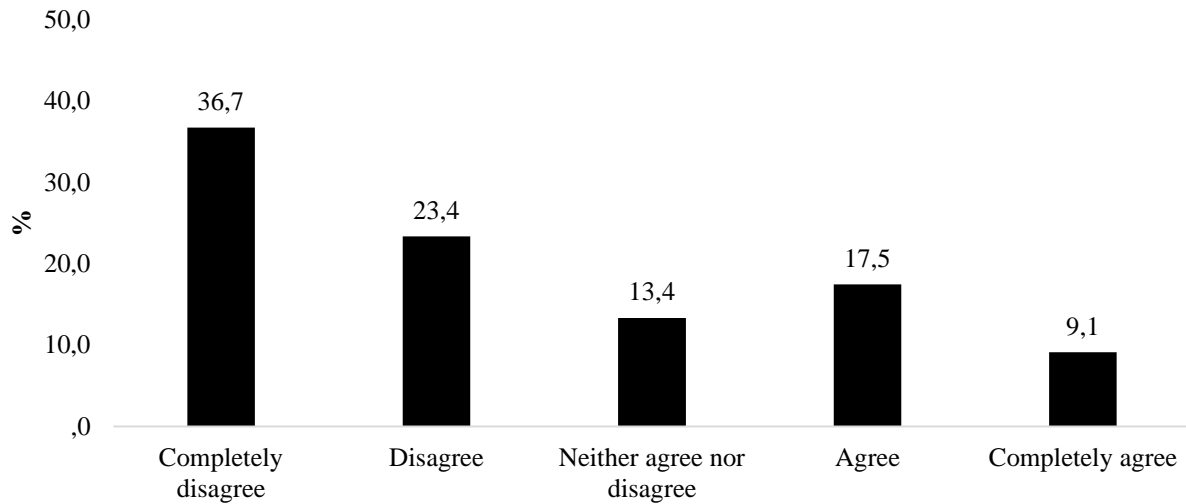


Figure 5.11. Tax morale: tolerance towards bribery in Ukraine, 2018 (responses to the question “Bribery is tolerated behaviour in Ukraine”)

The exploration of these three indicators of tax morale suggests that business managers in Ukraine recognize that tax evasion and bribery may be tolerated in the society, but when speaking about fellow businesses they deny that evading taxes is a preferable choice.

5.2.3. Satisfaction with the government and the tax authority

If businesses managers believe that the government and tax authorities specifically are inefficient or dishonest, it may affect their willingness to comply with tax legislation. In this case, firms may feel that their taxes are being misused or misappropriated, which leads to lower trust and lesser motivation to pay taxes. We measure the satisfaction of business managers with the government using four dimensions: their satisfaction with the administration of taxes by the State Fiscal Service, the government’s tax policy, business legislation, and the government’s support for entrepreneurs.

Figure 5.12 presents the average satisfaction score for every question measured on a scale from 1 to 5 where 1 means very low satisfaction and 5 means very high one. The distributions of responses on each question in 2018 in Ukraine are shown in Figure 5.13. The satisfaction scores for every aspect of the government work and legal framework range from low to moderate.

As shown in Figure 5.12, business managers in Ukraine are most satisfied with the work of the government agency tasked with administrating taxes in Ukraine – the State Fiscal Service. In 2019, this agency was split into two separate bodies responsible for tax and customs policy. But in 2018 – the period of assessment – the State Fiscal Service was still a single body. Therefore, in this question the respondents assessed its work in the field of administrating taxes. However, even having earned the highest average score compared to others, tax authorities in Ukraine still were assessed quite moderately: at 3.2. A relatively higher score could reflect the digitation of

VAT refunds which previously were carried out non-transparently and with significant delays as well as introduction of the online taxpayer’s office where businesses can pay taxes without directly contacting tax authorities.

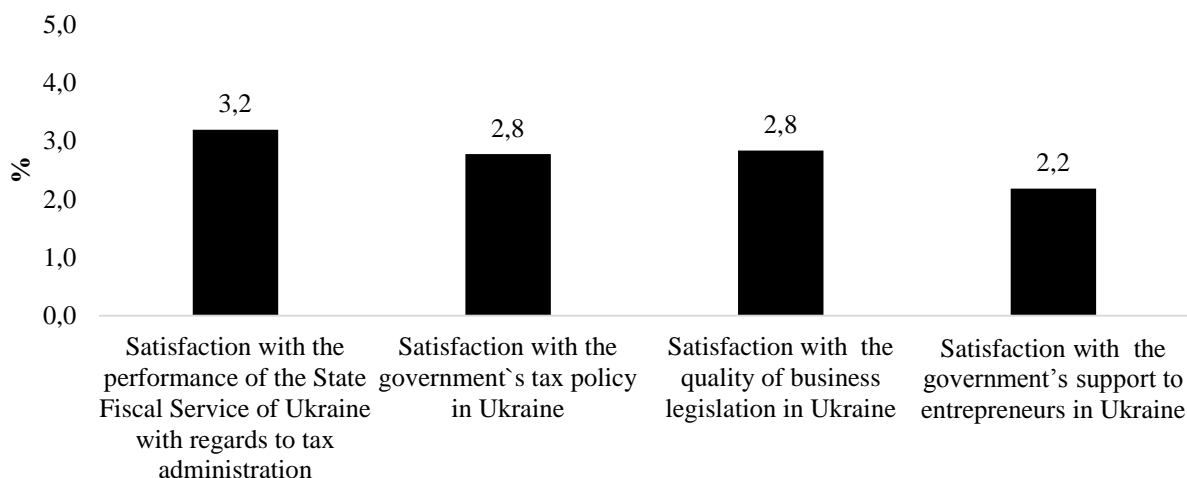


Figure 5.12. Satisfaction with the State Fiscal Service’s work in tax administration area, the government’s tax policy, business legislation, and the government’s support for entrepreneurs in Ukraine, 2018. This figure displays average scores measured on a scale from 1 to 5, where “1” is very low satisfaction and “5” is very high satisfaction.

The respondents’ satisfaction with Ukrainian government’s tax policy and with the quality of business legislation in the country are at the equal and slightly below average level: 2.8. Satisfaction with the government’s support for entrepreneurs received the lowest average score: 2.2. The reasons for this could be difficulties connected to bureaucracy and corruption as well as lack of access to instruments for business development in Ukraine, such as legal and market information or affordable business loans.

The distributions of responses for each questions in Ukraine in 2018 is illustrated in Figure 5.13. It shows that the most noticeable divergence of assessment takes place regarding satisfaction with the work of tax authorities and with the government’s support to entrepreneurs in Ukraine. In case of tax authorities (State Fiscal Service of Ukraine), the percentages of the respondents that report being “satisfied” and “very satisfied” with its work in 2018 are considerably higher than the shares of those that gave similar assessments about other government policies. On the contrary, when speaking about satisfaction with the government’s support to entrepreneurs, the large shares of the respondents who report being “unsatisfied” and “very unsatisfied” stand out compared to others.



Figure 5.13. Satisfaction with the State Fiscal Service's work in tax administration area, the government's tax policy, business legislation, and the government's support for entrepreneurs in Ukraine, 2018.

5.2.4. Institutional environment

Firms find themselves working in a certain set of conditions that influence businesses, an environment for doing business. This environment is shaped by government policies, informal practices and societal norms and attitudes. If they create obstacles for business, it may lower the firms trust to institutions – and this makes compliance with the laws less likely. Therefore, understanding the respondents' attitudes about institutions that shape the environment for doing business contributes to estimation of the probability of shadow economy activities.

In order to assess the impact of institutional environment in Ukraine, we asked business managers to evaluate whether a set of nine formal (laws and regulations) and informal (attitudes and norms) institutions create obstacles for their company. The answers were placed on a scale from “no obstacle (0) to “a minor obstacle” (1), “a moderate obstacle” (2), “a major obstacle” (3), and “a very severe obstacle” (4). The institutions – tax rates, tax administration, trade and customs regulation, business licensing and permits, functioning of the judiciary/courts, uncertainty about regulatory policies, corruption, anti-competitive practices of other competitors, and political instability – are based on the World Bank BEEPS questions.

Figure 5.14 shows the assessment of institutional conditions from the most harmful for businesses to the least ones. Our findings suggest that in 2018, political instability and corruption were perceived as the biggest obstacles for businesses in Ukraine. They received the average score of 2.8 and 2.7 points correspondingly. With the average score of 2.2 points on the 1 to 5 scale each, uncertainty about regulatory policies and tax rates emerged as moderate obstacles for Ukrainian businesses. This indicates that bringing more transparency into the relationships between the private sector and the government, fostering a dialogue with entrepreneurs regarding

regulations, and lowering tax rates for businesses may reduce the size of the shadow economy in Ukraine.

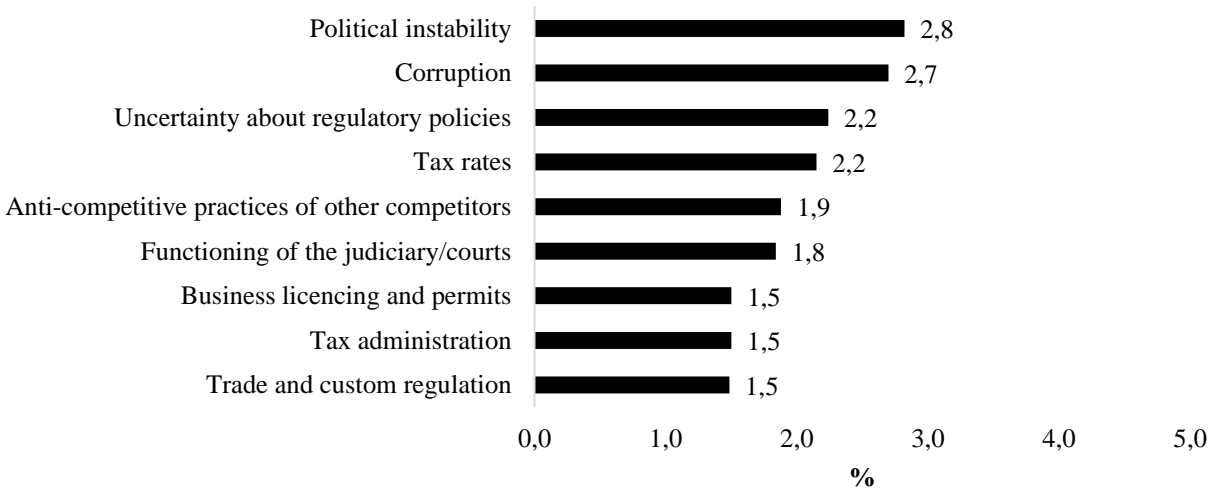


Figure 5.14. Strength of formal and informal institutions in Ukraine (average assessment of each institution as an obstacle for business)

6. Comparison with estimates from other methods

The level of the shadow economy calculated using the shadow economy index is comparable with the estimates by Schneider (2018) but differs significantly from the estimations by the Ministry of Economic Development and Trade of Ukraine (see Figure 6.1).

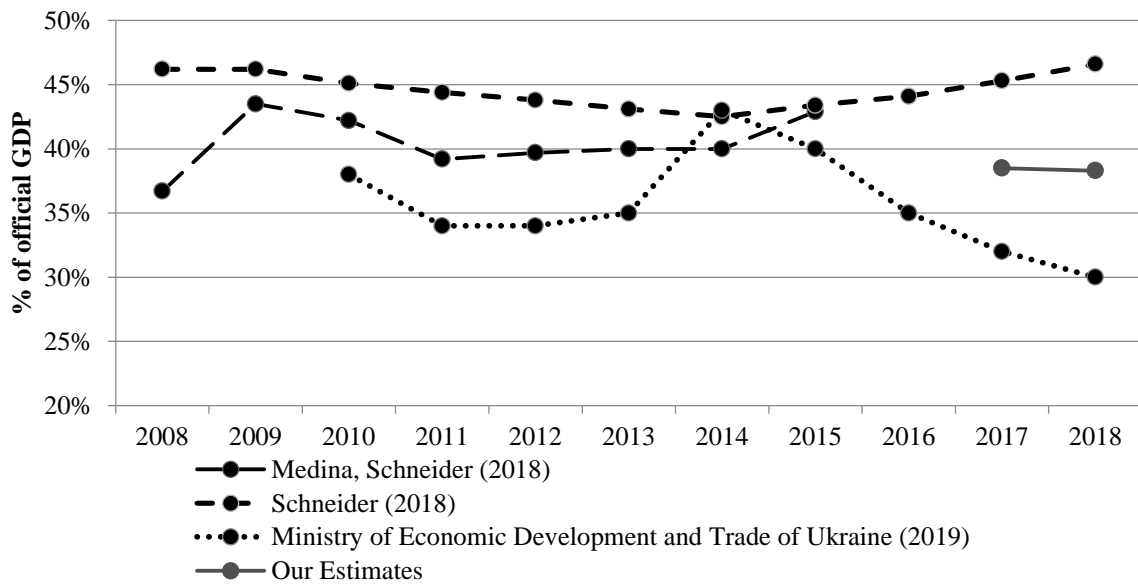


Figure 6.1. Estimates of the size of the shadow economy (% of official GDP), various sources, Ukraine²³

²³ Shneider (2018): preliminary values.

Over the recent years, several methodologies have been used to gauge the size of the shadow economy in Ukraine. Their results and dynamics differ to a large extent, which can be explained by the fact that they use indicators to measure the size of the shadow economy. A primary reason for this could be that the definitions of the shadow economy itself vary.

While Medina and Schneider methodology that uses the MIMIC method estimated the size of the shadow economy as about 43% in 2015, their more recent estimates were unavailable at the time of writing this report. Schneider's preliminary estimates in 2018 put the size of the shadow economy in Ukraine at almost 47% of overall GDP.

On the contrary, the integral indicator of the shadow economy in Ukraine as calculated by the country's Ministry for Economic Development and Trade of Ukraine (MEDTU) is considerably lower. In 2017, it estimated Ukraine's shadow economy as 32% of GDP, and in 2018, as 30%. Its highest value was recorded in 2014 when the size of the shadow economy in Ukraine was estimated as 43%. Since then, the value of this indicator has been decreasing, which suggests that the shadow sector of Ukrainian economy is shrinking. It contradicts the dynamics of the size of the shadow economy in Ukraine as calculated by Friedrich Schneider: in 2014, it was at its lowest value of 42.5% and has been increasing ever since.

Our method shows estimates that are right average between Schneider method and the MEDTU method. Our index of the shadow economy is a little over 38%. When the Schneider and the MEDTU methods have different dynamics with abrupt changing the estimated by our method decrease very slight like making balance between two others.

7. Discussion and Conclusions

This report shows estimates of the size and composition of the shadow economy in Ukraine during 2017–2018 and presents the analysis of various factors that may influence firms' decision to participate in the shadow economy activities. The analysis was carried out using the data of the survey of Ukrainian firms.

Our analysis shows that there is a significant difference in the size and dynamics of the shadow economy in Ukraine when measured using different methods. Ukraine's Ministry of Economic Development and Trade data suggest that in 2018, the shadow economy in the country was at its lowest level since 2014, while Schneider's 2018 calculations show an opposite trend – that the shadow economy is on the rise. Our calculations are balancing between estimates from two others methods.

The difference between the approaches to measuring shadow economy and their results sends conflicting signals both to Ukrainian policy makers and international investors, donors, and other

interested parties. We believe that in this case it is helpful to obtain the data from local businesses, as our survey does, and to view the shadow economy as a complex issue involving misreporting practices, tax morale, and institutional environment. These aspects of the shadow economy are presented and discussed in this report.

Underreporting the size of the employees' salaries and business income are the most widespread types of misreporting in Ukraine according to the estimations of the surveyed firms. The survey suggests that they occur more often than underreporting of the number of employees. While tax rate is most probably the reason why Ukrainian businesses underreport the size of salaries, the factors motivating businesses to hide their profits are most likely not limited to the size of taxes.

Firms with higher profits do not fit the criteria for single tax payers and should transfer to a more complicated general tax system, which not only increases their taxes, but brings more government oversight to them. From the policy making perspective, this indicates that simplifying the general taxation system and reducing administrative costs connected with government inspections may reduce underreporting of profits.

The geographic regions of Ukraine are quite homogenous regarding the size of the shadow economy. This means that the factors contributing to the shadow economy in the country are probably connected to the national institutional framework, and therefore this problem should be addressed at the national level. A tendency of moderate decrease of the size of shadow economy with the reduction of the number of employees at firms in Ukraine points out to the possibility that smaller firms are expectedly less likely to be detected misreporting their business activities and indicators, which decreases their risks. And while the differences among sectors are insignificant, the data suggest that construction and retail trade are the sectors comparatively more engaged in shadow economy activities.

Ukrainian business managers are quite sure that they are likely to be caught underreporting business profits and the number of employees. However, the chance of being caught for bribery was estimated as the lowest compared to other violations. This may increase the motivation of Ukrainian businesses to pay bribes to public authorities. In addition, it points to the lack of proper reaction to bribery from the law enforcement system in Ukraine.

While business managers mostly disagree with the idea that local companies would justify the idea of evading taxes if given the chance, they are less convinced that tax evasion is not accepted in Ukraine in general. This could mean that while business managers recognize a degree of tolerance to tax evasion in the society as a whole, they do not wish to implicate themselves or other businesses in being ready to violate the laws.

Institutional environment is critical when considering conditions for doing business. Factors like tax rates and administration of taxes as well as the opportunity to work in a transparent and

predictable environment influence the firms' trust towards the government and their willingness to comply with legislation. Our survey shows that political instability and corruption are two major obstacles affecting Ukrainian businesses, which most likely contributes to the high level of the shadow economy in the country.

The results of our analysis presented in this report offer an in-depth exploration of the underlying reasons for the shadow economy in Ukraine. We hope that this analysis will benefit policy makers who seek to improve the environment for doing business in the country and to bring more transparency and trust between the businesses and the government.

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Appendix 1. Questionnaire form used in Ukraine

KYIV INTERNATIONAL INSTITUTE OF SOCIOLOGY

ENTREPRENEURS' SATISFACTION WITH BUSINESS CLIMATE / INFORMAL ENTREPRENEURSHIP IN UKRAINE

February – may 2019

ENTERPRISES SURVEY

DEAR ENUMERATOR!

SAY HELLO TO THE RESPONDENT AND DO NOT PAY ATTENTION ON THE LANGUAGE TO FIND OUT WHICH LANGUAGE IS EASIER FOR THE RESPONDENT TO SPEAK WITH YOU:

Добрий д[е]нь (в[е]ч[е]р)

Hello, my name is _____. I am a survey enumerator, and I am working with the Kyiv International Institute of Sociology and we are conducting a survey aimed at understanding entrepreneurs' satisfaction with entrepreneurship climate in Ukraine.

DEPENDING ON THE RESPONDENT'S ANSWER TO THE WELCOME GO TO AN APPROPRIATE LANGUAGE, IF IT IS DIFFICULT TO DETERMINE ASK WHICH LANGUAGE IS MORE COMFORTABLE FOR COMMUNICATION

UKRAINIAN.....1 → CONDUCT THE INTERVIEW IN UKRAINIAN
RUSSIAN.....2 → SWITCH ONTO THE RUSSIAN QUESTIONNAIRE AND
CONDUCT THE INTERVIEW IN RUSSIAN

I.1 Can you please confirm that you are the owner or general manager (director, senior manager, financial manager etc.) of this company / enterprise?

Yes	1	No	2
-----	---	----	---

[IF «YES», CONTINUE THE INTERVIEW,

IF «NO», FOLLOWING THE GUIDELINE TRY TO AGREE THE INTERVIEW WITH SOMEONE OF OWNERS OR MANAGERS AT TIME CONVENIENT FOR HE / SHE]

We are conducting a survey aimed at understanding entrepreneurs' satisfaction with entrepreneurship climate (environment) in Ukraine. The main interest of the study is to find out how various government initiatives implemented and entrepreneurs' satisfaction with business climate influences entrepreneurial behavior, including tax avoidance.

I would like to emphasize that we are only interested in your expert opinion and in no way are we indicating, for instance, that your company is involved in any type of tax avoidance activities. Your company has been chosen randomly, along with several hundred other companies.

The interview will last approximately 10 minutes. We guarantee 100% confidentiality as neither your name nor your company's name will appear in the data analysis. Data will be analyzed using a computer program without any reference to the data source.

Could you give me about 10 minutes of your time?

IF THE RESPONDENT HAS NO TIME NOW / OPPORTUNITY TO REPLY, AGREE FOR AN INTERVIEW AT A CONVENIENT TIME FOR HE / SHE

IF RESPONDENT HESITATES OR SAYS «NO»:

This survey is very important to foster the knowledge about the entrepreneurship in Ukraine. By participating in this survey you are helping to improve such knowledge and understand needs of entrepreneurs. All your answers will be 100% confidential and no one will be able to track you or your company. Moreover, we are interested in your expert opinion and what you say will be attributed to the industry or your competitors, not your firm.

[IF CATEGORICAL «NO», STOP THE INTERVIEW AND FOLLOWING THE GUIDELINE START THE NEXT INTERVIEW]

I.2. DATE AND START TIME OF INTERVIEW: [TO BE AUTOMATICALLY CAPTURED BY PROGRAM]

I.3. QUESTIONNAIRE ID: [TO BE AUTOMATICALLY CAPTURED BY PROGRAM]

I.4. COMPANY ID: (BY THE SAMPLE) |_|_|_|_|

I.5. STRATA BY THE COMPANY SIZE: (BY THE SAMPLE) Large / Medium 1
Small / Micro 2

I.6. TYPE OF ECONOMIC ACTIVITY (CODE BY KVED): (BY THE SAMPLE, ADD TO DATA FILE) |_|_|_|_|. |_|_|_|_|

Thank you for taking time to speak with me.

I.7.1 First of all, I would like to ask in what oblast of Ukraine is your company is located?
[Q.23 TO BE AUTOMATICALLY CAPTURED BY PROGRAM]

<i>I.7.1. OBLAST</i>		<i>Q.23. REGION</i>		<i>I.7.1. OBLAST</i>		<i>Q.23. REGION</i>	
Kyiv	2	Kyiv	5	Mykolaivska	15	South	1
Kyivska	3	North / Center	4	Odeska	16	South	1
Vinnyska	4	North / Center	4	Poltavska	17	North / Center	4
Volynska	5	West	2	Rivnenska	18	West	2
Dnipropetrovska	6	East	3	Sumska	19	North / Center	4
Donetska (government-controlled areas)	7	East	3	Ternopil'ska	20	West	2
Zhytomyrska	8	North / Center	4	Kharkivska	21	East	3
Zakarpatska	9	West	2	Khersonska	22	South	1
Zaporizka	10	South	1	Khmelnytska	23	West	2
Ivano-Frankivska	11	West	2	Cherkaska	24	North / Center	4
Kirovohradska	12	North / Center	4	Chernivetska	25	West	2
Luhanska (government-controlled areas)	13	East	3	Chernihivska	26	North / Center	4
Lvivska	14	West	2	AR Krym, Sevastopol, Donetska or Luhanska (NGCA)		→ END OF INTERVIEW	

SECTION I. External factors of influence

Please evaluate your satisfaction with:

		Very unsatisfied	Unsatisfied	Neither satisfied nor unsatisfied	Satisfied	Very satisfied	DN/RA
Q.1	the performance of the State Revenue Service of Ukraine with regards to tax administration during 2018?	1	2	3	4	5	99
Q.2	the government's tax policy during 2018?	1	2	3	4	5	99
Q.3	the quality of business legislation during 2018?	1	2	3	4	5	99
Q.4	the government's support to entrepreneurs during 2018?	1	2	3	4	5	99

How much do you agree with the following statements?

		Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree	DN/RA
Q.5	Tax avoidance is tolerated behavior in Ukraine	1	2	3	4	5	99
Q.6	Bribing is tolerated behavior in Ukraine	1	2	3	4	5	99

SECTION II. Government policy and amount of informal business

Q.7 Please estimate the degree of underreporting business income (profits) by firms in your industry:

Q.7.1 in 2018? % DN/RA ...999

Q.7.2 in 2017? % DN/RA ...999

Q.8 Please estimate the degree of underreporting number of employees (% of actual number of employees) by firms in your industry:

Q.8.1 in 2018? % DN/RA ...999

Q.8.2 in 2017? % DN/RA ...999

Q.9 Please estimate the degree of underreporting salaries paid to employees by companies in your industry (for instance, if in reality an employee receives EUR 400, but the reported salary is EUR 100, then underreporting is 75%; if EUR 400 and EUR 200, then underreporting is 50%):

Q.9.1 in 2018? % DN/RA ...999

Q.9.2 in 2017? |_|_|_|% DN/RA ...999

Q.10 On average, approximately what percent of revenue (turnover) did firms in your industry pay in unofficial payments to «get things done»:

Q.10.1 in 2018? |_|_|_|% DN/RA ...999

Q.10.2 in 2017? |_|_|_|% DN/RA ...999

Q.11 In 2018 working with government, what part of the contract value would firms of your industry typically offer in unofficial payments to ‘secure’ the contract?

|_|_|_|% DN/RA ...999

Q.12 In some industries, in addition to registered companies such as yours, unregistered enterprises also operate but do not report any of their activity to authorities. In your opinion, what percentage of your industry's total production of goods/services is carried out by unregistered enterprises:

Q.12.1 in 2018? |_|_|_|% DN/RA ...999

Q.12.2 in 2017? |_|_|_|% DN/RA ...999

Q.13 What is the size of the average unregistered typical enterprise in your industry compared to your company (e.g., if the average unregistered typical enterprise is half as big then record 50%, if twice as big then 200%):

Q.13.1 in 2018? |_|_|_|% DN/RA ...999

Q.13.2 in 2017? |_|_|_|% DN/RA ...999

Q.14 For a typical company in your industry, what would you say is the approximate probability (0-100%) of being caught if the company were to:

Q.14.1 underreport its business income?

|_|_|_|% DN/RA ...999

Q.14.2 underreport its number of employees?

|_|_|_|% DN/RA ...999

Q.14.3 underreport the amount of salaries it pays to employees?

|_|_|_|% DN/RA ...999

Q.14.4 make unofficial payments to «get things done»?

|_|_|_|% DN/RA ...999

Q.15. In your opinion, if a company in your industry were caught for deliberate misreporting, what would typically be the consequence to that company? [SELECT ONLY ONE RESPONSE]

Nothing serious	1	A serious fine that would put the company at risk of insolvency	4
A small fine	2	The company would be forced to cease operations	5
A serious fine that would affect the competitiveness of the company	3		DN/RA 99

SECTION III. Company

Q.16 What is the approximate percentage change in your operating profit, turnover and total employment in 2018 compared to 2017? [PUT «+» OR «-» DEPENDING ON IF INCREASED OR DECREASED AND TO WHAT EXTENT (E.G., +20%, -15%). PUT «0», IF NO CHANGES. PUT CODE «777 – NOT APPLICABLE» IF COMPANY STARTED TO OPERATE IN 2018 OR 2019]

Q.16.1 Operating profit?	+/- _ _ _ %	NOT APPLICABLE	777	DN/RA ...999
Q.16.2 Turnover?	+/- _ _ _ %	NOT APPLICABLE	777	DN/RA ...999
Q.14.3 Total employment?	+/- _ _ _ %	NOT APPLICABLE	777	DN/RA ...999

Q.17 Approximately, what was the operating profit of your company in 2018, in EURO?

_____EUR DN/RA ...999

IF FOR RESPONDENT IS DIFFICULT TO EVALUATE IN EURO ASK HOW MUCH IN UAH

Q.17.a _____UAH DN/RA ...999

Q.18 Approximately, what was the turnover of your company in 2018, in EURO?

_____EUR DN/RA ...999

IF FOR RESPONDENT IS DIFFICULT TO EVALUATE IN EURO ASK HOW MUCH IN UAH

Q.18.a _____UAH DN/RA ...999

Q.19 Approximately, how many employees are currently employed in your company at full time equivalent?

_____EMPLOYEES DN/RA...999

Q.20 Approximately what was the average reported salary in your company in EUR/month:

Q.20.1 in 2018? |_|_|_| EUR / MONTH DN/RA ...999

IF FOR RESPONDENT IS DIFFICULT TO EVALUATE IN EURO ASK HOW MUCH IN UAH

Q.20.1.a IN 2018? _____ UAH / MONTH DN/RA ...999

Q.20.2 in 2017? |_|_|_| EUR / MONTH DN/RA ...999

IF FOR RESPONDENT IS DIFFICULT TO EVALUATE IN EURO ASK HOW MUCH IN UAH

Q.20.2.a IN 2017? _____ UAH / MONTH DN/RA ...999

Q.21 In which year did your company start operation? [NOTE YEAR] |_|_|_|_| DN/RA ...99

Q.22 What is the main activity (i.e. sector) that your company is engaged in? [SELECT ONLY ONE RESPONSE]

Manufacturing	1
Wholesale	2
Retail	3
Services [PLEASE, SPECIFY] _____	4
Construction	5
Other [PLEASE, SPECIFY] _____	6
	DN/RA 99

IF Q.22 = 4 (SERVICES), SPECIFY

Q.22.4.TXT Please, tell me, what exact services does your company provide. [NOTE]

IF Q.22 = 6 (OTHER), SPECIFY

Q.22.6.TXT Please, tell me, what is exactly activity of your company. [NOTE]

Q.23 THE REGION IN WHICH THE COMPANY CONDUCT MOST OF ITS BUSINESS [TO BE AUTOMATICALLY CAPTURED BY PROGRAM. COPY OF I.7.2.]

South	1	West	2
East	3	North/Center	4
Kyiv	5		

SECTION IV. Attitudes / tax morale / barriers to business

Q.24 For each of the following statements, please indicate on a scale of 1 to 5 whether you agree (1 means you completely disagree, 5 means you completely agree):

		Strongly disagree	Disagree	Neither agree/disagree	Agree	Strongly agree	DN/RA
Q.24.1	Such business as yours contributes a lot to growth of the Ukrainian economy and society in general	1	2	3	4	5	99
Q.24.2	Companies in your industry would think it is always justified to cheat on tax if they have the chance	1	2	3	4	5	99
Q.24.3	Being a member of the Ukrainian community is important to me	1	2	3	4	5	99

Q.25 As I list some factors that can affect the current operations of a business, please tell me if you think that each factor is No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment:

		No obstacle	Minor obstacle	Moderate obstacle	Major obstacle	Very severe obstacle	DN/RA
Q.25.1	Tax administration	0	1	2	3	4	99
Q.25.2	Tax rates	0	1	2	3	4	99

Q.25.3	Trade and custom regulation	0	1	2	3	4	99
Q.25.	Business licensing and permits	0	1	2	3	4	99
Q.25.	Functioning of the judiciary/courts	0	1	2	3	4	99
Q.25.	Uncertainty about regulatory policies	0	1	2	3	4	99
Q.25.	Corruption	0	1	2	3	4	99
Q.25.	Anti-competitive practices of other competitors	0	1	2	3	4	99
Q.25.	Political instability	0	1	2	3	4	99

If you would like to receive the results of this study, please tell us what email we can send them to?

Yes	1	Email [NOTE]: _____@_____
No	2	

Thank you for your time.

Appendix 2. Observed and non-observed components of GDP

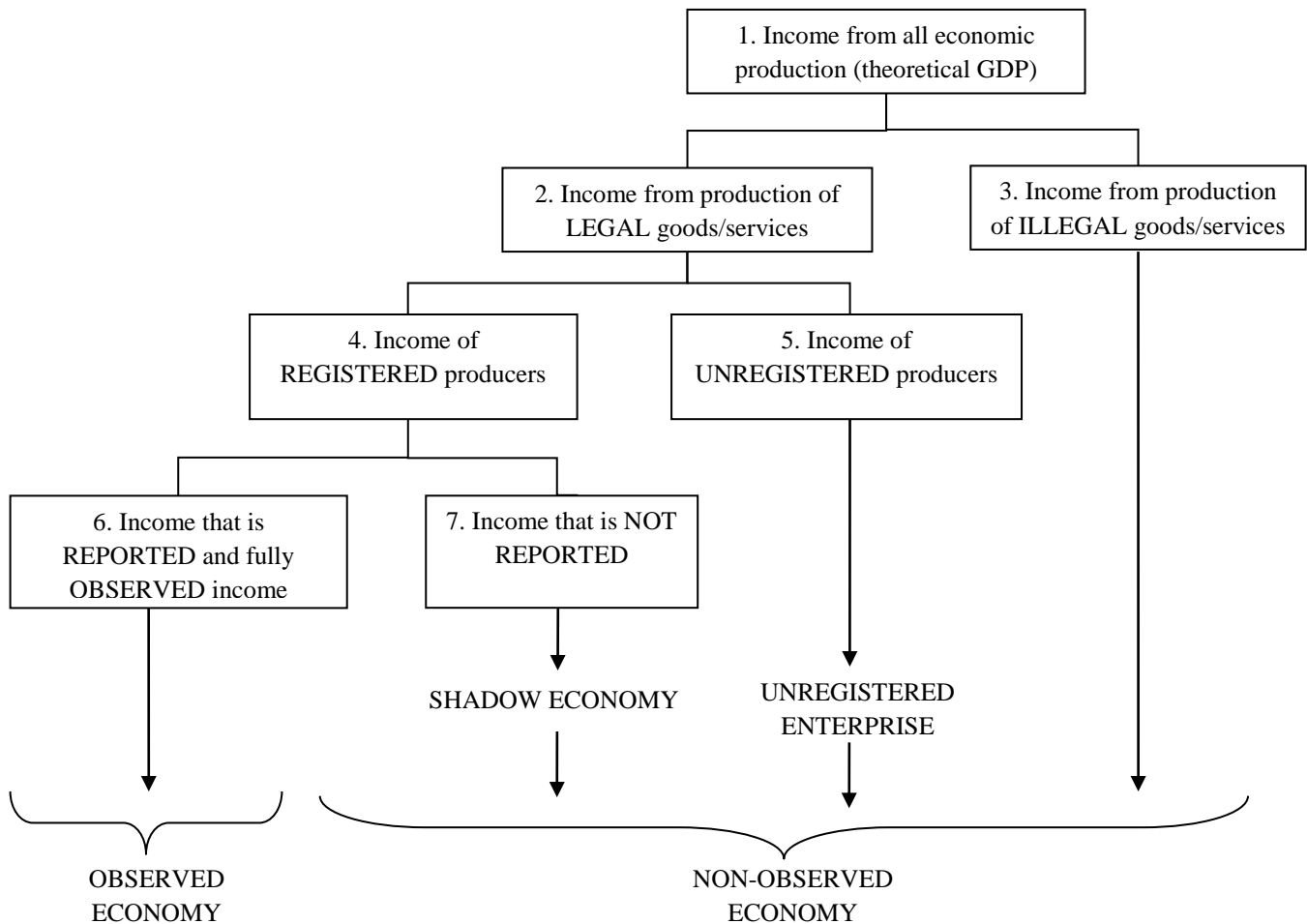


Figure A2. Observed and non-observed components of GDP

Notes on some of Components 1-7 follow. Income refers to both business income and employee income. Illegal production (3) includes production of goods/services that are illegal regardless of who produces them (e.g., narcotics, prostitution) and production of goods that themselves are legal but the production is illegal because it is carried out by an unauthorised producer (e.g., unlicensed surgeons, unlicensed production of alcohol). Goods/services that are produced legally (2) can still involve breaches of the law at the registration or reporting stage (e.g., intentional underreporting of profit to evade taxes). Most of the income generated from producing legal goods is reported by registered firms and therefore fully captured in official GDP (6). However, some proportion of income is intentionally hidden from authorities either by not registering the enterprise (5) or by misreporting wages or company earnings (7). Following other studies, we refer to the latter (7) as the ‘shadow economy’ and use the term ‘non-observed’ economy in a broader sense, referring to illegal goods/services, activities of unregistered enterprises and the shadow economy.