
Measurement of Grey Economy and System Ways of Limiting it – Polish Example

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Abstract:

Purpose:

The aim of this article is to present results of estimating grey economy in Poland and detailed presentation of chosen solutions of legal-organisational and IT type introduced to Polish tax system in order to limit grey economy.

Design/Methodology/Approach: The authors presented detailed analyses of empirical material from reports and surveys including those from the Central Statistical Office, the State Fiscal Administration, the Institute of Forecasting and Economic Analyses and the Ministry of Finance moreover they also included results of estimating grey economy by international experts for Europe and the world. In the article a descriptive and analytical-synthetic method was used. The article is a continuation of many years of research in the area of grey economy.

Findings: An evaluation of grey economy must take into consideration advantages and disadvantages. Negative points are falsifying economic statistics, decreasing tax incomes to the state budget, faulty construction of macro-economic policy, false allocation of social funds. Functioning of economic entities in grey economy leads to destruction of social-economic life generating pathologies. An advantage of grey economy is an increasing number of working places, particularly for marginal workforce. People employed in this economy while not paying taxes directly, regulate indirect taxes, purchase goods and services taxed.

Practical Implications: In order to more efficiently limit grey economy in Poland, it is necessary to constantly and systematically perform actions of a system type and not coercive. An important element is primary tax education and building tax mentality and morality.

Originality/Value: The article presents a scope of actions taken and implemented by the government in the area of limiting grey economy in Poland in the last 5 years – economic-legal perspective of a problem. It constituted a basis for further research.

Keywords: Grey economy, state budget, limiting grey economy.

JEL Classification: E26, H30, K34.

Paper Type: Research Paper

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1. Introduction

In a literature of a case study we can find many synonyms of grey economy (in an alphabetic order): alternate, autonomous, black economy, black cash, clandestine, concealed, counter, criminal economy, dark economy, dual, grey economy, hidden economy, informal economy, irregular economy, invisible, irregular, marginal, moonshine economy, non-observed economy, occult, other, parallel economy, peripheral, second economy, shadow economy, submerged, subterranean, twilight, undeclared economy, underground economy, unexposed, unofficial economy, unrecorded economy, unregistered economy, unreported economy, untaxed, underwater.

The researchers of the grey economy proposed few definitions. One of them defines grey economy as all economic activities that contribute to official (or observable) creation (increase) of GDP and are not directly registered (Schneider and Ernest, 2000). Another definition defines as economic activities that are unintended or are not registered and are not in accordance with the existing law (Feige, 1979). Grey economy is a financial area of healthy state economy where income, from activities that are not prohibited by the law, are hidden in total or partially from state, fiscal and customs administration etc. It is an illegal turnover of legal goods and services.

Due to the fact that there is no constant definition of grey economy area, the authors of the article point out a necessity to use many research methods in order to evaluate lost income from a state budget measured as Gross Domestic Product % (GDP). The authors are also aware of the fact that each method gives different results in estimating grey economy, but all the methods focus on indicating its dynamics and a direction of changes (Smuga, 2005).

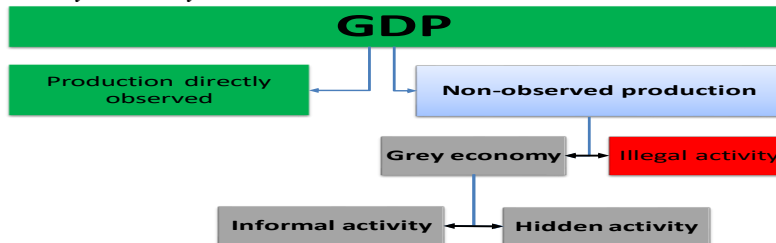
2. Estimating Grey Economy and a Scope of Illegal Activities

A superior characteristic of a system of national accounts, effective in countries of the European Union is to ensure completeness of GDP estimation (and gross domestic income). That is, directly next to an observable production through statistical research or administrative data, taking into consideration a non-observable production, including grey economy and illegal activity. Grey economy entails productive activities in an economic meaning, totally legal (in terms of complying with the norms and legal regulations) but are hidden from official authorities in order to avoid (GUS, 2015):

- Paying income tax, value added tax (VAT) and other taxes,
- Paying National Insurance contributions,
- Following law restrictions such as: minimum wage rate, maximal working time, work safety conditions,

- Administrative procedures such as completing statistical questionnaires and other forms.

Scheme 1. Grey economy - GDP



Source: Self-study on the basis of Polish Central Statistical Office methodology estimating grey economy in Poland, (GUS, 2015, 2016, 2019).

The core of grey economy is to hide the whole or a part of an income in order to avoid taxation, employ people illegally, register freelancers as unemployed. The biggest part of grey economy, so called hidden economy, constitutes unregistered turnovers and transactions of illegally existing units. In particular, it relates to decreasing incomes and illegal employment which means dividing remuneration into an official part and the one paid under-the-table and as a consequence paying lower social insurance contributions or not paying it at all.

3. Measuring Grey Economy in Poland

A size of grey economy in Poland is measured by a Polish Central Statistical Office on the basis of national accounts as % in generating GDP. Data that is presented by PCSO for 2010-2017 include calculations for a size of grey economy referring to:

- Registered economic units with a number of workers up to 9, regardless of a legal form and units from a private sector without co-op with working from 10-49 people.

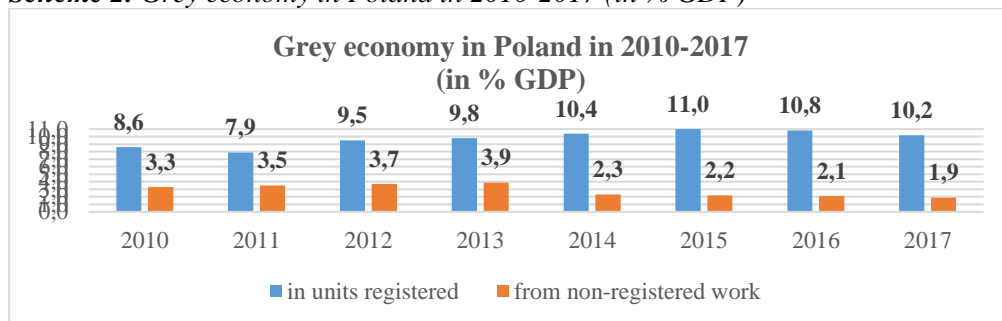
An analysis allows to state that these measurements were made for:

- Underrated production and income in information passed to statistics,
- Avoiding payment of goods and services tax (so called VAT fraud);
- Natural person in virtue of non-registered work, in majority from services activities, including sexual services.

Polish Central Statistical Office research in the area of illegal activity allowed to determine sectors in Poland that are exposed to grey economy the most. These are:

- trade and vehicles repair, accommodation, and gastronomy,
- construction,
- real estate service,
- industry,
- transport and warehouse managements,
- other sectors.

Scheme 2. Grey economy in Poland in 2010-2017 (in % GDP)



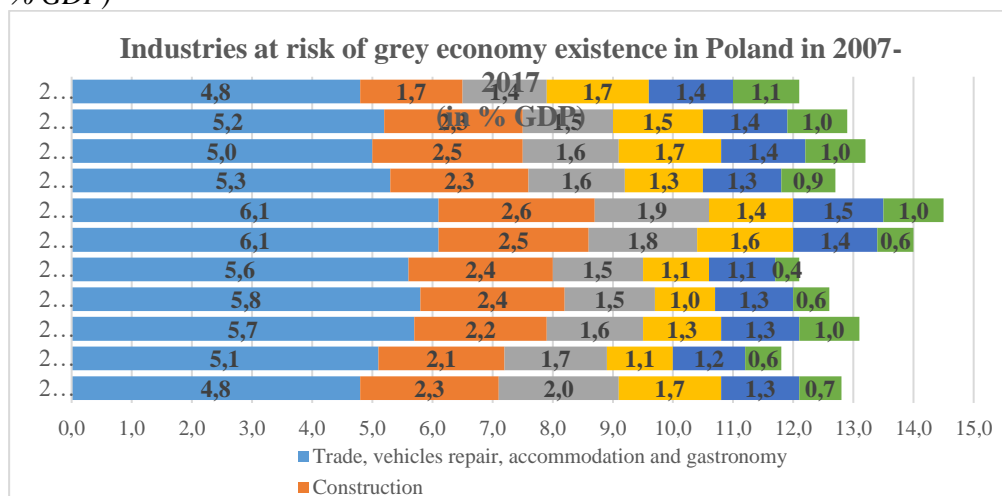
Source: Self-study on the basis of National accounts due to a division, into institutional sectors and sub-sectors in 2010-2013, 2011-2014, 2014-2017, (GUS, 2015, 2016, 2019).

Scheme 3. Grey economy in Poland in 2010 - 2017 (in mln PLN)



Source: Self-study on the basis of National accounts due to a division into institutional sectors and sub-sectors in 2010-2013, 2011-2014, 2014-2017, (GUS, 2015, 2016, 2019).

Scheme 4. Industries at risk of grey economy existence in Poland in 2007-2017 (in % GDP)



Source: Self-study on the basis of National accounts due to a division into institutional sectors and sub-sectors 2010-2013, 2011-2014, 2014-2017, (GUS, 2015, 2016, 2019).

Illegal activity entails:

- production of goods and services which sale, distribution or possession is prohibited,
- production activity which is usually legal but becomes illegal because it is performed by producers that have no right to do it e.g., medical practice without licence.

There is not always a clear border between grey economy and illegal activity. In Polish national account, due to a state specificity there was a need to divide calculations for prostitution into a grey economy part (where the income from sexual services is counted) and illegal activities (pimping forbidden). Research of PCSO (since 2010) entail calculations in the frame of illegal activity considering:

- activity of people that get financial benefit from prostitution of other people (pimping),
- production and trade of drugs,
- smuggling cigarettes.
-

Table 1. Illegal activity in Poland in 2010-2017

Specification		2010	2011	2012	2013	2014	2015	2016	2017
Illegal activity (pimping, drugs, cigarettes smuggling)	in mln PLN	10061	10875	12927	13296	10323	5401	5583	5968
	in % GDP	0,7	0,7	0,8	0,8	0,6	0,3	0,3	0,3

Source: Self-study on the basis of National accounts due to a division into institutional sectors and sub-sectors 2010-2013, 2011-2014, 2014-2017, (GUS, 2015, 2016, 2019).

Scheme 5. Illegal activity in Poland (2010-2017)



Source: Self-study on the basis of National accounts due to a division into institutional sectors and sub-sectors 2010-2013, 2011-2014, 2014-2017, (GUS, 2015, 2016, 2019).

3.1 What Implies the Existence of Grey Economy?

The authors, due to analyses of written works, pay attention to the existence of many factors that determine existence of grey economy. According to Schneider and Medina these are⁵:

- *“TAX AND SOCIAL SECURITY CONTRIBUTION BURDENS* - The distortion of the overall tax burden affects labor-leisure choices and may stimulate labor supply in the shadow economy. The bigger the difference between the total labor cost in the official economy and after-tax earnings (from work), the greater the incentive to reduce the tax wedge and work in the shadow economy. This tax wedge depends on social security burden/payments and the overall tax burden, making them a key determinant in the existence of the shadow economy,
- *QUALITY OF PUBLIC INSTITUTIONS*- The quality of public institutions is another key factor in the development of the informal sector. In particular, the efficient and discretionary application of the tax code and government regulations plays a crucial role in the decision to work underground. A bureaucracy with highly corrupt government officials tends to be associated with greater unofficial activity, while good rule of law through secure property rights and contract enforceability increases the benefits of having a formal status. The likelihood of an informal sector developing thanks to the failure of political institutions in promoting an efficient market economy, and entrepreneurs going underground due to inefficient public goods provision, may be reduced if institutions can be strengthened and fiscal policy is more closely aligned with the median voter’s preferences,
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- *REGULATIONS* - Regulations such as labor market regulations or trade barriers for example, are another important factor that reduces freedom (of choice) for individuals in the official economy. They lead to a substantial increase in labor costs in the official economy and thus provide another incentive to work in the

⁵Source: Medina L., Schneider F., *Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?* IMF Working Paper, WP/18/17, np. 34-36.

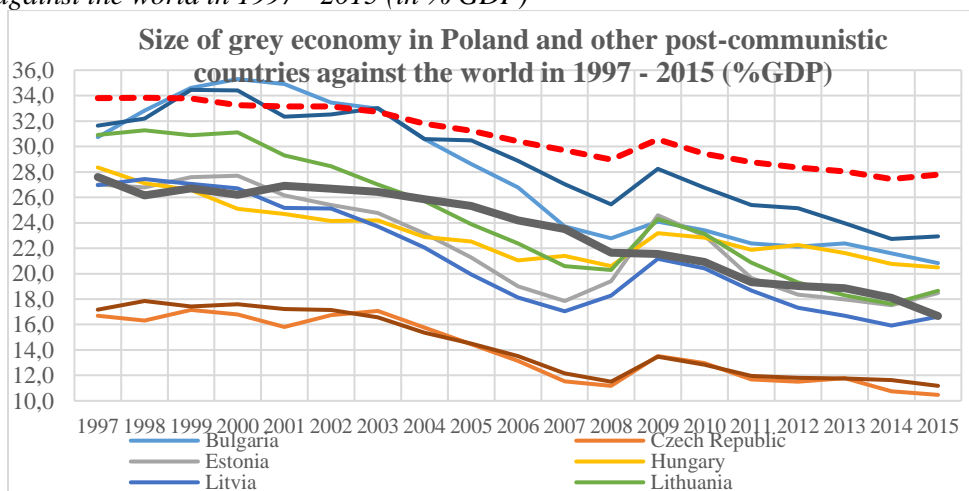
shadow economy: countries that are more heavily regulated tend to have a higher share of the shadow economy in total GDP

- *PUBLIC SECTOR SERVICES* - An increase in the shadow economy may lead to lower state revenues, which in turn reduce the quality and quantity of publicly provided goods and services. Ultimately, this may raise tax rates for firms and individuals, although the quality of the public goods (such as public infrastructure) and of the administration may continue to deteriorate. The result is an even stronger incentive for participating in the shadow economy.
- *TAX MORALE* - The efficiency of the public sector also has an indirect effect on the size of the shadow economy because it affects tax morale. Tax compliance is driven by a psychological tax contract that entails rights and obligations on the part of taxpayers and citizens on the one hand, but also on the part of the state and its tax authorities on the other hand. Taxpayers are more inclined to pay their taxes honestly if they receive valuable public services in exchange. The treatment of taxpayers by the tax authority also plays a role. If taxpayers are treated like partners in a (tax) contract instead of subordinates in a hierarchical relationship, taxpayers will fulfil the obligations of the psychological tax contract more readily. Hence, (better) tax morale and (stronger) social norms may reduce the probability of individuals working underground.
- *DEVELOPMENT OF THE OFFICIAL ECONOMY* - The development of the official economy is another key factor in the shadow economy. The higher (lower) the unemployment quota (GDP-growth), the higher the incentive to work in the shadow economy, ceteris paribus.
- *SELF-EMPLOYMENT* - The higher the rate of self-employment, the more activities can be performed in the shadow economy, ceteris paribus.
- *DETERRENCE* - Despite the strong focus on deterrence in policies fighting the shadow economy and the unambiguous insights of the traditional economic theory of tax non-compliance, surprisingly little is known from empirical studies about the effects of deterrence. This is because data on the legal background and the frequency of audits are not available on an international basis; such data are difficult to collect even for OECD countries. Either the legal background is quite complicated, differentiating fines and punishment according to the severity of the offense and the true income of the non-complier, or tax authorities do not reveal how intensively auditing is taking place. The little empirical survey evidence available demonstrates that fines and punishment do not exert a negative influence on the shadow economy, while the subjectively perceived risk of detection does. However, results are often weak and Granger causality tests show that the size of the shadow economy can affect deterrence, instead of deterrence reducing the shadow economy.
- *UNEMPLOYMENT* - The higher the rate of unemployment, the higher the probability to work in the shadow economy, ceteris paribus.
- *SIZE OF THE AGRICULTURAL SECTOR* - The larger the agricultural sector, the more possibilities to work in the shadow economy, ceteris paribus

- *USE OF CASH* - The larger the shadow economy, the more cash will be used, ceteris paribus. Mostly measured as M0/M1, or M1/M2, or cash per capita outside the banking sector.
- *SHARE OF LABOR FORCE* - The higher the shadow economy, the lower the official labor force participation rate, ceteris paribus
- *GDP PER CAPITA (ECONOMIC GROWTH)* - A larger shadow economy is associated with more economic activities moving out of the formal economy; hence, it shows a decrease in economic growth, ceteris paribus”.

In case of Poland a historical factor becomes important, time of Second World War and communistic economy that forced Polish people to hide their incomes. A method that was created by Medina and Schneider⁶, including abovementioned factors allowed to estimate a size of grey economy for 158 countries in the world within 25 years (since 1991 till 2015), taking into consideration Poland.

Scheme 6. Size of grey economy in Poland and other post-communistic countries against the world in 1997 - 2015 (in % GDP)

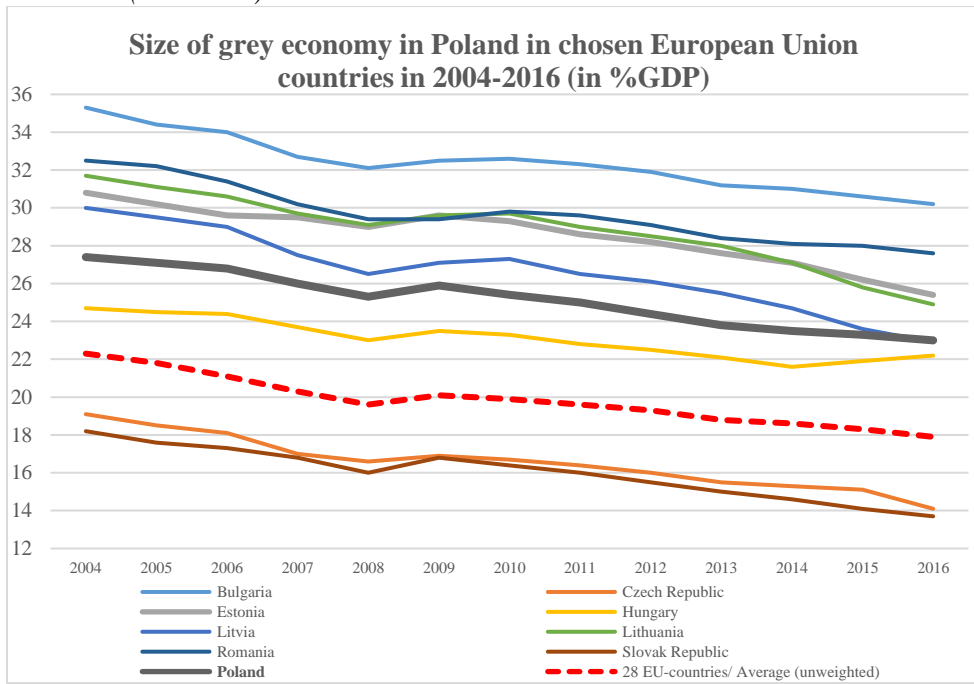


Source: Self-study on the basis of Medina L., Schneider F., *Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?* (Medina, 2017).

The results of F. Schneider works concerning a size of grey economy in 28 European Union countries in 2004-2016, including Poland, show that in 2016 grey economy share in Polish GDP could even reach 23%. This means that Poland was above average for the EU of 5,1 points.

⁶Note: A model MIMIC (Multiple Indicators Multiple Causes) is a specific type of modelling structural equations SEM, which is widely used in psychometric and social sciences researches and is based on a static theory on non-observable variables created in 1970ties by Zellner (1970) Joreskog and Goldberger (1975). The first one to use this model to estimate grey economy in 17 countries was Frey (1984).

Scheme 7. Size of grey economy in Poland in chosen European Union countries in 2004-2016 (in %GDP)



Source: Self-study on the basis of Schneider F., *Estimating the Size of the Shadow Economies of Highly developed Countries: Selected New Results*, (Schneider, 2016).

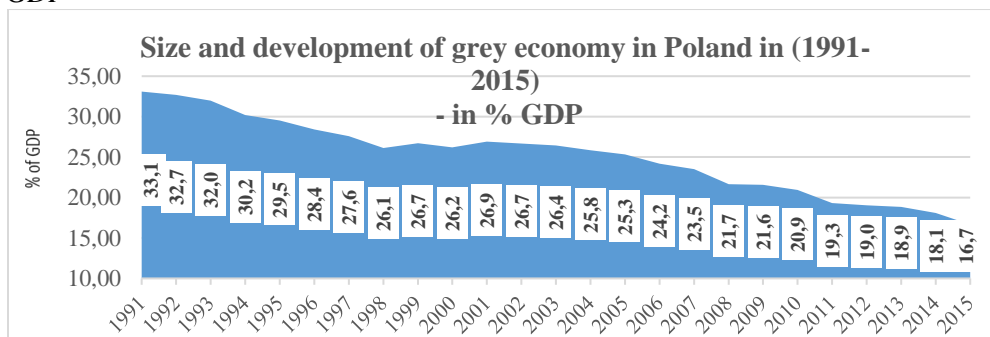
Presented calculations from 2017 show that a grey economy share in Polish GDP was 22,2 (-0,8 points) which placed Poland on 20th place among the European Union countries (average for the UE countries in 2017 was 17,1%). Calculations of the Institute for Forecasting and Economic Analyses (Instytut Prognoz i Analiz Gospodarczych, IPIAG) for 2018 show that a share of grey economy in Polish GDP decreased of 18%, that is 0,7 percentage points less than in 2017 and 1,5 p.p less than in 2014. IPIAG forecasted further decrease of grey economy in 2019. It was supposed to be due to good business cycle and tightening of tax system, in particular in terms of VAT tax (Fundowicz, 2019-2020).

It is worth mentioning that although a grey economy share in % GDP decreases, in a nominal term, it increased in 2018 up to 402 billion PLN which is 6 billion PLN more than in 2017 and 41 billion more than in 2014.

3.2 Actions Taken to Limit the Grey Economy

System solutions to counteract tax frauds and to limit grey economy in Poland in the last five years show the following scheme 9:

Scheme 8. Size and development of grey economy in Poland in (1991-2015) - in % GDP



Note: Self-study on the basis of Knoema.com.

Source: https://knoema.com/NESE2019Dec/shadow-economies-around-the-world?tsId=1009090&utm_medium=watermark&utm_source=xlsx.

Scheme 9. System solutions supporting limitation of grey economy and counteracting tax frauds in Poland

System solutions supporting limitation of grey economy and counteracting tax frauds in Poland		
Organizational solution	Electronic tools	Legal solutions
National Revenue Administration (KAS)	Standard Audit File-Tax – SAF-T	Limiting Cash Transactions
	Central Invoice Register	Split payment
		Reverse charge mechanism
		Joint responsibility
		STIR
		White list of taxpayers

Source: Self-study.

I. ORGANIZATIONAL SOLUTIONS

▪ National Revenue Administration (Krajowa Administracja Skarbowa, KAS)

On March 1, 2017 the National Revenue Administration was created (hereinafter: KAS)⁷. This new institution of government administration constitutes a consolidated and functioning administration that was before such as: tax, customs and fiscal. A scale and a scope of reforms performed were named as administrative ‘reform’ and its aim was to build a modern fiscal administration which in a wide scope uses modern IT solutions. A main aim of reorganization and creating KAS was to limit tax frauds, improve effectiveness of tax liabilities and customs levy, increase a level of freedom of which tax obligations to fulfill and also lower costs of fiscal administration functioning in relations to a level of a state budget gathering. The World Bank (Raport ..., 2014) and International Monetary Fund (Kulicki, 2016) reports indicated the need

⁷Note: An Act from 16 November, 2016 about National Revenue Administration (Dz. U. z 2016 r., poz. 1 November, 947).

to introduce changes, in particular consolidation of tax and fiscal administration services. As a pattern, while creating a conception of a reform, transformations performed eg. in Great Britain, Spain, Austria, Australia, Slovakia, and the Czech Republic were used (Money.pl, 2016).

In an Act on KAS⁸ it was indicated that it constitutes ‘a specialized national administration that performs activities from the area of accomplishing tax income, customs and non-taxable state creditors, secures interests of the State Treasury and customs area of the European Union and also guarantees service and support for an entrepreneur in a proper fulfilment of customs obligations’. In a field of securing the State Treasury interests the most important is fighting with grey and black economy. The main duties of KAS in this field are:

- identifying, detecting and fighting fiscal offence and fiscal frauds, preventing from these offences and frauds, chasing the culprit;
- identifying, detecting and fighting offences and frauds connected with violating regulations in terms of goods trade of which are banned or limitations due to Polish law, the European Union provisions of law or international agreements, counteracting offences and frauds or chasing culprits if these were revealed by the Fiscal and Customs Service;
- counteracting counterfeiting money and financial terrorism;
- cooperation with proper units of other countries and international organizations and institutions.

In order to fulfil the abovementioned tasks on a central KAS level and in its regional units controlling groups were created also to fight with economic crime and they are responsible for elimination of existing grey economy and minimisation of frauds and offences. An authority (after consolidation of fiscal administration) responsible for performing tasks connected with detecting and fighting with irregularities is a governor of fiscal and customs office, in particular in situations when a scope, complexity and a level of influence of breach can in a significant way threaten financial security of a state (Sejm.gov.pl, 2016). Consolidation of fiscal administration was conducted in two main areas (Explanation..., 2017):

- object consolidation – connecting departments on a central level in the Ministry of Finance;
- subject consolidation – welding on a regional and local level of fiscal chambers and offices, fiscal controlling offices and customs chambers and offices – into chambers of tax administration and fiscal offices and fiscal and customs offices.

⁸ Note: Art.1(2) from 16 November, 2016 on National Revenue Administration (Dz. U. z 2016 r., pos. 1947).

In a place of tax administration (16 tax chambers and tax offices), Customs Office (16 customs chambers, 45 customs offices with 141 customs agencies), fiscal control (16 tax controlling offices) KAS was introduced and that is: 16 fiscal administrations chambers, 16 fiscal and customs offices (including 45 delegacy and 143 customs agencies) and 400 tax offices (The Ministry of Finance, 2017). Schemes of performed organizational changes connected with creating new units of KAS are presented below.

Efficiency of actions undertaken by operational units KAS, including co-operation with other services (Police, Border Patrol, Central Bureau of Investigation, the Internal Security Agency), between 01.03.2017 and 30.06.2017, measured by an estimated value of revealed and taken excise goods and also drugs, amber, jewellery, pharmaceutical goods and other goods, amounted to 90 million PLN. However, estimated losses of the State Treasury in virtue of not paid taxes (VAT, excise, duty) – in case of introducing unrevealed goods – would reach 249,6 million PLN. Results of comparisons of the outcomes of KAS units in the first 4 months of 2017 are presented in Table 2.

Table 2. Comparison of outcomes of actions undertaken by tax-customs control units KAS⁹

Customs chamber /current fiscal-customs unit KAS	Data from 2016 /*		Data from 01.03.2017 - 30.06.2017 /**		Taken goods - level of performance (%) 2016 = 100%	Depletion - level of performance (%) 2016 = 100%
	Calculated value of taken goods (in thousand PLN)	Value of depletion in area of duty, excise tax and VAT tax (in thousand PLN)	Calculated value of taken goods (in thousand PLN)	Value of depletion of excise tax, VAT tax and duty (in thousand PLN)		
Total	175 788,6	768 212,3	89 894,7	249 589,7	51,1%	32,5%

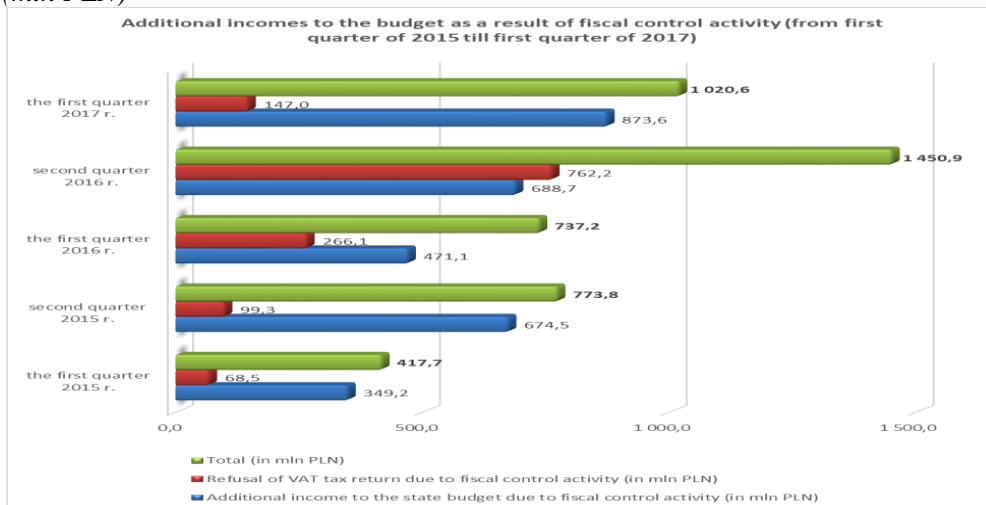
Source: Self-study on the basis of Biuletyn Statystyczny Służby Celnej I-IV quarter of 2016, the Ministry of Finance, Warszawa, February 2017 (*) and information from web pages of 16 chambers of fiscal administration (**).

In a publication in Global Compact Report, in December, about ‘Counteracting grey economy in Poland’ (Global Compact Network Poland, 2017) representatives of the Ministry of Finance showed a positive aspect of KAS functioning in an area of counteracting ‘grey and black economy’. Data from the Ministry of Finance indicated that although there was a limitation in a number of controls of entrepreneurs (in majority of micro-enterprise) the efficiency increased which had an effect on an increase of additional budget incomes. In the first half of 2015 budget incomes

⁹ Note: Data from 01.03.2017 - 30.06.2017, downloaded in July 2017, so primary evaluation of efficiency of regional KAS units could be significantly lowered as in many cases information about depletion to a state budget were not yet published. Similarly, data referring to hidden values and goods blocked are not full and final because some of actions were not finished then.

amounted to 417 million PLN. In the first half of 2017 additional budget incomes amounted to 1,020 billion PLN so there was an increase of incomes to a budget of over 600 million PLN. At the same time the number of fiscal controls conducted in micro-enterprises decreased from 23 439 to 10 699, of almost 54%. Contribution of micro-enterprises controls in a decrease of a number of controls in the first half of 2017 was 79%.

Scheme 10. Additional incomes to the budget as a result of fiscal control activity (mln PLN)



Source: Self-study on the basis of *Przeciwdziałanie szarej strefie w Polsce* (Global Compact Network Poland, 2017).

In the report ‘Counteracting grey economy in Poland’ it was stated that coordination and centralization of a control are two most important tools that have been implemented to counteract with illegal activity. National Revenue Administration combined competences that until then had been divided into numerous units. Moreover, a system of communication was developed through centralization of information eg.in terms of gaining data about potential economic crime. Thus, a level of salience of implementations – in the Ministry of Finance opinion – is highly evaluated and a level of implementations as maximal, due to the area of impact on ‘grey and black economy’ (Global Compact Network Poland, 2017).

II. ELECTRONIC TOOLS

Electronic tools that should support controlling organs and improve effectiveness of fighting with grey economy are:

- Standard Audit File-Tax – SAF-T,
- Central Electronic Register of VAT Invoices (CRF).

In Poland, in order to complete tasks from area of computerisation of tax administration there was a new co-partnership established Aplikacje Krytyczne

Spółka z o.o., which was involved in fulfilment of IT projects, including tasks of creating ICT system and a Central Electronic Register, development and modernisation of existing technologies.

A conception of Standard Audit Tax File was created by the Organisation for Economic Cooperation and Development (OECD, 2015) in 2005. One of the main aims of OECD was to tighten a tax system in developed countries and perform actions that will lead to improving efficiency of tax controls. OECD advised ‘exporting’ data in a standardised format, electronic submission of declarations and creating documentation that allow for generating appropriate comparisons by system users (Mer, 2016). A standardised format of fiscal data in an electronic form has already been introduced in Austria, Belgium, the Czech Republic, Denmark, France, the Netherlands, Germany, Slovenia, Latvia, Luxemburg, Sweden and Portugal.

▪ **Standard Audit File-Tax – SAF-T (Jednolity Plik Kontrolny, JPK)**

Standard Audit File-Tax is a data set that is created in IT systems of an economic unit by a direct export of data that includes information about economic operations for a given period of time that has a standardised layout and format (scheme XML) that allows for easy transformations¹⁰.

Standard Audit File-Tax is composed of 7 structures that entail the most important tax books and bookkeeping vouchers. Logical structures¹¹ from a Standard Audit File-Tax are presented in a Table.

Table 3. Logical structures from a Standard Audit File-Tax¹²

Name	Document Type	Information
Structure 1	JPK_KR bookkeeping vouchers	Comparison of turnovers and balances, data from bookkeeping vouchers, records in ledgers and in sub ledgers
Structure 2	JPK_WB bank statements	Initial balance and closing balance form a bank statement, number IBAN of a bank account, data about transactions
Structure 3	JPK_MAG warehouse	Information about goods traffic in a warehouse (receive, release, goods issued)
Structure 4	JPK_VAT VAT purchase and sales records	One of the most important structures, all information about VAT purchase and sales

¹⁰Note: <https://www.podatki.gov.pl/jednolity-plik-kontrolny/jpk-na-zadanie/>.

¹¹Note: According to a regulation from 24 December, 2007 in a logical structure and applications, the way of sending and electronic signature that should be included [Dz. U. 2007 Nr 246, pos. 1820].

¹²Note: Information regarding changes and structure updates are posted on the internet page of the Ministry of Finance <https://www.gov.pl/web/kas/struktury-jpk>.

Structure 5	JPK_FA VAT invoice	Data from sales invoice
Structure 6	JPK_PKPiR Tax revenue and expense ledger (KPiR)	A structure of created only by an entrepreneur from KPiR in an electronic form
Structure 7	JPK_EWP Income record (all- round amount)	This structure is destined only for enterprises with income records (all-round amount tax payers), sums of particular incomes or record date

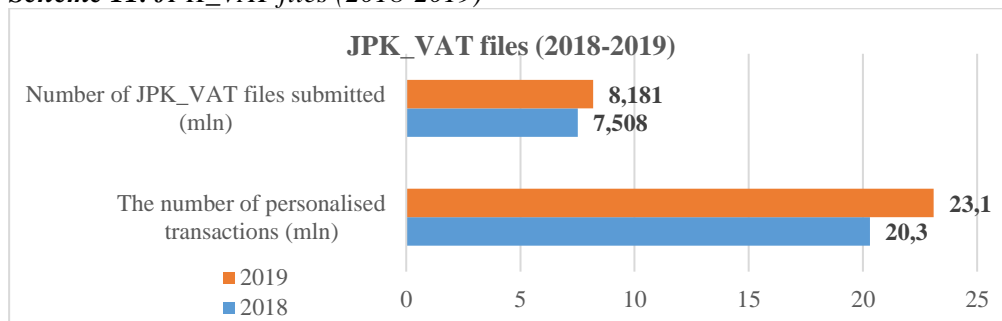
Source: Self-study on the basis of „Ewidencja dla podatku od towarów i usług JPK_VAT. Broszura informacyjna dot. struktury JPK_VAT(2)” (The Ministry of Finance, 2016).

In December 2016 a new application Klient JPK 2.0 was created which main aim is to support entrepreneurs in fulfilling an obligation such as submitting documents JPK_VAT (that is VAT purchase and sales records) and sending, including other documents of JPK types on tax administration request. Creating and sending JPK files is possible while using a modern accounting programme and commercial applications on-line. A condition is to have an updated function that allow for generating and sending files. The application Klient JPK 2.0 allows for a conversion of incoming data from a regular file in a .CSV format into .XML format compatible with currently existing schemes of JPK_VAT.

An obligation to submit JPK_VAT files by particular groups of entrepreneurs was initially dependent on a number of employees (average annual employment), sums of balance assets and annual net turnover of an entrepreneur. From January 2018 a JPK_VAT file needs to be sent every month by all the registered active taxpayers.

The Ministry of Finance informed that in 2019 there were 23,1 million JPK_VAT files submitted, whereas in 2018 there were 20,3 million, this means that an increase was of about 13,8%. At the same time in 2019, 8 million 180,9 transactions were analysed in JPK_VAT files, whereas in 2018 there were 7 million 508,2 (Jankiewicz, 2020). In the first obligatory term of JPK_VAT file submission (that is until 26th February 2018) 1 508 458 of entrepreneurs submitted JPK_VAT files – which constituted 94,5% of all VAT taxpayers.

In total, there were 1 703 271 JPK_VAT files submitted to KAS. It is worth mentioning that at the beginning KAS analysts questioned 85 thousand invoices as suspicious and so-called blank invoices. They were issued by more than 36 thousand entities, which in turn, could cause losses not only in the budget but also of honest trading partners. An amount of VAT tax resulting from these invoices was almost 105 million PLN (Strefabiznesu.pl, 2018).

Scheme 11. JPK_VAT files (2018-2019)

Source: Self-study on the basis of (Jankiewicz, 2020).

Since the end of 2019 the Ministry of Finance has conducted works on a new JPK_VAT file:

- monthly – **JPK_V7M**,
- quarterly – **JPK_V7K**,

which includes a declarative and record part. It will be obligatory for all active VAT taxpayers to submit the files. The beginning was settled for the 1st of October, 2020¹³. A new structure of JPK_VAT 2020 should make it easier to report regarding VAT tax and will contain information about purchase and sale that result from records of VAT for a given period of time (record part), items from existing declaration VAT-7 and VAT-7K (declarative part) and additional data necessary for an analysis of calculations correctness.

▪ **Central Invoice Record – electronic record of VAT invoices**

Introduction of a central invoice register was proposed by the European Commission in 2010. In a ‘Green book about a future of a VAT tax’ it was suggested that invoices are sent to a central database that is monitoring calculations of VAT tax (Pietrzak, 2016; European Commission, 2010). According to the Commission tax authorities could gain information faster than it is now and many present obligations regarding a VAT tax could be eliminated. This system would be more efficient and less uncomfortable if in all transactions electronic invoices are used (European Commission, 2010). Central Invoice Record is supposed to be a nationwide repository of data where all issued invoices will be gathered. Documents will be archived and also analysed in a frame of controlling procedures (Infor.pl, 2016; European Commission, 2010). An introduction of such a tool will definitely improve controlling procedures on clerks’ side, which in turn, could increase a number of controls. All irregularities marked in the system can be corrected by taxpayers without

¹³ Note: The term decided on the basis of art. 58 item 4 of the Act from the 31st March, 2020 on changes of the act about special solutions connected with preventing, counteracting and fighting with COVID-19, other infectious diseases and critical situations caused by the disease and other Acts (Dz. U. z 2020 r., poz.568), and then according to Art. 72 item 2 of the Act from the 19th June, 2020 about surcharges to taxation of bank credits for entrepreneurs due to COVID-19 and an easier procedure to confirm deal due to COVID-19 (Dz. U. 2020 poz. 1086).

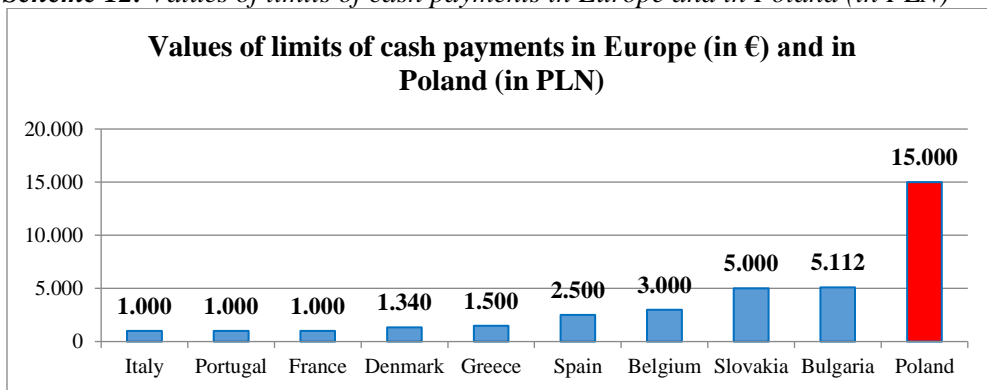
consequences within 14 days from a date of receiving a note from a governor of a tax office. Introducing this record does not burden taxpayer and does not impose new duties. The authors, however, believe that there is necessity to prepare a programming supported on a European level and to make it available for all member countries. This would give a green light for an exchange of information and for a cooperation of countries (Infor.pl, 2016; Stankiewicz, 2017; Pokojska, 2020).

III. LEGAL SOLUTIONS

• Lowering a limit of cash payments

Values of limits of cash payments that are present in some of European countries (according to data at the end of 2015) are presented in Scheme 12.

Scheme 12. Values of limits of cash payments in Europe and in Poland (in PLN)



Source: Self-study on the basis of data from <http://dyskusja.biz/finanse/w-europie-trwa-wojna-wojna-z-gotowka-54251>.

From 2017 the art. 22 of the Act on Freedom of business activity¹⁴ says that: 'transferring or receiving payments connected with economic activity is performed by a payment account of an entrepreneur in every case when:

- An entity of transaction, that the payment is made by, is another entrepreneur and
- Value of each transaction, regardless the number of payments, exceeds 15000 PLN, but transactions in other currency are calculated into PLN according to an average currency rate stated by the NBP from the last working day before transaction'

The most important benefits, following from lowering a limit of cash transactions and monitoring entrepreneurs, for the state budget and for entrepreneurs are listed in Table 4.

¹⁴ Note: The SDG Act – the Act on freedom of business activity (consolidated text - Dz.U. 2016 nr 0 poz. 1829).

Table 4. Benefits for the state budget and for entrepreneurs

Public finances	Business
Transparency of a calculation system between entities from the point of view of controlling authorities, including fiscal; Keeping higher amounts on accounts – possibility of using towards public-legal liabilities; facilitating performance of verifying actions in cases of transactions that could indicate trials of VAT tax frauds; Facilitating verifying actions according to transactions that could indicate records of unreal transactions (primarily of a cost type) Faster and more effective actions of executive authorities; More accurate identification of ‘post’ entities that are only established to create a bank account in order to extort a VAT tax return; Limiting grey economy; Increasing income to the state budget	Forcing timeliness of payment for liabilities (on the basis of mutuality); Verification of information about potential unreliable contractors present on the market in terms of timeliness and reliability in completing liabilities towards contractors; Limiting a risk connected with cash theft; Limiting costs of keeping cash in a company; Limiting a risk of taking false banknotes

Source: Self-study on the basis of (Ćwiąkała-Małys, Piotrowska, 2017).

Performing transactions using bank accounts is another improvement in fighting with extortions. The Ministry of Finance is planning to lower a level to 8.000 PLN. As a consequence, it will bring savings of about 20 billion PLN of costs of production, shipment and securing cash. This change should influence tightening a system of cash flow and tax collection. Lowering the level should also increase transparency of cash flow and as a result should make it easier to fight with grey economy.

▪ **Split payment - (mechanizm podzielonej płatności, MPP)**

From the 1st July, 2018 a new mechanism was introduced, a so called split payment (MPP). An idea of a split payment mechanism is to make a payment for goods and services in a split way for gross value as follows:

- A payment for a net value of sale is paid by a purchaser to a budget account of a supplier,
- A payment equal to a tax value from goods and services is paid to a special bank account (VAT account) of a supplier/purchaser or to other bank account in a building society (SKOK) that is opened due to this business.

In a present legal state split payment can only happen in a form of a transfer between banks of contractors with a usage of transfer announcement. Taxpayers can use MPP in a voluntary and a selective way which means that not every VAT invoice for goods and services should be paid this way. A taxpayer that is a purchaser of goods or services decides if split payment will be used (Ćwiąkała-Małys, 2018).

Using split payment in a transfer for a tax amount from an invoice will exempt a purchaser from¹⁵:

- a. joint and several liability,
 - b. risk of imposing additional tax liability
- only up to an amount equal to a tax from an invoice.

¹⁵ Note: Art. 108c (1), amended VAT Act.

The abovementioned exemption from a responsibility will not be valid in a situation when a taxpayer knew that an invoice which was paid using split payment option:

- was issued by a non-existing entity,
- names activities that were not performed (so called fake or blank invoices),
- shows amounts that are not in accordance with reality,
- confirms activities contrary to the act or those that are in order to evade the law, actions contrary to rules of social coexistence and also activities when a declaration of intent was made to another party with its acceptance for the sake of appearance.

According to Art. 108d of VAT Act¹⁶, when a payment of tax liability is made from an additional account, an amount of tax liability can be lowered by an (S) amount which can be calculated with a formula:

$$S = Z \times r \times n / 360$$

where:

S – amount by which a tax liability is decreased due to a tax,

Z – amount of tax liability resulting from a tax declaration before decreasing this liability,

r – NBP reference rate¹⁷ valid two days before making tax payments,

n – number of days from a day in which an account or SKOK was charged for VAT.

Advantages of Polish split payment:

- freedom of usage, actions of a legislator until now do not impose any duties on entrepreneurs to pay with a usage of split payment for taxpayers and a budget;
- prevent from appropriating VAT tax amount by dishonest taxpayers;
- limiting a risk of disappearing taxpayers who received VAT tax payment from contractors due to the State Treasury;
- increasing security and constant economic turnover;
- decreasing a risk of questioning by tax authorities a taxpayer's right to lower tax and joint responsibility and VAT sanctions.

▪ **Reverse charge mechanism (MOO)**

A mechanism of reverse charge moves an obligation to settle due VAT tax from a taxable transaction (goods and services supply) by a purchaser (that is an entity for which a supply of goods and services is performed). An analysis of a stated scale of tax frauds in a so called 'tax carousel' forced countries of the European Union to consider an introduction of periodic reverse charge mechanism in a transaction of certain goods. A scheme of tax carousel working (VAT carousel) was based on, the

¹⁶ Note: Art. 1 item 4 of Act from the 15th December, 2017 about amendment of Act on tax from goods and services and other different Acts (Dz. U. z 2018 r. pos. 62).

¹⁷ Note: Reference rate of (valid since March, 2015) is 1,5%.

most often used, so called poles, entities that take part in fake transactions. Basing on these transactions tax offenders performed tax frauds. Irregularities in this area were at that time indicated by a representative of sensitive businesses. In a VAT carousel it was not only a state budget that lost, increasing ‘a gap of a VAT tax’ but also entrepreneurs experienced losses that acted legally.

Reverse charge mechanism is one of a method of counteracting tax fraud such as ‘disappearing taxpayers’ in areas that are particularly exposed to. From the 1st April, 2011 the mechanism was implemented for certain goods (a register included scrap and non-ferrous metal). Then from the 1st October, 2013 new regulations were introduced that extended a list of goods included in a reverse charge mechanism of VAT tax (eg. waste and recyclable materials). From the 1st July, 2015 the list was more extended and the new one included goods from an electronic category (such as tablets, notebooks, laptops, mobile phone, play stations), goods from a category of gold, rough non-ferrous metals (aluminum, lead, zinc, tin, nickel) and other goods from a steel category.

Actions that were taken were supposed to limit a scale of irregularities and malpractices but the analyses that were conducted of results of such solutions showed that a reverse charge mechanism was not fully effective. A gap of a VAT tax was not limited, and it even increased because tax fiddlers changed a group of goods that were a subject of VAT tax carousel every time.

▪ **Joint and several liability (VAT)**

Together with a reverse liability a new institution of joint and several liability of a purchaser was introduced for VAT tax liabilities in case of supply of goods that are listed in an appendix 13 of the Act on VAT tax, these are so called sensitive goods. This appendix entails:

- some of steel products (not entailed by reverse exchange),
- fuel,
- exploitation materials for printers,
- some of noble metals and parts of jewellery,
- digital cameras,
- stretch foil,
- hard discs.

A purchaser that is also a VAT taxpayer is jointly liable with a supplier of goods, what is mentioned in an appendix 13, of a VAT tax Act for due liabilities in a part of a tax proportionately to a supply for a given taxpayer (art. 105a (1)). Tax responsibility of a purchaser can be used in terms of transactions that comply with the two characteristics:

- net value of goods purchased from one taxpayer that supply in a particular month and the value of transaction cannot exceed 50 000 PLN,

- at a time of supplying goods a purchaser knew or had reasons to suppose that the whole amount of tax for the supply of goods or a part of it will not be paid to an account of a revenue office.

▪ **Blocking bank accounts (STIR)**

From the 13th January, 2018 an new Act from the 24th November, 2017 on changes in counteracting a usage of financial sector to frauds, a so called STIR Act was introduced. For many years taxpayers had been demanding from the Ministry of Finance introduction of new instruments that would have allowed them to check their contractors. Due to this Act a new ICT system of accounting chamber STIR was introduced. The most important aim of this STIR Act was to limit a gap in a VAT value, caused by tax frauds, most often caused by organised criminal groups. It happens through generating false transactions, so called carousel transactions while transferring money on bank accounts. An actual aim of these transactions is to extort tax in a form of undue VAT tax return which causes losses to the State Treasury. System STIR eliminates from economic turnover companies that simulate business activity that deceive legally operating entrepreneurs and as a result improves security of VAT taxpayers in economic turnover. Using new IT solutions enables to easily download data for financial analyses that allow for identification of transactions characteristic for tax frauds.

Bank accounts of entrepreneurs that are suspected of frauds may be blocked for 72 hours¹⁸, that should enable eg.:

- An analysis of observed actions that have the appearance of tax frauds;
- Identification of entities involved in this practice, including gathering information on fulfilling tax liabilities and about assets they have;
- description of financial transfers between bank accounts that fiddlers use;
- an analysis of typology of frauds in a particular case;
- preparing possible decision on prolonging a blockage (even up to 3 months);
- coordinating actions with other authorities¹⁹.

Monitoring STIR entails more than 5,6 million accounts of so-called qualified entities which means different account than those of natural persons, for private transfers. In 2018 (since the 30th April so from first possible moment of using a blockage till the 31st December) there were 41 accounts and 23 entities blocked²⁰.

¹⁸Note: Here we do not include Saturdays, Sundays and holidays that are days stated as days off.

¹⁹Note: Art. 119 zw § 1 Ordynacji podatkowej (Dz. U. z 2019 r. poz. 900).

²⁰Note: According to <https://www.prawo.pl/podatki/stir-blokowanie-rachunkow-bankowych-bedzie-w-ordynacji,370224.html>: a number of blockages is 33 bank accounts that belonged to 23 entities qualified and a total value of blockages was 10,47 mln PLN. However, according to the Ministry of Finance in 2018 there were blocked bank accounts of 39 entities for an amount of 10,2 mln PLN., <https://www.gov.pl/web/finanse/uszczelnienie-systemu-podatkowego>.

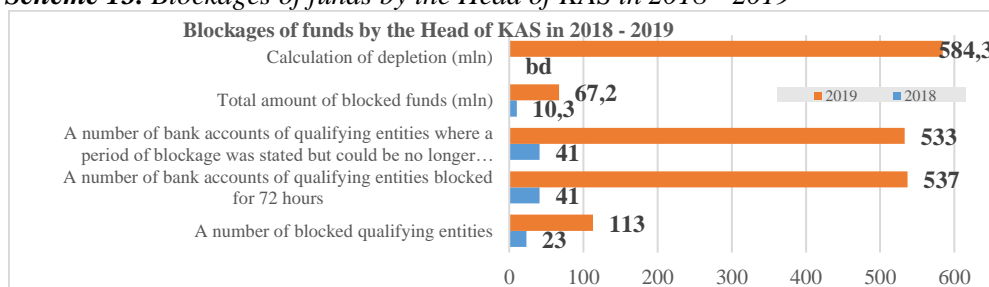
However, during a period of nine months of 2019 a head of KAS blocked 359 accounts for 40 million PLN suspecting tax frauds of an amount of 492 million PLN (Zalewski, 2019). In 2019, 537 bank accounts were blocked belonging to 113 entities for an amount of 67,2 million PLN (Witwicka, 2020). This change is a vital support for taxpayers in fulfilling tax liabilities.

Table 5. Information resources of STIR

Specification	IV - XII 2018	I - XII 2019	Increase (+) / Decrease (-)
Number of banks and SKOK facilitating a system (pc.)	619	614	-5
Number of qualifying entities reported to STIR (mln)	3,44	3,95	0,51
Number of people connected with qualifying entities (mln)	4,61	5,47	0,86
Number of budget accounts reported to STIR (mln)	11,56	15,74	4,18
Number of transactions reported to the system(mln)	8 525,07	11 537,64	3 012,57
Number of entities classified to groups of high risk of using financial sector to tax frauds (thousand)	29	58	29

Source: Self-study on the basis of Sprawozdania za 2018 r. i 2019 rok w zakresie przeciwdziałania wykorzystywaniu działalności banków i spółdzielczych kas oszczędnościowo-kredytowych do celów mających związek z wyłudzeniami skarbowymi (Gov.pl, 2019-2020).

Scheme 13. Blockages of funds by the Head of KAS in 2018 - 2019



Source: Self-study on the basis of Sprawozdania za 2018 r. i 2019 rok w zakresie przeciwdziałania wykorzystywaniu działalności banków i spółdzielczych kas oszczędnościowo-kredytowych do celów mających związek z wyłudzeniami skarbowymi (Gov.pl, 2019-2020).

In total, from the 30th April, 2018 till the 23rd January, 2020 National Revenue Administration blocked 648 of bank accounts where they secured 86 million PLN due to suspicion of tax frauds for 771 million PLN. STIR allowed fiscal controlling authorities to break tax carousels that were found in food, construction, motorization and textile industry (Szulc, 2020).

- **‘A white list’ of taxpayers**

From the 1st September, 2019 the Ministry of Finance has been publishing, on the internet page a list of entities registered as VAT taxpayers, non-registered and crossed

out and re-registered to a list of VAT taxpayers²¹. An entity, that is obliged to prepare such register, its ever day update, is a Head of National Revenue Administration²².

A register includes among others²³:

- A name of a company or a name and surname of an entrepreneur ;
- tax identification number, if it was issued (NIP);
- identification number REGON, if it was issued;
- a number in the National Court Registry, if it was issued;
- an address of residence – in case of an entity that is not a natural person;
- names and surnames of people from an authority eligible to represent an entity and their tax identification numbers;
- names and surnames of confidential clerks and their tax identification numbers;
- a name and a surname of a company (name) of co-partner and his tax identification number.

‘White list’ allows to:

- check if a given contractor is an active VAT taxpayer,
- find out about legal act according to which a contractor was refused to be registered or was crossed out from a register or was re-registered as a VAT taxpayer,
- check a bank account of a contractor indicated to account for a given economic transaction.

Checking information about a status of a taxpayers and a bank account can be made on a date of checking or any other date in the past, however not earlier than 5 years before a year in which a checkout was done.

The authors of publication perceive that although a wide spectrum of information, there is one disadvantage of a subjective list such as a lack of information regarding bank accounts of entities that were refused to register as VAT taxpayers or were crossed out from list of tax payers. Additionally, a list does not include information (also about bank accounts) referring to entities that are waiting for a registration as VAT taxpayers or are not obliged to be VAT taxpayers.

From the 1st January, 2020; when transferring money, more than 15000 PLN to a contractor for an account different than mentioned on the list:

²¹Note: This list is available in a Bulletin for Public Information on the internet page of offices responsible for public finances –according to Art. 96b on goods and services (<https://www.podatki.gov.pl/wykaz-podatnikow-vat-wyszukiwarka>).

²²Thus, colloquial name: A list of the Head of KAS or ‘white list’.

²³Source: <https://www.biznes.gov.pl/pl/aktualnosci/biala-lista-podatnikow-vat-nowe-narzedzie-do-sprawdzania-kontrahentow>.

- it will not be possible to include these costs (or a part of them) in taxable costs if they were paid to a different account than those included in the register,
- there will be a risk of joint responsibility for due liabilities if a contractor will not pay for a due VAT tax from a transaction.

4. Conclusions

According to the authors of this article:

- presented results of estimating grey economy in Poland show that it is advisable to create such methodology of its measurement that will comply with conditions of comparability with methods around the world,
- presented organisational-legal solutions presented separately and IT tools may not bring expected results. There are more chances to improve a support with the usage of modern IT solutions not only within a country but also around the world,
- properly used tools and legal measures are supposed to protect these entrepreneurs that act legally against unconscious participation in so called VAT carousel or joint and several liability. Additionally, they should improve and ease a system of fiscal calculations.

All changes in limiting grey economy will understood and accepted when introduction of such changes will not be rapid and will be preceded by a reliable tax education.

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