**The VAT gap in relation to the quality of governance in selected CEE countries**

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ABSTRACT

The objective of this paper is to examine the value-added tax gap in relation to the quality of governance in selected Central and Eastern European countries. The tax gap is caused mainly by tax evasion and tax avoidance of the value-added tax (VAT) and is calculated as a share, in percent, of VAT total tax liability. The Worldwide Governance Indicators are used to represent quality of governance, and all six comprehensive dimensions of governance have been used: a) voice, accountability; b) political stability, absence of violence or terrorism; c) effectiveness of government; d) quality of regulation; e) the rule of law; and f) control of corruption. The results section shows the proven relationships between the VAT gap and the WGI indicators in the analyzed countries using statistical application methods (correlations) and data from 2000 to 2019. The most significant factor related to the VAT gap is the control of corruption, thus encouraging governments to enhance the anti-corruption measures.

Keywords: Tax Gap, Value Added-Tax, Worldwide Governance Indicators, Central and Eastern European countries

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**INTRODUCTION**

Several approaches, models, and concepts are encountered in economic theory that address the issue of taxation and tax policy as a part of economic policy, which in modern democracies is significantly influenced by the existing political alignments in the domestic economy, and also in supranational units (to which a specific country belongs) (Cakoci, 2019). According to Šrein (2008), economic theory implies that the tax system should fulfil two essential functions, namely fiscal (in connection with revenues to state and public budgets) and incentive (in connection with influencing the economic behavior of entities through tax policy). In contrast, these functions may be against each other. From the fiscal goals point of view, mainly when a high tax burden is set, efforts to avoid tax evasion and tax avoidance can be observed.

Different reasons for tax evasion and tax avoidance by taxpayers have been the subject of research of both academicians and practitioners (see e. g. Blanthorne & Kaplan, 2008; Hug & Spörri, 2011; Torgler, 2012; Zídková & Pavel, 2016; Babčák, 2017; Horodnic, 2018; Durán-Cabré et al., 2019; Di Gioacchino & Fichera, 2020), due to its practical impact on state budgets, business environment and consequently on public services and their quality. The motivation factors of tax evasion or tax avoidance can be different: personal traits (see Olexová & Sudzina, 2019); demographical, cultural, ethical, or psychological factors (see Alm & Torgler, 2006; Schultzová, 2020); or administrative factors, political factors, or the quality of government services (Hanousek & Paldda, 2004; Sipos, 2015; Newman et al., 2018).

The objective of this paper is to examine the tax gap from the perspective of its relation to the quality of governance. Quality of governance can be expressed by six indicators (Kaufmann et al., 2010):

1. Voice and Accountability. This is explained by the level of participation of a country’s citizens in decisions on the government, freedom of speech, association and media freedom.
2. Political Stability and Absence of Violence/Terrorism. This indicator indicates, whether citizens perceive the likelihood of instability, political violence, or terrorism in the country.
3. Government Effectiveness. From the tax system perspective, this indicator plays an important role as it reflects how citizens perceive the quality of public and civil services, the quality of policy, political independence etc.
4. Regulatory Quality. This reflects support for commercial sector development through appropriate policies and legislation.
5. Rule of Law. This indicator addresses trust in the law, the police, the judiciary, also the likelihood of crime, violence.
6. Control of Corruption. This indicator expresses how citizens perceive the range over which public power is influenced and corrupted.

The results of the paper should contribute to the knowledge on tax evasion, tax avoidance and tax fraud. factors, and the motivation of tax entities to abuse the tax system.

The rest of the paper proceeds as follows. The following section contains the literature review, section 3 the data used, and the methods. Section 4 explains the results, and the last part contains the conclusion and actionable framework proposals.

**LITERATURE REVIEW**

All the tendencies to evade or avoid tax cause the tax gap and, therefore, reduce tax revenues to the state budget and disrupt its redistributive function, which is reflected in the availability and quality of public goods for citizens.

The tax gap is defined by the Institute of Financial Policy of the Ministry of Finance in Slovakia as the imbalance between the tax that was paid and the tax that should have been paid if all taxpayers declared their activities and transactions correctly, in accordance with the rules of law and legislators’ notions (Gábik & Motková, 2019). Babčák (2017) defined it similarly as the imbalance between the tax payable and the amount collected by the national authorities. Not only tax evasion and tax avoidance contribute to the creation of the tax gap, but also administrative errors and bankruptcies also can play an important role. However, statistics on the tax gap provide an essential indicator of the extent of intentional non-compliance. Due to the confidential nature of these activities, together with the lack of estimates in several EU Member States, precise data are not available. To collect comparable data, the FISCALIS project team was established to promote greater transparency among the Member States in regard to the data on their national tax revenues and the methods of calculating them (see Regulation of the European Parliament and of the Council No 1286/2013).

Value added tax is an indirect taxes and is a universal consumption tax by its nature. It represents one of the largest revenues of the state budget. It is harmonized and regulated in the European Union by Council Directive 2006/112/EC on the common system of value added tax, which contains all the mechanisms of operation of the VAT system, which individual countries have transposed into their legal systems.

The VAT is the most important general consumption tax in the budget, and it is included in the price of goods and services that consumers or businesses buy. The subject of the tax are four different types of so-called taxable transactions, namely:

* the supply of goods for equivalent in the domestic country by a taxable person acting in position of a taxable person,
* the supply of a service for equivalent within the domestic territory of the taxable person acting in the position of a taxable person,
* acquisition of goods for equivalent in the domestic country from another EU Member State,
* import of goods into the domestic country.

As it is an indirect tax, the tax is not applied by the taxpayer, but the tax liability is passed on to the buyer; however, the tax itself is paid to the state (basically only paid) by the payer or another taxable person - depending on the specific case provided by law. With the VAT, we use the term taxable subject, not the taxpayer. To put it simply, VAT applies primarily to businesses.

As the VAT represents the largest share of revenues in the state budget and economic crime in the field of VAT (see Frunza, 2018), the value-added tax gap is the most significant (see Gábik & Motková, 2019). In the paper, we use the definition of the VAT gap as a share of the total VAT liability (later only “VTTL”) (CASE, European Commission and Economisti Associati, 2020). Lazar et al. (2020) assumed that, for the taxpayers, it is crucial what returns to the community after the payment of taxes and, consequently, the government’s spending. Tax morale is higher in the countries where taxpayers are convinced about the integrity of government and, more specifically, the integrity of the tax administration (Awasthi & Bayraktar, 2015). The role of country governance in value added tax revenue was highlighted by Chan & Ramly (2018). It also is important how the government reacts after revealing financial frauds and corruption (see e. g. Cheng – Ma, 2009). This suggests examining the quality of government in relation to the tax gap, mainly to examine corruption in relation to paying taxes. In countries with systemic corruption, taxpayers do not have much trust in public authorities. They feel cheated and are unwilling to pay taxes (Chan et al., 2018, Torgler, 2001). The study of Vintila et al. (2021) highlighted the impact of the worldwide governance indicators on economic growth (on the data of OECD countries) and the results are also connected to the suggestion to apply fair taxes.

Still, there is not much evidence of the impact of the quality of government on tax evasion and tax avoidance in the literature, mainly related to the post socialist countries (see e.g., Hanousek & Paldda, 2004; Horodnic, 2018; Sipos, 2015); some of the publications present the results only from selected countries of Eastern Europe (e.g. Daude et al., 2013). The tax systems in these countries are relatively new, evolving and are in the harmonization process. The political system is only slowly getting rid of past practices that have involved high levels of corruption in these countries. For instance, tariff evasion in relation to the World Bank's Worldwide Governance Indicators were examined by Drenski et al. (2019), who found that the problems are stronger in the states with higher corruption. Daude et al. (2013) claimed that the countries surveyed in Eastern Europe (Bulgaria, Moldova, Poland, Romania, Russia, Serbia, Slovenia and Ukraine) exhibited lower tax morale than other countries of the survey. These authors also examined the relationship between tax morale and perceptions concerning the quality of received public services and confirmed this relationship. The quality of public services was studied as subjective opinions and the indicators of World Values Survey were used. Therefore, the detailed survey of the relationship between tax morale and quality of governance is still needed, and the WGI indicators could be used for this purpose. Implementation of new technologies, such as e-government, can play an important role, from the point of view of lowering tax evasion and tax avoidance (Olken & Pande, 2012). Lago-Peñas & Lago-Peñas (2010) examined tax morale with different independent variables, *inter alia* political attitudes in selected European countries and pointed out that reducing corruption, raising social capital and changes of the tax mix might influence tax morale in a positive direction. However, only four of the Central and Eastern European countries (later only “CEE countries”) were included in the research (the Czech Republic, Estonia, Poland and Slovenia), so comprehensive findings for the CEE region cannot be drawn. Another study aimed at tax evasion, corporate social responsibility and national governance, as measured by the Worldwide Governance Indicators, was conducted by Montenegro (2021) who found out the relationship between the national governance and its effectiveness, rule of law, regulatory quality and control of corruption and tax evasion at the country level (the higher quality of national government, the lower tax evasion). However, it should be noted that the research was aimed at the 25 OECD countries; only one of the CEE states (Poland) was included in the sample. Our paper contributes to the literature by the results concerning the VAT gap from the point of view of the quality of government to in CEE countries that are the members of European Union.

**METHODOLOGY**

Our research was based on the data set of selected CEE countries as determined by OECD (OECD, 2001) and at the same time met the condition that they are members of the European Union, in order to have the necessary data that relate to the tax gap. The following countries were investigated: the Slovak Republic, the Czech Republic, Poland, Hungary, Bulgaria, Romania, Croatia, Slovenia, Latvia, Lithuania, and Estonia.

This paper's quantitative research used the secondary data of the Worldwide Governance Indicators (later only “WGI”) project reports. These reports summarize governance indicators for more than 200 states and territories from 1996 for all six scopes of governance (The World Bank, 2020). These summary indicators use many different data sources about the attitudes towards the administration and management of a wide range of respondents, i.e., companies, citizens, and professional assessments from all over the world, in both industrial and developing states (Kaufmann et al., 2010). Kaufman et al. (2010) presented a detailed explanation of the indicators in their WGI methodology work.

The level of the VAT gap (variable) is expressed as a share of VTTL. The VAT gap expression data were used from available reports regarding the EU Member States (CASE and CPB, 2013; CASE and IEB, 2018; CASE–IEB, 2019; CASE, European Commission and Economisti Associati. 2020).

Because of a limited sample size and multicolinearity, bivariate analysis was conducted. Correlation analysis has been used to determine the possible associations between the valuation of the VAT gap and the WGI indices across selected CEE states. To avoid a possible effect of non-normality, a non-parametric approach was chosen. Spearman's correlation coefficient was used for the estimation of statistical dependence. The strength of the correlation was described according to this guide:

* “very weak” (absolute value from .00 to .19),
* “weak” (from .20 to .39),
* “moderate” (from .40 to .59) (\*),
* “strong” (from .60 to 0.79) (\*\*), and
* “very strong” (from .80 to 1.0) (\*\*\*).

The p-value represents the probability that we would have found a present result if the correlation coefficient was zero (null hypothesis). If this probability is lower than the significance level alpha 5% (P<0.05), we consider the correlation coefficient to be statistically significant. Correlations are calculated for each country. To reiterate, asterisks are used to denote the strength of the correlation, not to visualize p-values. The sample size is 19 for most of the countries but VTTL for Croatia and Slovenia is available only since 2014; therefore, sample size (N) is provided in Tables 2-7. IBM SPSS 22 was used for the calculations.

**RESULTS AND DISCUSSION**

The VAT rates are presented in Table 1 as the standard and reduced VAT rate. However, a reduced VAT rate can affect taxpayers in the tendency to comply with tax regulations or discourage them to tax evasion and tax avoidance.

**Table 1:** VAT rates (for selected CEE countries), update 1.1.2021 (in %)

|  |  |  |
| --- | --- | --- |
| Member State | Standard Rate | Reduced Rate\* |
| Bulgaria | 20 | 9 |
| Czech Republic | 21 | 10 / 15 |
| Estonia | 20 | 9 |
| Croatia | 25 | 5 / 13 |
| Latvia | 21 | 12 / 5 |
| Lithuania | 21 | 5 / 9 |
| Hungary | 27 | 5 / 18 |
| Poland | 23 | 5 / 8 |
| Romania | 19 | 5 / 9 |
| Slovenia | 22 | 9,5 |
| Slovak Republic | 20 | 10 |

\*If only one value is given, one reduced VAT rate applies. If two values are given, two different reduced VAT rates apply.

Source: authors’ analysis, 2021, data: European Union (2021).

The standard rate of VAT ranges from 19% in Romania to 27% in Hungary, reduced rates from 5% (which is the minimum under the Council Directive 2006/112/EC) to 18% (see also Olexová & Husťák, 2018, on the tax harmonization process in the EU as a part of global trends).

Individual countries have several VAT rates, and some countries have two reduced rates; only Slovakia (10%), Bulgaria (9%), Estonia (9%), and Slovenia (9.5%) have one reduced rate. Therefore, it is difficult to evaluate the tax load when comparing the countries. To be precise, the countries do not apply the super reduced and parking VAT rates.

The VAT gap for the period from 2000 to 2018 and the tax gap estimate for 2019 in selected CEE countries are presented in Figure 1.

Chart, line chart

Description automatically generated

**Figure 1:** Trend of the VAT gap (per cent of VTTL) in analysed CEE countries (2000 – 2019)

Note: 2019 - the VAT gap estimates.

Source: authors’ analysis, 2021; data (CASE and CPB, 2013; CASE and IEB, 2018; CASE–IEB, 2019; CASE, European Commission and Economisti Associati, 2020).

The VAT gap in selected EU countries in Central and Eastern Europe has been gradually declining, on average from 27.2% in 2009 to 12.95% in 2018 and is further estimated to decrease to 11.28% in 2019. Within the selected group of countries, Croatia and Slovenia had the lowest tax gap in the estimate (available data from 2014). On the other hand, Romania had the highest tax gap in the long-term view (although the development is favorable and the VAT gap decreased from almost 50% to about 34%), and the same applies to Lithuania.

Since 2018, a significant decline in the tax gap can be observed in several countries, e.g., Hungary (from 13.5% in 2014 to 8.4% in 2018, and a further decrease is estimated in 2019, 6.6%). The VAT gap also decreased in Latvia (from 13.9% in 2017 to 9.5% in 2018 and 6.6% in 2019). A positive trend was also in Poland (from 14.3% in 2017 to 9.9% in 2018 and 9.7% in 2019).

Although the VAT gap has been declining in all selected CEE countries, it is still high and, in several countries, even higher than the average of all EU countries (EU-28). It was 10.9% in 2017, 9.20% in 2018 and the estimate for 2019 is 9.20%.

Only significant relations are shown next (figures 2 – 7; tables 2 – 7).

**Voice and Accountability**

The relationship between the VAT gap and Voice and Accountability (later only “VaA”) is shown in the following figure and table (Table 2).

**Table 2:** Relationship between the VAT gap and VaA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| VaA | Tails | Spearman´s coefficient | p-value | N |
| Estonia | 2 | -0.579 \* | 0.009 | 19 |
| Hungary | 2 | 0.748 \*\* | 0.000 | 19 |
| Lithuania | 2 | -0,616 \*\* | 0.005 | 19 |
| Poland | 2 | 0.599 \* | 0.007 | 19 |

\*\*. Strong correlation (|r| from .60 to 0.79).

\*. Moderate correlation (|r| from .40 to .59).

Source: authors’ results, 2021.

As shown in Table 2, the significant relationships are for Estonia and Lithuania, i.e. when VaA increases, the VAT gap decreases. For Hungary and Poland, the relationships are positive. We perceive it as a contradiction because it means is the values of VaA increase with the growing tax gap.

**Political Stability and Absence of Violence/Terrorism**

The opinion in the likelihood of political volatility and/or politically driven violence, and terrorism (later only “PSaAV/T”) is presented in Table 3 in connection to the VAT gap.

**Table 3:** Relationships between the VAT gap and Political Stability and Absence of Violence/Terrorism

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PSaAV/T | Tails | Spearman's coefficient | p-value | N |
| Croatia | 2 | -0.928 \*\*\* | 0.008 | 6 |
| Slovak Republic | 2 | 0.681 \*\* | 0.001 | 19 |

\*\*\*. Very strong correlation (|r| from .80 to 1.0).

\*\*. Strong correlation (|r| from .60 to 0.79).

Source: authors’ results, 2021.

The significant relationships are for Croatia and in a negative direction. If the indicator of political stability, absence of violence, terrorism grows, the VAT gap descends. In the case of Slovakia, the VAT gap rises.

**Government Efficiency**

The relationship of the VAT gap and Government Efficiency (later only “GE”) are shown in Table 4.

**Table 4:** Relationship between the VAT gap and Government Efficiency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| GE | Tails | Spearman's coefficient | p-value | N |
| Estonia | 2 | -0.524 \* | 0.021 | 19 |
| Hungary | 2 | 0.733 \*\* | 0.000 | 19 |
| Lithuania | 2 | -0.639 \*\* | 0.003 | 19 |
| Poland | 2 | 0.715 \*\* | 0.001 | 19 |

\*\*. Strong correlation (|r| from .60 to 0.79).

\*. Moderate correlation (|r| from .40 to .59).

Source: authors’ results, 2021.

Statistically significant relationships can be confirmed for Estonia, Hungary, Lithuania, and Poland (Hungary and Poland have a positive relationship). Perceptions of the public services quality, civil services, and the grade of the liberation from political pressures, the level of a policy proposal and its adoption, and the integrity of the government to these policies are expected to reduce the VAT gap (as in case of Estonia and Lithuania), not to raise it. This indicator reflects, together with regulatory quality, the ability of government to effectively formulate and implement sound policies, what can be excessively perceived by tax subjects.

**Regulatory Quality**

The relationship between the VAT gap and regulatory quality (later only “RQ”) are shown in the following figure and table (Table 5).

**Table 5:** Relationship between the VAT gap and RQ

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RQ | Tails | Spearman's coefficient | p-value | N |
| Estonia | 2 | -0.571 \* | 0.011 | 19 |
| Croatia | 2 | -0.956 \*\*\* | 0.003 | 6 |
| Hungary | 2 | 0.766 \*\* | 0.000 | 19 |
| Lithuania | 2 | -0.757 \*\* | 0.000 | 19 |
| Poland | 2 | 0.779 \*\* | 0.000 | 19 |

\*\*\*. Very strong correlation (|r| from .80 to 1.0).

\*\*. Strong correlation (|r| from .60 to 0.79).

\*. Moderate correlation (|r| from .40 to .59).

Source: authors’ results, 2021.

Regulatory quality means how the government can create and adopt sound policies and rules that approve and stimulate the sustainable growth of the private sector. The meaningful relationship between the VAT gap and regulatory quality indicators was proved for Estonia, Croatia, and Lithuania negatively, and Hungary and Poland positively.

**The Rule of Law**

The findings of the tests of the relationship of the VAT gap to the rule of law (later only “RL”) can be seen in Table 6.

**Table 6:** Relationship between the VAT gap and the Rule of Law

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RL | Tails | Spearman's coefficient | p-value | N |
| Estonia | 2 | -0.641 \*\* | 0.003 | 19 |
| Hungary | 2 | 0.729 \*\* | 0.000 | 19 |
| Lithuania | 2 | -0.757 \*\* | 0.000 | 19 |
| Poland | 2 | 0.779 \*\* | 0.000 | 19 |

\*\*. Strong correlation (|r| from .60 to 0.79).

Source: authors’ results, 2021.

According to the outcomes, the meaningful relationships are for four countries. In the case of Hungary and Poland the relationships are positive. If the index of the rule of law (meaning an attitude as to whether respondents trust government and society rules and tend to abide them) is growing, the VAT gap is growing. Another direction was proven for Estonia and Lithuania.

**Control of Corruption**

The findings related to the VAT gap and control of corruption (later only “CC”) are shown in Table 7.

**Table 7:** Relationship between the VAT gap and CC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CC | Tails | Spearman's coefficient | p-value | N |
| Czech Republic | 2 | -0.537 \* | 0.018 | 19 |
| Estonia | 2 | -0.749 \*\* | 0.000 | 19 |
| Croatia | 2 | 0.971 \*\*\* | 0.001 | 6 |
| Hungary | 2 | 0.663 \*\* | 0.002 | 19 |
| Latvia | 2 | -0.599 \* | 0.007 | 19 |
| Lithuania | 2 | -0.551 \* | 0.014 | 19 |
| Romania | 2 | -0.601\*\* | 0.006 | 19 |

\*\*\*. Very strong correlation (|r| from .80 to 1.0).

\*\*. Strong correlation (|r| from .60 to 0.79).

\*. Moderate correlation (|r| from .40 to .59).

Source: authors’ results, 2021.

Control of Corruption was verified to significantly relate positively to the VAT gap for Croatia and Hungary. They were important in the expected way for the Czech Republic, Estonia, Latvia, Lithuania, and Romania, while three of these countries, the Czech Republic, Romania, and Latvia are among the countries with extensive opportunities for corruption and small constraints at the same time. Estonia and Lithuania are among the countries with great opportunities, albeit with small constraints (Mungiu-Pippidi & Kukutschka, 2013). It is worth mentioning that countries of the former eastern bloc have had a tendency towards corruption and its general acceptance by society. For instance, some of the CEE countries – Romania, Hungary, Bulgaria, Croatia, Slovakia – are at the lower positions of the in the Global Corruption Index (Global Risk Profile, 2021) ranking. Therefore, it is a long-term challenge for the mentioned countries to eliminate these tendencies toward corrupt practices.

The results open a discussion about the variousness of the factors influencing the VAT gap in particular countries, and we can agree with Montenegro (2021) that the national governments play an important role according to our results, mostly in the case of regulatory quality and control of corruption. Although the historical background of the countries are comparabe, the causes of the problems can be deeper.

**CONCLUSION AND RECOMMENDATION**

This paper has identified the relationships between the WGI indicators and the tax gap on value-added tax in the data of selected CEE countries that are also the member states of the EU. Although we are aware of the differences in political, financial, and tax systems in the analyzed countries, this research was intended to contribute to the issue of tax avoidance, evasion (even fraud), and provide the fields of future intentions of the states on which the measurements should be focused. The significant relationships for individual countries are presented in Table 8.

As it can be seen, the results are ambiguous and partly contradictory due to significant relationships in some of the cases, but in reverse ways (Table 8). Thus, it is not entirely viable to conclude this issue definitely. The explanation of the outcomes from analysis, particularly when the correlation coefficients were relatively high and positive, is a stimulus for any EU state to reduce those factors which, based on the obtained findings, unfavorably open the scissors between the quality of governance and the VAT gap.

**Table 8:** Significant relationships between the WGI indicators and the tax gap on VAT in CEE countries

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Country | WGI dimension | | | | | |
| Control of Corruption | Regulatory Quality | Voice and Accountability | Government Effectiveness | Rule of Law | Polit. Stability  and Absence of Viol./  Terrorism |
| Bulgaria |  |  |  |  |  |  |
| Croatia | + \*\*\* | - \*\*\* |  |  |  | - \*\*\* |
| Czech Republic | - \* |  |  |  |  |  |
| Estonia | - \*\* | - \* | - \* | - \* | - \*\* |  |
| Hungary | + \*\* | +\*\* | + \*\* | + \*\* | + \*\* |  |
| Latvia | - \* |  |  |  |  |  |
| Lithuania | - \* | - \*\* | - \*\* | - \*\* | - \*\* |  |
| Poland |  | + \*\* | + \* | + \*\* | + \*\* |  |
| Romania | - \*\* |  |  |  |  |  |
| Slovak Republic |  |  |  |  |  | + \*\* |
| Slovenia |  |  |  |  |  |  |

\*\*\*. Very strong correlation (|r| from .80 to 1.0).

\*\*. Strong correlation (|r| from .60 to 0.79).

\*. Moderate correlation (|r| from .40 to .59).

Source: authors’ results, 2021.

In future, it would be appropriate to focus on panel regression and to review the data over a longer period of time. EU documents on the rules against the practices of tax avoidance that are constituted in Council Directive (EU) 2016/1164 of July 12, 2016, define the measures in their basic frames; their implementation in the form of legal constructions of these measures corresponds to the nature of the legal systems of individual EU member states. According to the research results, a deeper analysis would be interesting in the case of Estonia, with a low VAT gap, to find out the factors lowering the tax gap (and the case of Estonia should also be compared with Lithuania). The factors revealed by the research could serve as an inspiration for other countries, e.g., Hungary and Poland, to take measures to lower the VAT gap.

The Hungarian standard VAT rate of 27% is the highest one in the EU and this raises the question of whether its level is the main cause of tax evasion in Hungary. Some authors have noted the unclear impact of changes in VAT rates on VAT gaps (Luca et al., 2013). On the other hand, according to the results of Kowal & Przekota (2021), there is a positive correlation between the standard rate and the number of preferential rates and the VAT gap, i.e., countries with a higher standard rate of the VAT and more preferential rates have a greater VAT gap.

The standard VAT rate is also relatively high in Poland, however the tax gap is gradually decreasing due to several measures - e.g., in 2016 the Standard Audit File (pl. “Jednolity Plik Kontrolny”) was introduced, which is equivalent to SAF-T, digitization of VAT tax returns, split payment mechanism, and publication of Whitelist tax entities, which include bank account numbers, or STIR - IT system for invoicing information (pl. “System Teleinformatyczna Informacji Rozliczeniowa”). STIR is an innovative tool for the exchange of data between the Polish tax authorities and the banking sector, which allows the tax authorities to identify fictitious transactions and temporarily block the account. With effect from 1 January 2021, an amendment to the Polish VAT Act was adopted, informally referred to by the Minister of Finance as "SLIM VAT", derived from "Simple, Local and Modern VAT", with additional VAT measures that should lead to a reduction in the tax gap.

A measure applied by several countries (e. g. Bulgaria, Czechia, Hungary, Poland, Slovakia) is a reverse charge for selected services, for instance, in Hungary since 2006, for the supply of construction and assembly services and the supply of real estate, currently also from 1 April 2021 for the services of leasing employees or for personnel leasing services only in connection with construction (KPMG, 2021). In Poland, a reverse charge was introduced in 2011 in connection with the scrap metal trade, and over time it has spread to other types of products and goods, most in comparison with other countries. Nevertheless, the introduction of a reverse charge did not bring a rapid decline in VAT non-compliance, although it was an effective tool for well-known tax fraud practices. At the same time, however, it has made it possible to conduct other types of undesirable practices (Poniatowski, 2016).

Recently, a very topical and highly discussed issue in the fight against international tax evasion is the progress in technological development, which has required changes in the way public budget revenues will be achieved. We are witnessing confirmation of predictions that it is technology, not tax policy, that is a driving force behind tax regulation in several areas (Cockfield, 2002). This has been recognized at the OECD level in the preparation of the BEPS initiative (OECD, 2015). In addition, advanced digitalization also poses challenges in terms of indirect taxation, especially in cases where consumers acquire goods and services from third countries, due to the lack of an international framework of value added tax rules for the collection of VAT in the country where consumption takes place (OECD, 2015).

Thanks to the constantly adopted measures, the positive trend of reducing the VAT gap is prevailing in all the CEE countries. Nevertheless, we are concerned that this trend will be disrupted by the Covid-19 pandemic and that the VAT gap can be expected to widen again due to a higher proportion of the gray economy and companies´ liquidity problems as a consequence of constraints and overdue receivables. An example can be the data on VAT arrears, published by the Polish government: in 2019 it was EUR 20.8 billion, while in 2020 EUR 21.1 billion (Szewczyk, 2021).

However, notwithstanding the above, it can be stated that the quality of governance is related to the VAT gap in general, but the significance of the impact of individual WGIs in most cases cannot be demonstrated due to collinearity. Still, the results can encourage the countries to determine the factors influencing the VAT gap negatively and improve the quality of governance and political factors, mostly with a focus on anti-corruption measures (see the Czech Republic, Estonia, Latvia, Lithuania, and Romania). This means that governments need to focus on creating a sustainable environment resistant to corruption and increasing public authorities’ credibility, particularly courts, prosecutors´ offices and the police, not only by criminal law but also by non-criminal preventive measures (for instance, by demonstrating the origin of the property while ensuring the efficiency of this type of measure by resolving the holder of the burden of proof). Other institutiond are also needed to solve the tax avoidance issues, mostly in the field of control mechanisms and criminal law rules, e.g., e-Government (Románová & Červená, 2017), online cash-registers e. g., in Slovakia, the Czech Republic, e-invoices and other institutes (see Štrkolec, 2017), or repressive measures in economic crime and the improvement of compliance risk management of tax administration in the selected countries. Also, the measures for the new phenomena such as taxation of the sharing economy or virtual currency issues should be applied. New business models (Li, 2018) based on advanced digitalization have also conditioned a fundamental shift in the view of the issue of taxation and tax evasion from the international point of view. The primary opinion expressed at the OECD Forum (1999) that no fundamental change is required compared to existing rules has been replaced by the idea that source country rules are not sufficient to meet the current requirements of the digital economy. Regardless of the level of change that the development of new technologies will bring in the future, it is clear that technological developments will have a major impact on the framework of tax systems, tax relationships and the system of authorities providing tax administration (Babčák, 2019). The possible range of changes is wide: from the introduction of some new types of taxes that will organically complement "traditional" forms of taxation (income tax, general consumption tax) to the complete "restructuring" of tax systems based on priority taxation by new forms of "digital taxes".

Therefore, repressive and preventive state measures to collect taxes and eliminate tax evasion and fraud should be considered (see also Schultzová, 2020).

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