Tax Avoidance, Fraud Detection and Related Accounting Issues

Insights from the Visegrad Group Countries


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edited by Piotr Luty

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Ladies and Gentlemen,
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We are all concerned with the tragic situation in Ukraine. We help as best as we can. We declare support and help. We offer places in our homes, psychological and material help, we organize collections of the most necessary things.

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Introduction

I present to you the third book devoted to the issues of tax avoidance, tax fraud and accounting in the countries of the Visegrad Group. The issue of tax avoidance is essential both from a scientific (cognitive) and practical (business) perspective. On the one hand, the authors wanted to explore the taxpayers' motives to use practices considered to be tax avoidance or tax fraud, while on the other, the reaction of taxpayers which is due to the ever-changing business environment they have to adapt to.

The book focuses mainly on the countries of the Visegrad Group: Poland, the Czech Republic, Slovakia and Hungary. The choice of these countries is based on two factors. Firstly, they have a common political and historical background, particularly their political and economic development in recent decades (after the end of the Second World War). Secondly, these countries, aware of their proximity and in line with the principles of partnership, created a platform for exchanging ideas and active international action for the common good, constituting the Visegrad Group. The book is an outcome of the project "Experience-sharing of the Visegrad countries as to tax avoidance activity" financed by the International Visegrad Fund.

Taxes are essential in providing the funds necessary to carry out various public functions. In this monograph, the authors focus solely on the tax burden on legal entities. By imposing taxes, a free disposal is limited to the part of the income generated by the companies and their redistribution to the state budget. Although understandable from maintaining state structures and implementing public finance tasks, such a situation may also arouse taxpayers' reluctance. Therefore, tax avoidance is a comprehensive activity of companies to reduce the tax burden.

There is a fine line between optimising the tax burden and tax fraud, therefore tax avoidance may refer to these two types of activities of economic entities: legal and illegal. In a particular way, the period of the COVID-19 pandemic increased the willingness of economic entities to reduce the tax burden and generate illegal income. Hence, it is essential to know and understand tax avoidance motives and introduce new tax fraud detection tools. Previous publications in respected journals, and published in English, on tax avoidance largely concerned developed

countries. A limited number of publications within the Visegrad Group indicate the importance of tax avoidance and potentially new methods of detecting tax fraud. Thus, this book is an essential contribution to research and to extending the existing knowledge of tax avoidance.

The monograph aims to present the motives tax avoidance issues, and counteract this phenomenon. For this purpose, the authors described theoretical issues related to tax avoidance motives, and indicated the important role of the accounting system in detecting tax fraud, as well as proposed a tool for revealing tax irregularities.

The book is divided into six chapters, which use various research methods concerning the literature review and text analysis of the researched documents. The chapters on techniques for detecting tax fraud use quantitative research, including descriptive analysis and Benford's Law.

The first chapter focuses on identifying motives of tax avoidance. Taxes cannot legally be not paid. They are one of the fundamental duties of citizenship for each person (except when the taxpayer is exempt from paying them under the relevant legislation). The question arises as to the motives for tax avoidance. The first chapter looks at research on the incentives that influence taxpayers' behaviour towards paying taxes. Tax avoidance motives include tax morality, tax mentality, tax fairness, level of education and knowledge about the tax system, culture, religiosity or degree of spirituality, experience in dealing with employees of tax offices and other tax enforcement institutions. Therefore, the motives for tax avoidance are not generally considered as saving benefits. The problem is more complex and multi-layered.

The second chapter is devoted to the analysis of Polish and international literature on tax avoidance, including the optimization of tax burdens. The division of the chapter into two thematic sections: publications from SCOPUS and those by Polish authors, result from the purpose of providing the inventory of the state of knowledge in the area of tax burden optimisation. Although there are many motives for tax avoidance (described in the first chapter), their scale can be measured by the amount of tax reduction. Therefore, an analysis of the available papers in the SCOPUS database and of Polish publications was performed using the following search terms: tax advantage, tax saving, tax optimization. The literature analysis following the phrases 'tax avoidance' and 'tax evasion' was presented in the earlier monographs of the project "Experience-sharing of the Visegrad countries as to tax avoidance activity" financed by the International Visegrad Fund. Based on the literature review, the continually discussed tax avoidance and tax optimisation issues result from the changeability of the tax law

regulations, which eliminates previously available solutions and creates new tools used to construct the fiscal strategy.

Accounting is an essential tool for communication with the economic environment as a language for describing economic activities. The relation between the accounting and tax systems can take two extreme positions: independence of systems and dependence on systems. The third chapter presents methods that can be used to identify high probability accounting frauds and tax avoidance in the Visegrad Group (V4 countries). All V4 countries use continental accounting systems, and financial statement manipulation is considered, especially profit smoothing for corporate income tax purposes. Despite the differences between the objectives of financial statements manipulation, the areas of possible manipulation are similar.

It is not only having autonomy or the lack of autonomy between the accounting and tax systems that contribute to tax avoidance – frequently, the very choice of the legal form of business activity may impact on reducing the tax burden. The fourth chapter overviews different countries' legal and tax solutions favouring or restricting private equity activity. It also describes the legal forms which private equity funds can adopt. The author carried out the tax law review in selected countries, such as the USA, and some European Union members, focusing on the Visegrad Group. In respect of private equity investments, there is no uniformity in the legal and taxation systems in the European Union.

The last two chapters are of an applied nature. The fifth chapter addresses tax fraud that could have occurred during the COVID-19 pandemic at accommodation facilities in the Czech Republic. The authors found measurable differences in the number of resources consumed (particularly electricity, gas, and water) by comparing the amounts used. Cases of tax fraud may be detected when the tax administrators have access to the databases of electricity, gas, and water distributors for accommodation facilities used for short-term rentals. In general, the tax administrators can increase the likelihood of detecting fraud by targeted control, make their human resources management more efficient and indirectly improve the market environment through prevention. The main advantage of the mechanism for fraud detection proposed in the chapter is that it can take place both in real time, and subsequently.

The final, sixth chapter is devoted to using Benford's Law to detect anomalies in the distribution of the value of tax revenues. It examines the impact of changes in the law relating to income from capital gains in Poland. Additionally, the distributions of other income values were analysed using the first-digit test. Based on the conducted research, it was found that the detected anomalies and the lack

of compliance with the Benford distribution indicated the existence of taxpayers' behaviour related to tax avoidance. Benford's Law may therefore be the first indicator to suggest to the fiscal administration the possibility of a budgetary offence being committed.

This book is an improvement and extension of knowledge in tax avoidance, especially in the countries belonging to the Visegrad Group. The authors hope that the book will be received with interest both by the scientific community and practitioners, ranging from tax consultants and statutory auditors to officials representing tax authorities. The authors hope that the research issues presented in this book will inspire new research directions and supplement the existing knowledge on tax avoidance.

Piotr Luty

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1

The motives for tax avoidance

*Dominika Florek**

1.1. Introduction

"To pay or not to pay? That is the question" – one can say, paraphrasing the words of Hamlet, the protagonist of the drama by Shakespeare, with regard to the basic dilemma faced by taxpayers as to the obligation to regulate public-legal burdens within the tax system to which they belong. Taxes cannot legally not be paid, they are one of the fundamental duties of citizenship for each person (except in situations where the taxpayer is exempt from paying them under the relevant legislation). The phenomenon of tax avoidance has always existed – albeit in various forms. The question arises as to the motives for tax avoidance. The author intends to look at research on the incentives that influence taxpayers' behaviour towards paying taxes. Any behaviour of a taxpayer starts with a need, which can be conscious or subconscious. A person decides on a particular behaviour if they have ended up satisfying a particular need in the past. The subconscious has stored a particular cycle as a necessary behaviour and each time the individual will behave in a particular way. People are only able to influence the habits they have developed, once they become aware of the need whose desire to satisfy drives their behaviour (Duhigg, 2013). The research problem can be formulated in the form of a synthetic question: what factors influence tax avoidance by persons obliged by law to pay taxes?

1.2. Classification of tax avoidance motives

Speaking of tax avoidance motives, one cannot ignore the attempt to classify the factors that are responsible for the decisions made by persons obliged by law to pay taxes in a given country. In order to systematise the factors influencing the actions of taxpayers, several divisions can be applied, one of them being the distinction between internal and external factors. The classification refers to

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the taxpayer's action, i.e. similar to the division of motivation for human action as internal or external (Pierścieniak, Krent, & Jakieła 2013). The internal factors influencing tax avoidance constitute an individual set for each person. They depend, among others, on a person's preferences, character, upbringing, level of tax awareness and education. Thus, an internal factor may be the honesty of the taxpayer followed at home, who is used to paying public contributions and has a habit of paying taxes. It may have been shaped, for example, by parents, grandparents and other close relatives, who paid taxes and spoke about tax issues as a contribution to the common state budget, from which all citizens benefit. A person raised in such conditions can satisfy the need to 'be honest' and 'belong' by paying taxes, otherwise they would face domestic discord. However, the second group of factors influencing the taxpayer's behaviour may include those that do not belong to the category of self-evident incentives. The external factors include penalties for non-payment of taxes, in the form of coercion imposed by the state which is intended to influence those obliged to pay taxes. Their purpose is to enforce the behaviour expected by the state, i.e. the fulfilment of the tax obligation. The strength of the influence of the internal factors is much stronger than of the external ones, as the factors in the former category flow spontaneously and are associated with the highest values.

Another type of classification of factors influencing tax avoidance can also be found in the literature. P.M. Gaudemet proposes a division that does not concern only the source of their origin. He distinguishes a systematisation according to four basic groups of incentives influencing tax evasion (Gaudemet, 1990):

- ethical factors,
- technical factors,
- political factors,
- economic factors.

Ethical factors shape taxpayers' behaviour towards tax liability. In an ideal world where taxpayers would trust the state and vice versa the problem of tax evasion would be negligible. The state should be a common good and be seen as a tool used to distribute fairly resources destined for public goods and benefits. In fact, historical experience presents a rather turbulent relationship between the state and citizens; in the past, some states often behaved like a thief towards the taxpayer. From the earliest times, tax collection involved a form of 'looting' of the resources of one social group. Nowadays, the scale of financing public goods or benefits with the money that comes into the budget from taxes is often highlighted. The tax system can be compared to a relationship in which there are tax payers on one side, and the state on the other, with both sides seeking to satisfy their needs. The state is guided by collecting as much revenue as possible to satisfy the

needs of its citizens, i.e. to finance public goods, to provide social benefits and to redistribute funds to individual operational tasks of the state, while on the other side, we have the taxpayer who, according to the principle of rationality, will seek to maximise his/her wealth. To this end, the taxpayer will want to minimise all burdens over which he/she has real influence. To escape from paying taxes is a kind of game of the taxpayer played with the state. The individual who wants to avoid paying taxes has to take into account the potential risks involved, such as fines, higher stress levels due to the possibility of being accused of crimes, and social exclusion. The amount of sanctions facing the taxpayer is comparable with the potential benefits. The decision is influenced by the environment, both external and internal to the individual. S. Owsiak distinguishes nine premise positively influencing the moral behaviour of taxpayers (Owsiak, 2017):

- relative fiscalism,
- stability of the tax system,
- effective functioning of democratic institutions,
- observance of the principle of equality before the law,
- precise formulation of legal regulations,
- observance of the principle of certainty of the tax burden,
- uncomplicated tax assessment process,
- demonstration of the relationship between the tax burden paid and benefits,
- reliable operation of the prevention and repression system.

Moderate fiscalism reduces the temptation to escape the payment of taxes. If taxes are too high then the person obliged to pay them faces a moral dilemma – of what attitude to adopt. The stability of the tax system brings peace of mind. In following the law, it allows to control the public and legal burdens and to take into account the amount of taxation in the long term when determining the strategy of a company. The effective functioning of democratic institutions allows taxpayers to know how their accumulated tax money is spent. Compliance with the principle of equality before the law concerns the same treatment of persons who are in the same or similar financial situation. Equality is not the same as tax justice, which is a more complex and relative issue. S. Owsiak refers only to equality in terms of the amount of the public law burden. A precise formulation of legal regulations prevents any arbitrary interpretation of them by taxpayers. The legal norms understood in this aspect should not contain too many gaps or loopholes in their interpretation. The observance of the principle of certainty of the tax burden is connected with the precise formulation of the tax law. The principle of certainty of the tax burden is respected when the applicable provisions of tax law do not allow for any arbitrary interpretation by the authorities of the tax apparatus. A clear and transparent manner of calculating the amount of tax promotes the

ethical conduct of taxpayers. The presentation of the relation between the tax burden paid and the benefits helps to reduce tax evasion if the taxpayer understands how the funds are used. The reliable operation of the system of prevention and repression influences the decisions made by the taxpayer. If tax fraud and evasion implies high risks and significant financial penalties then the taxpayer is less likely to seek ways to avoid tax (Owsiak, 2017).

Among the factors affecting tax avoidance, technical reasons can be distinguished. When analysing this aspect, attention should be paid to the complexity itself and the level of complexity of the tax system. This consists in many factors, among others, the number of individual tax tariffs, tax allowances and the degree of dependence on the subject of taxation. The tax structures in Poland are not the most transparent and simple. In addition, the latest package of changes to the tax system in Poland, which came into force as of 1 January 2022, has introduced a number of new provisions. For an entrepreneur, the very determination of the financial result can be challenging – applying the relevant provisions of tax and balance sheet law as necessary. Those preparing tax returns must have extensive knowledge of the subject, whilst accounting for tax on employment contracts may require specific information. Taxpayers can settle accounts together with their spouse and take advantage of a number of allowances that have to be included. In Poland, taxpayers can settle their returns via an electronic platform. Logging into the service of the Ministry of Finance requires some information about the income and tax for the previous year, as well as information about the income in the year being settled. The tax system is regulated by dozens of legal acts. The legislator has tried to explain and define precisely the various structures to be followed.

Still, in rapidly changing times, the law must evolve along with progress; this is the only way in which the law can keep up with reality. This is not always sufficient, for example the definition of deductible costs causes many problems for taxpayers – it is one of the most frequent queries addressed to the Director of the National Tax Chamber with a request for an individual interpretation. When speaking about the level of complexity and sophistication of the tax system, it is necessary to mention the physical payment of the fee.

Another group of incentives influencing the behaviour of persons paying public levies are political factors. Taxpayers who disagree with the political views of the ruling party or the way budget funds are spent may, in the form of expressing their opposition, withhold from paying taxes. To this end, they can try to move the accounts of their company abroad to tax havens, provided that the infrastructure of the company allows them to do so. Taxpayers can also work in the grey economy and not report all or part of the income or revenue they receive. Another example

of political factors influencing tax decisions is when large entities ignore their tax obligations towards the state. These are usually strategic actors in the economy. They can exert pressure by engaging trade unions, environmentalists or other pressure groups in a dispute (Owsiak, 2017). P.M. Gaudemet identifies fiscalism as one of the reasons why taxpayers avoid paying taxes. One of the primary and most important tasks of the state is to collect and use the money collected to finance public benefits and goods. The problem begins when social or economic solutions are implemented that are not accepted by part of the population. The redistribution of public money and using it as an instrument of social policy can lead to conflict. Groups of people who do not support the actions of the ruling political party or coalition, may express their dissatisfaction with the way the resources are redistributed. This may lead to a situation in which some citizens feel oppressed by the ruling faction. P. Leroy-Beaulieu pointed out that a taxpayer can in good conscience conceal his/her assets from the state, which (in his/her perception) is behaving like a thief. Assessing whether a taxpayer is being exploited by the state is subjective. There is no single complete set of behaviour indicative of exploitation. Fiscalism can manifest itself in higher taxation on certain industries such as mining. This is a manifestation of fiscalism used as an economic policy tool. By imposing higher public and legal burdens on a certain group, it aims to force a certain kind of behaviour. The unequal treatment of taxpayers contributes to negative public sentiment towards the political group in power. People who work in an industry subject to higher taxes may feel oppressed by the state. Taxpayers who do not agree with the policy pursued by the ruling party may therefore react inappropriately to the situation. Payment of taxes can lead to a situation where it is inefficient or even unprofitable to operate in industries with high burdens. Citizens under pressure may seek new sources of livelihood, but they may also direct their frustration towards the ruling party. Such behaviour, as history shows, has often degenerated into rebellion – "when a man has nothing left to lose, he is most dangerous" (Gaudemet, 1990). Another manifestation of fiscalism can be when taxpayers with higher incomes are inappropriately taxed more than those earning less. Such actions can have effects that go much further – for example, to lowering entrepreneurship in the country.

Another division of factors influencing tax avoidance can be created based on the division of the tax environment used by M. Poszwa into four levels: normative, organisational, psychological and economic. Based on the aforementioned, the factors influencing taxpayers' behaviour can be classified according to their belonging to one of these dimensions (Poszwa, 2007). The classification is somewhat similar to the one proposed on the basis of P.M. Gaudemet's division. Depending on the adopted behavioural model, the taxpayer will act in accordance

with the decision taken, pursuing the goal he/she has chosen and satisfying internal needs, which are the basic motivators for action in people.

1.3. Principal psychological factors influencing tax avoidance

Numerous studies conducted around the world point to factors that influence tax avoidance. This subsection will present some of them, i.e.: tax mentality, tax morality, tax fairness, level of tax knowledge, degree of education, influence of religiosity and experience during contacts with officials in the tax administration.

Tax mentality is the resultant of general attitudes, norms and beliefs that a social group or an individual adopts or identifies with in relation to taxation, or, to be more precise, the state, the tax system and the way public services and goods are distributed and financed. Tax mentality was first defined by G. Schmolders in the early 1930s (Niesiobędzka, 2013, as cited in: Feld, Schmidt, & Schneider, 2010). The formation of the tax mentality, like all other processes of forming subconscious views, begins in childhood. This process is influenced by, among other things, the behaviour and statements of parents and the world view of their close relatives. The atmosphere in the social group to which the young person belongs also influences the perception of the 'taxation' side of the world. In most cases this is a subconscious process. The attitudes formed in childhood may change over time with the process of acquiring knowledge, the growth of individual awareness and the acquisition of life experience. Thus tax mentality is a resultant of many factors, a process shaped practically throughout life (Gomułowicz & Mączyński, 2018). The formation of tax mentality is also influenced by external factors, namely the political situation in the country, the legal system, the general assessment of government institutions, the history of the country, the educational level of the population, culture and emotional intelligence, i.e. the level of awareness (Niesiobędzka, 2013, as cited in: Kirchler, 2007). Not insignificant is also the behaviour of the ruling party and the way it communicates to the population of a country how public funds are distributed. and the transmission of information about tax changes (Gomułowicz & Mączyński, 2018).

Tax mentality can be divided into Southern and Northern. It is also worth bearing in mind that currently the distinction of taxpayers in this respect is slowly blurring due to, among other things, more migration between the EU countries, the higher degree of mobility of citizens and the increasingly visible globalisation processes. The Northern tax mentality is characterised by society paying its fair share of taxes. In countries with a northern mentality, the word tax has a relatively positive connotation compared with words denoting the non-payment of public dues.

In Sweden, the word tax ('skot') describes a burden as a financial contribution, whereas in England, the noun for duty speaks of obligation and duty to pay, while the equivalent word for tax can be translated as ability to pay, and the terms such as tax avoidance and evasion are used. This may also be influenced by the stricter and more efficient public administration in northern European countries. The Southern tax mentality is characterised by tax avoidance and evasion, because the emotional colouring of the words carries a different message. In countries with a Southern mentality, the words for tax have roots in Latin ('imponere'). In France, for example, they are close to terms such as usurer ('maltotier'), blackmailer ('imposteur') and even thief. Southern European societies live in the belief that one should show common sense and not pay taxes or pay them only partially (Gomułowicz & Mączyński, 2018). It is worth noting that even within the same country there may be differences in tax mentality. J. D'Attoma points to the formation of two different types of clientelism in Italy, which occurred during the nineteenth-century unification and led to a different perception of the tax obligation by the country's inhabitants. The reason was the creation of two different environments for tax compliance – a different one for those living in the south of the country, and a different one for those from the northern part of the country (D'Attoma, 2017).

When discussing tax mentality, it is impossible not to mention V. Braithwaite, who indicates that a taxpayer can adopt one of five motivational attitudes towards taxes and paying taxes, i.e.: commitment, capitulation, resistance, disengagement, or game playing (Braithwaite, 2003, as cited in: Niesiobędzka, 2013). Each of the mentioned motivational attitudes of taxpayers is characterised by a specific set of beliefs and actions taken by the taxpayer.

The concept of tax mentality can be considered from two perspectives, that of the taxpayer and that of the state. The taxpayers are obliged by law to pay public levies, while the state, by means of statutory bodies, institutions and tools, records, controls and imposes penalties for failure to fulfil the obligation incumbent on society (Gomułowicz & Mączyński, 2018). B. Frey believed that the relationship occurring between the taxpayer and the state has a significant impact on the behaviour of the individual. Considering the relations between the two entities, an individual obliged to pay public contributions develops an opinion about the entire tax system (Frey, 1997). In this way, the taxpayer's feelings towards the obligation to pay taxes are shaped. A public-legal obligation can be perceived positively or negatively as a necessary evil. If the taxpayer has a sense of duty, loyalty and concern for the state, he/she will act differently from a member of society who does not hold these values. The behaviour of the taxpayer is also influenced by the social group to which he or she belongs (Kirchler, 1998). It is

worth noting that social disapproval of tax avoidance can cause great psychological discomfort and a sense of alienation in a person who wants to commit an act that is against the tax law, or on the verge of non-compliance (Niesiobędzka, 2009).

A. Gomułowicz points out that there is a connection between the mentality of tax authorities and the mentality of taxpayers. Tax institutions aim to increase revenue to the state budget, which means, among other things, effective tax collection. An important element is the manner of implementation – what kind of reactions it causes in taxpayers. One of the components of this process is the way tax offices relate to the payers. M. Wenzel, in cooperation with the Australian Taxation Office, conducted a study in which he sent three different letters to a group of over 2,000 people. The recipients were taxpayers who were late with their payments. The debtors were divided into three groups, the first of which – the control group – received a standard letter with a brief description of the situation and threatening financial consequences for further non-payment. The second and third group of the payers received letters within the framework of the research experiment with a changed content of the message. A letter was sent to the first group in which the beginning was identical to that of the control group, a paragraph was added in which the office indicated the reasons for sending the letter. The second experimental group received an personal notice. The letter emphasised the belief in the honesty of the individual concerned and indicated that the delay in payment was certainly not due to deliberate action. The treatment of the taxpayer by state institutions was reflected in the results of Wenzel's study. People who received one of the experimental letters settled their tax liability faster than the control group. The greater the respect and friendliness in the relations between the taxpayer and the institutions of public administration, the lower the willingness to avoid taxation shown by persons obliged to pay public contributions. The more, in the subjective sense of the individual, the overall tax system is fair, the more willingly taxes are paid (Niesiobędzka, 2014).

Experiences borne by taxpayers in contact with employees of tax offices or other institutions involved in, among others, collecting and enforcing tax compliance, influence not only the tax mentality but also tax avoidance (Alkhatib, Abdul--Jabbar, Abuamria, & Rahhal, 2019). The efficiency of the state administration, i.e. the level of competence of officials and their independence of officials, is among the indicators of governance constructed by D. Kaufmann (Kaufmann, Kraay, & Mastruzzi, 2004). On their basis, the quality of state institutions can be assessed. Studies using this measure showed lower levels of tax morality in residents of countries that had the lowest values of Kaufmann indicators (Frey & Torgler, 2007). There are factors that do not directly affect tax avoidance, but indirectly – by shaping citizens' attitudes and attitudes towards tax liability.

The second factor influencing tax avoidance is tax morality. The term was introduced into the literature, as with tax mentality, by G. Schmolders, who called tax morality "the attitude of a group or a whole population of taxpayers towards the issue of fulfilling or neglecting tax obligations as taxpayers anchored in the tax mentality and the consciousness of being a citizen" (Niesiobędzka, 2013, as cited in: Kirchler, 2007). In turn, L. Feld and B. Frey called tax morality the internalised obligation of taxpayers towards the state (Feld & Frey, 2002), while J. Alm and B. Torgler (2006) defined tax morality as the intrinsic motivation of citizens to pay taxes). Tax morality in resistance models is treated as an exogenous variable that directly affects taxpayers' behaviour. According to J.E. Stiglitz, people pay taxes because they do not have sufficient knowledge on how to legally evade taxes. This is due to a lack of knowledge of tax laws and gaps in these laws. On the basis of this assumption, it is purely theoretically possible that all taxpayers do not pay their contributions to the state budget because they have adequate knowledge. One factor that could influence more conservative behaviour would be the imposition of very high fines (Niesiobędzka, 2009). Defining the factors influencing tax payment, taking into account the resistance utility model, four main determinants can be distinguished (Niesiobędzka, 2009):

- the amount of the fine,
- the probability of control,
- the level of applicable tax rates,
- the individual income.

It is worth looking at one more element that appears with the tax mentality, namely the ethical dimension. What will be the 'good' in the context of taxation? On the face of it, linking concepts of a spiritual nature to the practical tax rules of any country may not seem necessarily appropriate. However, taking a closer look at the issue and breaking it down into its proverbial elements, questions begin to arise right from the very start. Viewed from the perspective of society as a whole, paying taxes is necessary to provide an infrastructure, public education, access to medical care and to foster a sense of security by funding the relevant services. Budget revenues, mostly from public contributions, ensure access to benefits and meet the basic needs of citizens. An efficient and properly structured tax system ensures peace of mind for citizens in a given country. Not all countries in the world operate under such a model as the European one. Even in the most ancient times, rulers knew that they could achieve peace in the state by ensuring minimum, but relatively better than current conditions of life for the poorest strata of society, who constitute the largest group in every country. Today, in times of apparent freedom and prosperity, the same mechanism still operates. It is also worth noting that the largest budget revenues are always generated by the richest

section of citizens in a country, because they are the ones who pay the highest taxes. Can tax morality be graduated or depend on the level of income? It happens that the requirements of the state are different for one group than for another (Owsiak, 2017).

Tax law is concerned with external factors whereas moral law is concerned with an individual's sense of whether a particular behaviour is ethical. Taxpayers may exhibit a variety of behaviour towards taxation (Gomułowicz & Mączyński, 2018). Inextricably linked to tax issues is the shadow economy. Its size is shaped by the dependence and risk of detection of untaxed activity and by the system of penalties and fines imposed by the state for such activities of entrepreneurs. Businesses undertake two types of activities in the shadow economy. The first is the complete failure to register a business and carrying out all transactions on the market outside of taxation. The second type of tax avoidance is the concealment of income by sole traders, made possible by overstating tax costs, employing workers informally or declaring lower wages than real ones and therefore paying lower social and health contributions, as well as concealing the size of the actual business. The formation of a shadow economy and its expansion negatively affect not only the size of budget revenues but also the morale of the whole society (Gołębiowski, 2007).

What is the difference between tax mentality and tax morality? Tax mentality is defined as the behaviour or mindset of an individual or group on the subject of taxation. It assumes arbitrariness in its nature and adopts a certain type of behaviour typical of itself. People have different mentalities, even within one country there may be several types of mentality. The main difference is that the tax mentality is neutral, it does not judge what behaviour is ethically appropriate in a given situation and it does not set standards according to which an individual should act, whereas tax morality considers the taxpayer's behaviour in terms of 'right' and 'wrong'. In so doing, it creates a kind of moral code of conduct by which it indicates standards of behaviour.

Another important factor influencing the behaviour of taxpayers towards the obligation to pay public dues is justice. The first principle of justice in direct relation to taxes was formulated by A. Smith. Nowadays, the principle of equity is considered in a different sense than at the time of the Father of Economics (Stanek, 2016). The problem arises when it is necessary to decide what behaviour or legal provision is just. The essence of the issue can be considered using two concepts:

- vertical justice,
- horizontal justice (Stiglitz, 2000).

According to the theory of vertical justice, individuals who are essentially identical should be treated equally. Depending on the differences between them, the concept of vertical justice is to mix disparities. In the case of taxes, it comes down to a simple statement that those who are able to pay a higher public levy should do so. Vertical justice in Poland is expressed, among others, by the presence of a progressive scale in the case of personal income tax (Pasternak-Malicka, 2017). Stiglitz pointed out three problems that arise in the concept of vertical justice: defining the people who should pay higher taxes, formulating the legal rules establishing these rules, and specifying what amount should be paid by taxpayers fitting the definition. The concept of horizontal justice manifests itself in the equal treatment of individuals who are identical in all relevant respects. The tax system cannot discriminate against individuals on the basis of gender, colour or religion. When considering the essence of horizontal justice, there are two issues that need to be resolved. The first is to determine what it means for the individuals concerned to be identical, to select the characteristics that will determine the relationship. The second issue concerns determining what it means for the individuals concerned to be treated equally (Stiglitz, 2000). In addition to distributive justice involving issues of vertical and horizontal justice, the literature distinguishes procedural justice of taxes. M. Niesiobędzka points to the psychological premise guiding human judgement – taxes are as fair as they are perceived as such by society. The procedural justice of taxes can be analysed at the individual, group and social level. Procedural justice takes into account the technical aspects of settling public law liabilities. Procedural justice is influenced by the taxpayer's relationship with the administration, current tax rates, the way tax revenues are managed (Niesiobędzka, 2009).

Religiosity is also among the factors influencing tax avoidance. This thesis is supported by numerous empirical studies conducted by researchers around the world. The determinant is not the influence of a specific religion, as the correlation has been confirmed in followers of Islam in Turkey (Benk, Budak, Yüzba, & Mohdali, 2016), Buddhism and Taoism in China (Wang & Lu, 2021), Karma phala practitioners in Bali (Yuniarta & Purnamawati, 2020), residents of Indonesia (Rahmawati & Dwijayanto, 2021) and even the Czech Republic – one of the most atheistic countries in Europe (Jun & Yoon, 2018). Not only religiosity, but also the atmosphere of religiosity (in the context of Buddhism and Taoism) has an impact on tax avoidance. Research on a sample of nearly 14,000 firms in China indicated that firms based in a location with a stronger atmosphere of religiosity are more likely to be better at tax compliance. The effect is strengthened in companies with more women in managerial positions (Wang & Lu, 2021). On this basis, one might be tempted to conclude that being religious regardless of the type of faith practiced has a positive effect on tax compliance. The thesis is supported by the research

conducted by Torgler. A multivariate analysis showed that the variables church attendance, church trust, religious education and active participation in a church or a religious organisation increase tax morality (Torgler, 2006).

The behaviour of those obliged to pay taxes is also influenced by the level of tax awareness. One of the conclusions of the experiment conducted by K. Eriksen and L. Fallan indicates that increasing tax knowledge significantly affects the perception of one's own tax evasion as a more serious crime (Eriksen & Fallan, 1996). In addition, studies conducted on taxpayers around the world in the 21st century indicate tax knowledge as an important factor that shows a correlation with the tax payer's behaviour aimed at avoiding or reducing the public-legal obligation (Kassa, 2021; Kushwah, Nathani, & Vigg, 2021). In turn, low levels of knowledge about how tax systems work breeds distrust (Newmam & Nokhu, 2018, after Niemirowski, Wearing, Baldwin, Leonard, & Moobs, 2012). It is worth noting that it is not only knowledge of the tax system that affects tax avoidance, but also the degree of education. Kirchler argued that the general level of education is significantly related to tax compliance (Newmam & Nokhu, 2018, after: Kirchler, Kogler, & Muehlbacher, 2014). This is supported by the results of a study conducted on Malaysian entrepreneurs – the higher the level of education, the higher the level of tax morality, which in turn translates into the taxpayer's behaviour in terms of avoiding the payment of public and legal burdens (Pui Yee, Moorthy, & Choo Keng Soon, 2017).

P.M. Gaudemet points out the importance, in the context of tax avoidance, of the desire of states to improve relations and regulations that make it easier for the taxpayers to find their way in the tax system. For example, in Polish tax law, a natural person conducting business activity, in the case of uncertainty as to the correct application of regulations, may turn to the Director of the National Fiscal Information for an individual interpretation. In a query to the institution, the taxpayer presents the factual state which already exists or describes a future event. The letter should also include the manner in which the taxpayer believes it should proceed. The NIS will then issue a conforming or non-conforming interpretation, indicating to the taxpayer the appropriate action (The act of 16 November…, 2016).

Tax avoidance is also influenced by citizens' perception of corruption. Its prevalence significantly increases tax evasion and undermines the benefits of tax control (Alkhatib et al., 2019).

This subsection discusses the main motives for tax avoidance originating from the taxpayer's psychological environment. For the purpose of systematisation, the factors are summarised in Table 1.1. In the summary presented below, the motives and their short definition are included, based on the collected literature.

Table 1.1. Main psychological factors concerning tax avoidance motives

Psychological factors	Definition
Tax mentality	The general attitudes, norms, opinions and beliefs adopted by a social group or individuals in the context of taxation.
Tax morality	Taxpayers' basis for tax liability. This includes an assessment of behaviour, which is considered in ethical terms of ‚right' and ‚wrong'. Individuals or social groups form a kind of moral code which indicates the correct, from the perspective of the „assessor", standards of behaviour.
Tax fairness	Subjective perception of the tax system and the amount of the burden of public-legal tributes. Tax justice is perceived at individual, group and social level.
Religiosity/level of spirituality	Mostly the level of religiosity and the degree of spirituality is a kind of set of moral principles that an individual or a social group follows in life.
Tax awareness/ knowledge about tax system	Taxpayers' knowledge of the functioning of the tax system and the level of understanding of the mechanisms related to the redistribution of public funds.
Level of education	Educational degree of the taxpayer.
Culture	The totality of a particular society. Associated with both the material and spiritual aspects. The framework of culture may be defined more broadly by nationality, less so by the social group living in a particular area.
Experience during contacts with officials in the tax administration	Individual experiences of taxpayers in contact with tax administration officials shaped, inter among others, on the basis of staff competence, speed of resolution of cases.

Source: own elaboration based on literature discussed in the subchapter.

1.4. Conclusions

The reasons for tax avoidance can be found in various areas of life. Many researchers around the world have looked at the motives of taxpayers' behaviour towards the obligatory duty of paying public levies. As indicated by the research by D. Kahneman and A. Tversky, human action depends on the perception of the world. In the first instance, a person makes a choice based on a subjective assessment of probability, not on the possibility of the occurrence of a given phenomenon from a logical point of view – using the analysis of facts and statistics (Tversky & Kahneman, 1979). In this study, the greatest attention is paid to the psychological factors affecting taxpayers' behaviour towards tax liability. Tax avoidance motives include tax morality, tax mentality, tax fairness, level of education and knowledge about the tax system, culture, religiosity or degree of spirituality, past experience in dealing with employees of tax offices and other tax enforcement institutions. The literature analysis indicates that these are the most

significant factors influencing tax avoidance. It seems interesting that a relatively small number of conducted studies have taken into account the cultural factor, or more precisely, culture understood as a set of ways of behaviour and attitudes characteristic of the inhabitants of a given region. On such basis, directions for further research may be set, namely to carry out empirical research aimed at verifying the influence of regional culture on tax avoidance.

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2

Types of tax burden reduction, types of tax burden optimisation and its results – a literature review

Anna Fuks, Patrycja Świerczek-Dutka**

2.1. Introduction

The chapter aims to create an inventory of the state of knowledge on tax burden optimisation as a part of tax avoidance and its results. Being aware that the publications of Polish authors primarily written in Polish do not appear in the SCOPUS database, this literature study was divided into two parts. In the first part, the authors focus on English-language literature, and for this purpose used the SCOPUS database. The first part of the chapter reviews the most frequently cited articles, whose titles, abstracts and keywords contain phrases referring to tax optimisation: tax advantage, tax saving, tax optimisation. The analysis omitted the following expressions: tax avoidance, tax fraud, tax manipulation, tax evasion. The indicated phrases were examined earlier in the chapter published as part of the first monograph on tax avoidance research (Luty & Costa, 2021). Therefore, this part is intended to deepen the original study and allows to find a research gap from a thematically related area to tax avoidance.

The second part of the chapter analyses publications by Polish authors, as they are crucial in terms of research and application just as their English-language counterparts. The second part of the chapter describes the typical phrases regarding tax burdens, and reviews mostly Polish literature as a prelude to further in-depth research. The problem of tax resistance is inextricably linked to the fundamental characteristics of obligatory burdens including, among others, the compulsory nature, the non-refundability and the gratuitousness of the benefit (The Act of August 29, 1997 – Tax Ordinance…, art. 6). The mandatory character results from the source of the fiscal obligation, which is the public authority. Failure to comply with the obligation may result in applying sanctions by the

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relevant authorities, acting within the scope of powers set out by the law. Failure to fulfil a tax obligation is often associated with violating the Fiscal Penal Code and constitutes a fiscal delict or a fiscal crime (Wolański 2016, p.18). In turn, the non-refundability of the tax means that a correctly realised benefit has a one-off and definitive character. Apart from clear cases of corrections and amendments, the amounts collected are not refundable. The statutory definition of tax allows only for a monetary form of settling the liability in question (Gomułowicz & Małecki 2008, p. 136).

However, gratuitousness consists in the absence of consideration. The entity obliged to pay the tax does not directly receive any substitute from the state. The income from this entitlement increases the sum of budget revenues from which general social tasks are financed (e.g. education and healthcare). Thus, at most, it can be said that there is a general charge. This is the fundamental difference between a tax and a fee. In the case of the latter term, in return for payment, a specific benefit is received from a public entity (Głuchowski & Patyk, 2011, p. 11).

The above features of taxes result in taxpayers looking for different ways to minimise the fiscal burden. Depending on the strategy adopted, these actions differ in their attitude to legal regulations, the level of acceptability by tax authorities and the amount of tax liability that can be reduced. For this reason, in tax law practice, various concepts define activities whose primary objective is to reduce the fiscal burden.

2.2. Tax burden optimisation in international publications from SCOPUS

The SCOPUS database includes highly indexed journals with top quality articles published in English. The review system ensures the quality of publications in journals from the SCOPUS database. There are also essential and good quality publications outside the SCOPUS database – by Polish authors – are discussed later in this chapter. Thanks to the possibility of exporting information about the manuscripts included in the SCOPUS database, it is possible to use abstract text analysis tools in further analysis.

To thoroughly investigate the issues related to reducing tax burdens, an analysis of the articles included in the SCOPUS was carried out. The indicated search criterion considered the phrases (tax advantage, tax saving, tax optimisation) included in the titles, abstracts, and keywords of articles from the Scopus database. Another limitation indicates that only articles are to be searched – without considering conference materials, book chapters, etc. However, the third limitation

indicates a restriction to only two areas: Economics, Econometrics and Finance; Business, Management and Accounting. The initial sample consists of 507 items. The oldest article dates from the end of the 1960s, as shown in Figure 2.1. An upward trend in the number of publications can be seen since 2006, with the highest increase in 2017. In 2019 and 2021, there was a similar, high number of publications (41 and 42 respectively).

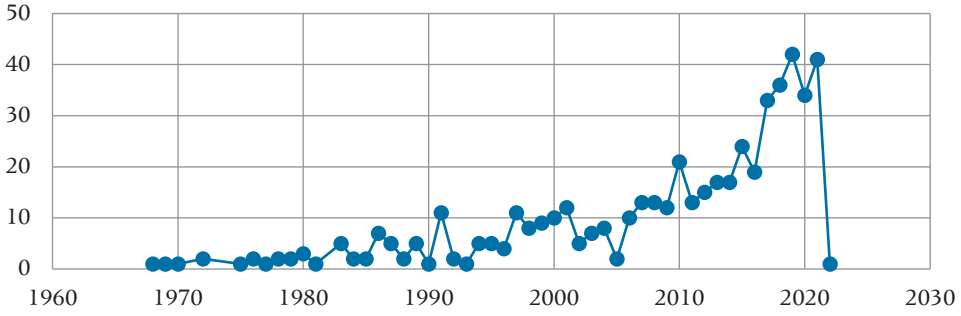

Fig. 2.1. Number of publications from the studied sample from 1968 to 2022

Source: own study based on www.scopus.com.

The content of the obtained data was analysed with the VOSviewer software, version 1.6.18. It was programmed to search for items that coexist in the text at least five times during the analysis preparation. The program recognised 1,500 items, of which 31 items reached the threshold.

Figure 2.2 shows a map of relationships and their intensity. The analysis allowed to identify five research sub-areas concerning tax savings, tax benefits and tax optimisation in the research sample of 507.

The first research sub-area (the cluster marked in red) includes such phrases as effective tax rate, tax avoidance, tax evasion, tax optimisation, tax planning, tax policy, tax savings, taxation, and transfer pricing. This area primarily concerns the possibilities that make it possible to achieve broadly understood tax benefits. The second research sub-area (the green cluster) includes the following phrases: corporate income tax, debt, empirical analysis, foreign direct investment, multinational enterprise, profitability, tax saving, and tax system. This area focuses on studying foreign direct investments, their profitability and the impact on the amount of income tax paid by large enterprises. The third research sub-area (the blue cluster) includes the following phrases: insurance, investment, tax, tax incentive, tax reform, and united states. This area focuses mainly on the impact of investments made due to tax reforms or tax incentives on taxes.

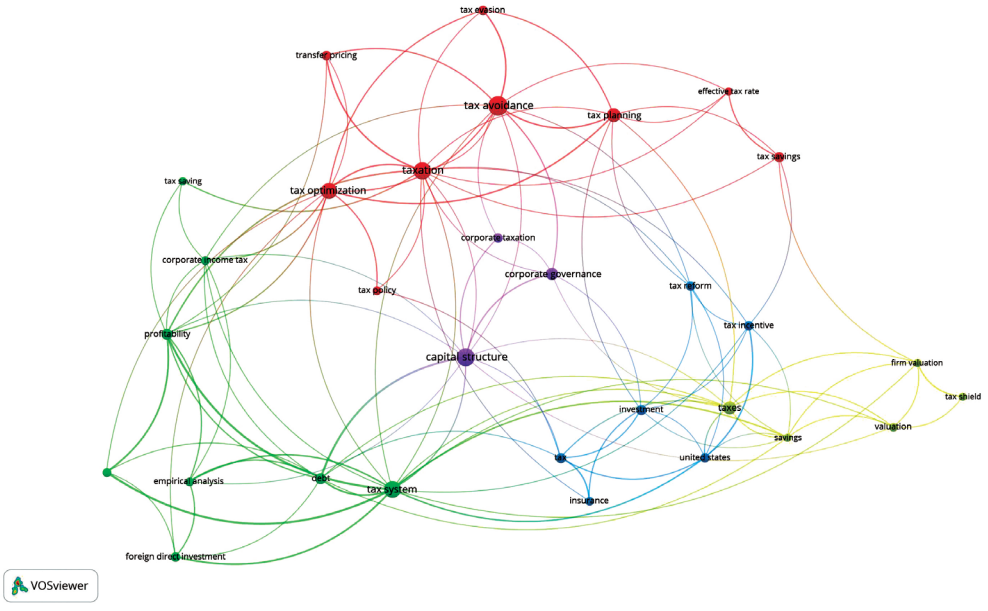

Fig. 2.2. Map of relationships and their intensity

Source: own study based on VOSviewer.

The fourth research sub-area (the cluster marked in yellow) includes returns such as company valuation, savings, tax shield, taxes, and valuation. This area examines, among other things, the conduct of company valuations in the context of the benefits obtained from tax shields and their impact on taxes. The fifth research sub-area (the purple cluster) includes the following phrases: capital structure, corporate governance, and corporate taxation. This area focuses primarily on creating the capital structure as a response to the tax system.

The highest intensity of links is mainly characterised by three main themes from the first research sub-area (tax avoidance, taxation, and tax optimisation) and one from the second and fifth sub-area (tax system and capital structure, respectively).

The evolution of the themes over time is shown in Figure 2.3. The earliest topics that were most popular were those relating to taxation and profitability of investments and their relation to savings and tax benefits. The issues of tax evasion have not been researched recently with much frequency and do not show such strong links as lawful tax avoidance. The currently discussed topics in the context of obtained tax benefits concern tax avoidance and its relations with

corporate income tax, effective tax rate, and tax policy and tax shields, indicating the need to conduct further research on tax avoidance.

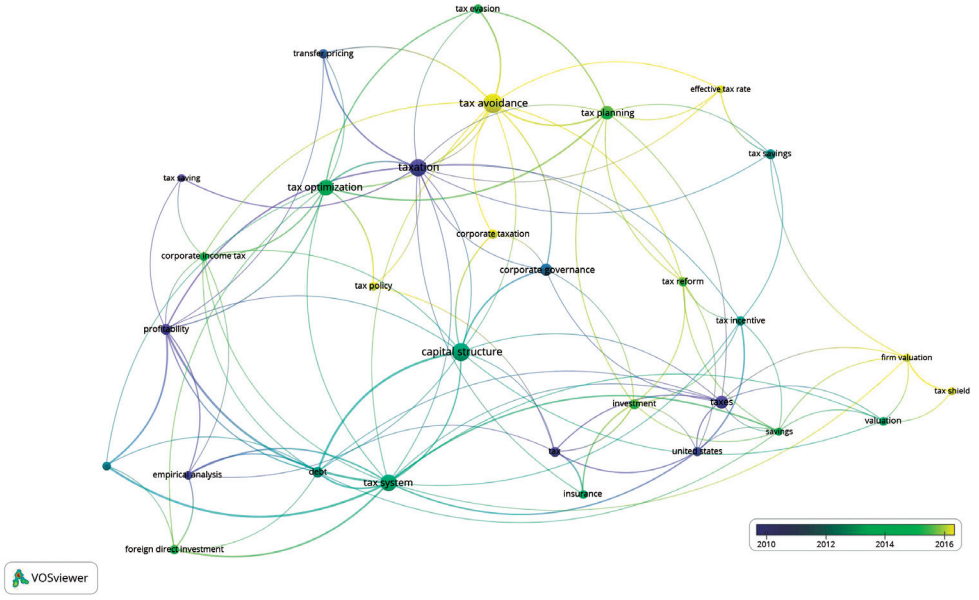

Fig. 2.3. Evolution of topics over time

Source: own study based on VOSviewer.

The authors of the two most frequently cited articles (Leland, 1998; Leland & Toft, 1996) took up the topic of the optimal capital structure as a response to, among other things, the applicable tax system; (Morellec, 2004) also dealt with a similar subject. The problem of taxes and capital structure was also addressed in (Maksimovic & Zechner, 1991). The discussed topic is reflected in the fifth research sub-area (the purple cluster).

The subject of as many as half of the analysed articles, including the following three, most frequently cited articles from the top five listed (Barclay & Smith, 1988; Glaeser & Shleifer, 2001; Graham & Smith, 1999), were mainly included in the first, most general research subarea (the red cluster). Therefore, the subject matter concerns research on such issues as obtaining broadly understood tax benefits and savings, tax planning, tax avoidance, and tax evasion. This research sub-area is most often combined with the others, also reflected in Figure 2.2.

In terms of the issues studied, the remaining articles should be classified into several research sub-areas simultaneously. Most often, the issues from the second

research sub-area (the green cluster) were combined, primarily with the first (the red cluster) and third sub-area (the blue cluster) issues. The authors researched investments, their profitability, dividend policy, corporate governance and their impact on the obtained tax benefits and savings. The articles also touched upon such issues as mergers and transformations of companies and the use of tax havens.

Analysing the above, it becomes essential to recognise the importance of researching tax avoidance as a factor influencing the tax planning itself and shaping the tax burden incurred and the benefits or savings achieved.

2.3. Tax burden optimisation under Polish tax law in Polish publications

The VOSviewer tool could not be used to analyse Polish manuscripts in the field of tax avoidance, including in particular tax optimisation, therefore the analysis was carried out without visualising the connections between the words of the abstracts.

The definition of the term "tax optimisation" has not been included in the Polish legal regulations. Tax law practitioners generally use the expression to minimise the fiscal burden. The combination of definitions of "optimisation" and "tax" leads to the possibility of obtaining an ambivalent understanding of the whole phrase. The first part of the phrase means using mathematical methods to obtain the most advantageous solution, considering given assumptions. Therefore, this does not exclude the consideration of this phrase from the perspective of the fiscal authorities, i.e. setting such a tax rate to maximise revenues in the public sector (Ladziński, 2008, p. 18).

Due to its generality, this definition of the expression under analysis may cause difficulties in distinguishing "tax optimisation" from "tax evasion" or "tax avoidance". The main objective of all these methods is to achieve the same effect, namely to reduce the tax burden.

For this reason, some studies, for the purpose of defining this concept, emphasise the positioning of the discussed expression in the aspect of legality. For example, according to Spoz (2012), tax optimisation is a well-thought-out tax policy of a company, which in practice consists in adopting such legally permissible solutions that make it possible to minimise the amount of taxes paid by the company or to spread them over time.

Similarly, according to Ladziński (2008), tax optimisation should be understood as the choice of a legal way to achieve a specific financial result with the

simultaneous assumption of minimising the existing fiscal burden. Thus, the analysed phrases include "tax planning" and "saving activities".

Therefore, in contrast to tax avoidance and tax evasion, activities falling within the scope of fiscal optimisation understood in this way are not subject to legal restrictions. The taxpayer is not constitutionally obliged to pay the state's highest possible amount of tax. It is in his/her interest to know his/her rights and to be able to use them properly. Thus, the expression presented cannot be considered derogatory by definition. For this very reason, it seems unjustified to accuse entities of using optimisation methods of circumventing the law.

Conceptually very similar to the term tax optimisation is the term tax avoidance. Both expressions refer to actions not prohibited by law to achieve certain fiscal benefits (e.g. reducing the amount of tax liability or postponing its payment date for many years). The primary and, simultaneously, the most significant difference concerns the compliance of these actions with the content and the purpose of the binding legal regulations. While fiscal optimisation is not contrary to the legislator's intention, tax avoidance violates it. The perception of reducing the tax burden depends mainly on the party under analysis. As a rule, taxpayers are more inclined to consider most such activities to be legally permissible optimisation. Yet, tax authorities most often are not in favour of treating them as acceptable in light of the applicable norms, considering them as avoiding the fiscal burden (Kuźniacki, 2017, p. 16).

In the Polish tax system, the definition of tax avoidance is contained in specific legal provisions. This concept consists of actions that meet the following conditions:

- they are contrary to the object or purpose of the legal norms,
- obtaining tax benefits is one of the main reasons for their performance,
- they are characterised by the artificial manner of their implementation (The Act of August 29, 1997 – Tax Ordinance…, art. 119a).

In view of Polish tax law regulations, actions fulfilling the above-described characteristics do not lead to achieving the desired fiscal benefits. This means that tax consequences in a given situation are determined according to the state of affairs that would exist if the relevant activity were carried out. However, the presented regulations do not apply to obtain a secure opinion by an entity, among others. Actions relating to the subject of the opinion do not constitute tax avoidance until the opinion is revoked or amended (The Act of August 29, 1997 – Tax Ordinance…, art. 119b § 1).

The assessment of the artificiality of action is made considering many factors including, among other things, the legitimacy of the participation of intermediary

entities and splitting the operation. Moreover, it also considers whether the economic risk so exceeds the anticipated non-tax benefits that a rational subject would withdraw from the considered mode of action in such a situation. The existence of mutually compensating or cancelling elements is also essential (The Act of August 29, 1997 – Tax Ordinance…, art. 119c).

In the literature, tax evasion is generally defined as an illegal action taken by a taxpayer to reduce his/her tax liability and a situation in which the taxpayer fails to pay the due tax liability or obtains undue tax benefits (Chylak, 2018, p. 23).

Similarly, Gomułowicz and Małecki (2008) define tax evasion as taking actions prohibited by tax law, which minimises tax burdens or eliminates them. The authors emphasise that these actions are illegal and contrary to the letter of the law.

Moreover, the tax law doctrine presents the view that tax evasion may be committed not only by conscious (intentional) behaviour but also by unconscious (unintentional) behaviour, resulting, for example, from lack of knowledge of the tax obligation arising in a specific situation (Sowiński, 2009, p. 15).

In general, the literature agrees that tax evasion is a harmful practice that should be combated. The harmfulness of the activities in question should be considered in at least three dimensions:

- the state budget, resulting in a reduction of tax revenue,
- the national economy, leading to unfair competition,
- social life, having a demoralising effect on other taxpayers (Tomaszewska & Zawadzka, 2017, pp. 41-42).

The provisions of Polish law also refer to the concept of tax evasion as unlawful acts. Inconsistently discharging fiscal obligations may result in the imposition of a fine and even be subject to imprisonment in particular situations. The Act of 10 September 1999, The Fiscal Penal Code, distinguishes the following types of offences: fiscal delict and fiscal crime. The first concept covers prohibited acts, the consequences of which are fines determined by amount. The condition is the value of the lost or exposed to loss public law receivables or the object of the committed act, which cannot exceed five times the minimum wage. Other actions specified in the Code may also constitute a delict. In turn, committing a fiscal crime is connected with imposing a fine expressed in daily rates and the penalty of restriction or deprivation of liberty (The Act of September 10, 1999 – Fiscal Penal Code…, art. 22, art. 47).

The conceptual grid for defining the methods related to optimisation and therefore reducing the tax burden is extensive. For example, in abusive practices, one may

encounter such terms as aggressive tax optimisation, aggressive tax planning, tax evasion and tax avoidance. However, regardless of the name of the abusive law practices, they should not be confused with tax optimisation, which, unlike the other mentioned activities, is in line with both the content and the purpose of legal regulations (Felis & Szlęzak-Matusewicz, 2018, p. 92).

The distinction of methods related to reducing fiscal burdens is presented in Table 2.1.

Table 2.1. Methods relating to the optimisation of the tax burden

Methods of operation		Compliance with the content of the regulations	Compliance with the purpose of the regulations
Legal methods *Tax optimisation*	*Tax saving* – involves doing or not doing certain things to reduce or not increase the tax burden	yes	yes
	Tax planning – involves using the maximum number of legal possibilities to reduce the amount of tax (e.g. using allowances and exemptions)	yes	yes
Methods covered by possible legal restrictions *Aggressive tax optimisation*	*Tax avoidance* – involves taking advantage of legal loopholes and interpretative uncertainties. The reduction of the tax burden is made artificially and within the limits of the law	yes	no
	Tax evasion – involves the use of illegal instruments, the performance of acts contrary to tax and criminal law (e.g. concealment of income)	no	no

Source: own study based on (Wyrzykowski, 2013, p. 261).

In considering the above-described methods of action aimed at minimising the tax burden, it is crucial to bear in mind that, although the literature indicates that taxpayers should, in principle, have an ethical attitude towards their tax obligations, this attitude varies both between the societies and the individuals belonging to the same circle, which is due in particular to economic and cultural factors. For this reason, the assessment of moral conduct in the discharge of fiscal obligations is challenging and complex, because there is often an ethical dualism involved in such situations – connected with the completely different treatment of people's attitudes in the private and public sphere. Crimes involving an individual's personal property are often judged more harshly than analogous practices involving state property. Of fundamental importance here is the attitude of citizens to public institutions. Failing to fulfil one's fiscal obligations in an

exploitative country that does not care about the social good will be treated differently from similar actions in a civil state, considered a common good. Thus, cheating the tax authorities is not always regarded as ethically reprehensible. Where taxes serve as an instrument of oppression, such behaviour may be identified with a particular type of entrepreneurship. Consequently, it is assumed in the literature that any method that has the effect of shifting the fiscal burden onto other individuals who pay their taxes correctly should be judged negatively. The motives of the tax evader are of no importance (Owsiak, 2008, pp. 214-217).

2.4. Conclusions

The reality surrounding economic entities is characterised by a high degree of changeability and complexity. This undoubtedly translates into the realisation of the fundamental objective of the company's operation, i.e. the maximisation of profit for its owners. Therefore, the entity must apply solutions that ensure its survival and prospects for further development; one of such solutions is to develop an appropriate strategy also in the area of tax management. The adoption of adequate solutions in this respect may reduce both the tax burden and the tax risk.

The literature review on the subject clearly shows that the subject of reducing the tax burden has been very popular for many years. The constant topicality of the discussed issue results from the changeability of the tax law regulations, which eliminates previously available solutions and creates new tools used to construct the fiscal strategy of commercial entities.

The conceptual grid used to define methods related to reducing tax burdens is very extensive. These actions may differ, among other things, in their relation to the legal regulations. Accordingly, within the scope of abusive practices, tax evasion and tax avoidance (falling within the so-called aggressive tax optimisation) are distinguished. However, the method, which in contrast to the other mentioned activities, is compliant with both the content and purpose of the legal regulations, is tax optimisation which includes such terms as tax planning and tax saving.

Consequently, the multi-faceted nature of the discussed subject matter creates possibilities for further consideration, among others, in the scope of assigning specific solutions applied by economic units to the general definitions discussed in this chapter.

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3

Accounting for corporate income tax and identifying manipulation in the Visegrad Group countries

*Hana Bohušova**

3.1. Introduction

Due to globalisation, the harmonisation of accounting rules and practices has become highly important. The harmonisation programme of the EU has greatly influenced the accounting rules throughout Europe. Despite this fact, the national approach to accounting and financial reporting are still significant. There are still substantial differences in accounting and financial reporting in individual countries, especially for small and medium companies. According to Mamić Sačer (2015), national regulations still determine a country's accounting system, and these systems remain non-comparable.

The chapter aims to identify possible manipulation of financial statements and tax avoidance methods. Tax avoidance has been widely discussed around the globe, particularly among multinational corporations (MNCs), mainlyhave better opportunities to engage in aggressive tax planning techniques. According to Luty (2020), it can be concluded that the existing studies mostly covered companies from highly developed countries, and European countries were not at the centre of interest in tax avoidance research. Based on (Thomsen & Watrin, 2018), it was concluded that companies from the United States do not avoid taxes to a greater extent than companies from the 12 largest European countries. The study by these authors was limited in selecting only the biggest European countries, while no smaller countries were included. Due to the fact that the majority of studies concern US -listed companies, the research carried out focused especially on the issue of manipulating financial statements and tax evasion, merely from one point of view, and the conclusion could not be comprehensive for all kinds of international companies.

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The research in this issue concerning non-listed companies reporting according to national Generally Accepted Accounting Principles (GAAP) around the world is limited (Kourdoumpalou, 2017 – Greece, Kleven, 2011 – Denmark, Calao, Jarne & Wroblewski, 2017 – the Visegrad 4 (V4) countries, Švabova, Durica, & Podhorska, 2018 – Slovakia, Pasekova, Kramna, Svitakova, & Dolejsova, 2019 – the Czech Republic). The chapter addressed the methods of detecting financial statements manipulation and fraud used in previous research, and the possibility of their application in the V4 non-financial businesses, especially small and medium companies reporting according to national GAAP.

The basic preconditions for fulfilling this goal are:

- a comprehensive analysis of the available accounting systems and financial reporting in the European Union (EU), the identification of the differences and the users of this information;
- an analysis of the relation between financial reporting and corporate income tax;
- an analysis of the accounting systems and income tax systems in the V4 countries.

3.2. The relation between financial reporting and corporate income tax

The issue of inconsistency in accounting practices in various parts of the world has attracted the interest of many researchers worldwide (Gujarathi, 2008; Lin & Wang, 2001; Nobes & Parker, 1995; Salter & Niswander, 1995). According to Nobes and Parker (1995), the nature of accounting regulation in a country is affected by its general system of laws. Based on this approach, the two main accounting models can also be identified. The first one is the Anglo-American (Anglo-Saxon) model, influenced by professional standard-setting bodies, which puts emphasis on capital markets and relies upon debt financing and equity provided by the public. The second one is the Continental European model, with less emphasis on presenting true and fair financial statements and more emphasis and reliance on the government.

Another difference between national accounting systems is the degree to which taxation regulations determine accounting measurements and the overall relation between accounting rules and taxation systems. There are two extreme types of the institutional relationship between the accounting system and tax rules – the independence of systems and the dependence of systems. Independence is when companies use different accounting rules and rules to determine the corporate

income tax base, whereas dependence is defined as a situation where the financial statements and determination of the corporate income tax are based on tax rules. Dependence and independence are the extreme variants of the relationship. Lamb et al. (Lamb, Nobes, & Roberts, 1998) provides five levels of classification for the relationship between accounting and taxation, characterised in terms of accounting rules, and taxation:

1: disconnection (tax and accounting rules are separate, independent and detailed);
2: identity (accounting is "leader", accounting affects taxation);
3: accounting leads (accounting rules or accounting options are adopted for financial reporting purposes and tax purposes, this is possible because of the lack of specific tax rules being sufficient);
4: tax leads (tax rules or options are adopted for tax purposes and financial reporting purposes, this is possible because of the lack of specific accounting rules being sufficient);
5: tax dominates (a tax rule or option is imposed both for the financial and tax reporting, conflicting with financial reporting rules).

3.3. Accounting systems in the Visegrad Group countries

The collapse of communism in Central and Eastern Europe led to the transformation of accounting systems in former communist countries, with their rigid uniform accounting systems under administrative command. According to (Martikainen & Tilli, 2007), the objective of accounting in former communist countries was to provide information for the purposes of the state, and not for the needs of markets; the concept of a true and fair view did not occur. Company accounting maintained a strict separation of capital investment funds and funds for operational activity, even to the extent of maintaining a strict separation on the balance sheets. The Central Statistical Offices and Ministries of Finance determined the form, content, and frequency of financial reports. The financial statements served the following purposes:

- macro-economic control and statistics for the Central Statistical Office;
- financial policies and control by the Ministry of Finance;
- control by the national banks; accounting was used for the (central) planning of tasks;
- fulfilment and administrative control of assets protection.

The informational function of accounting for economic activity was very limited both at state enterprise level and macroeconomic level; it was mainly used for coordination and control.

Economic reforms oriented towards decentralisation and the introduction of a market mechanism, with the development of economic mechanisms and the demand for fair and reliable information on the performance and financial situation of companies, created the necessity for the active role of accounting at the end of the last century. The new legal solutions made it possible in post--communist countries, where the transformation of financial accounting was based on the transition from funds accounting to capital accounting following the business entity and going-concern concepts. All the countries took their own approach to accounting transformation.

Due to that parallel development, the accounting and financial reporting systems used in the V4 countries are based on similar principles, with similar relations to the tax base. The approach to identifying creative accounting and accounting fraud could also be very close in all the V4 countries. The survey of accounting systems in these countries and the relation of the profit or loss reported according to the accounting system to a corporate tax base is the subject of Table 3.1.

Table 3.1. The V4 countries and their accounting regulations related to the income tax base

Country	Accounting system	Accounting act	Accounting standards	Setting body	Tax base
Czechia	Continental	1991/2004	CAS 2003	Ministry of Finance	Pre-tax accounting profit according to Czech accounting regulations, with adjustments for tax purposes Rate 19%
Hungary	Continental	2000	In Accounting act	The Hungarian Accounting Standards Board; Ministry for National Economy	Accounting pre-tax profit after adjustments deductions according to Act on Corporate Income Tax Rate 9%
Poland	Continental	2000	PAS	Accounting Standards Committee – As a part of Ministry of Finance	Accounting pre-tax profit after adjustments deductions Rate 19% Rate 9% for SMEs under 2 mil EUR gross sale revenue
Slovakia	Continental	2003	Decrees	Slovak Parliament and the Ministry of Finance	Accounting profit is adjusted for certain items prescribed by the tax law Rate 21%

Source: own work based on research of legislation of individual countries.

According to the results, it can be concluded that all of the V4 member states regulate accounting issues through an Accounting Act. When it comes to the national GAAP, the results show that Poland and the Czech Republic use national accounting standards, whilst the Slovak Republic and Hungary have established accounting and financial reporting rules through other regulations, namely the Decree or Accounting Act.

3.4. Methods of identifying the manipulation of financial statements in the Visegrad Group countries

Since the accounting and financial reporting systems in the V4 countries are based on similar principles and have similar relations to the tax base, the approach to identifying creative accounting and accounting fraud could also be very close in all those countries. According to Kramarova and Valaskova (2020) and Pasekova et al. (Pasekova, Kramna, Svitakova, & Dolejsova, 2019) the reasons behind fraudulent financial reporting may be different. The study of Dechow, Sloan, and Sweeney (1996), suggests that opportunistic earnings management is one of the incentives of company accounting policy choices and earnings management. Businesses manipulate earnings upwards in the years preceding filing for bankruptcy. Earnings are managed in anticipation of significant transactions or negotiations. Companies 'massage' their earnings upwards before share-for-share corporate acquisitions (e.g. Erickson & Wang, 1999; Philippon & Bergstresser 2006), before initial public offerings (Aharony, Lin, & Loeb, 1993; Friedlan, 1994) and before seasoned equity offerings (Cohen & Zarowin, 2010; Teoh, Welch, & Wong, 1998).

Yet, Peltier-Rivest and Swirsky (2000) find evidence that firms manage earnings downwards in anticipation of labour union negotiations. Cook et al. (Cook, Huston, & Omer, 2008) consider tax expense as an incentive for companies to manipulate earnings, since income tax is seen as an unproductive outflow of capital sources. This reason can considered as prevailing, especially in the financial reporting systems connected with income taxation. This fact was also indicated in other studies. Swiderski et al. (Swiderski, Goncharov, & Bissessur, 2010) confirmed that private companies in Poland, Czechia, and Hungary aggressively manage earnings downward to avoid higher tax expenses. Callao et al. (Callao, Jarne, & Wróblewski, 2017) came to the same conclusion in these countries, including Slovakia. Wang and Chen (2013) also confirmed that tax avoidance is one of the incentives for earnings manipulation.

In individual V4 countries, studies in the field of earnings manipulation are still relatively rare, and since 1995 only a few studies dealing with bankruptcy

prediction have been published (Chrastinova & Trgala, 1998; Gurčík, 2002). These models are considered a tool for financial statement fraud detection, and they were focused on agricultural enterprises applying the MDA method. Hurtosova (2009), Gulka (2016), and Delina and Packova (2013) applied the LOGIT model. Harumova and Janisova (2014) used the LOGIT model for Slovak small and medium-sized enterprises, whereas Valaškova et al. (Valaškova, Kliestik, & Mišankova, 2018) employed regression analysis for bankruptcy prediction. Valaškova and Fedorko (2020) aimed to detect the manipulation of earnings in the transportation and storage industry in selected Visegrad countries, using the Beneish model. They identified a difference in the number of manipulating enterprises in Slovakia and the Czech Republic. Švabova, Kramarova, Chutka, and Strakova (2020) utilised Beneish´s M-score, and applied it to the conditions of the Slovak companies. To improve the model's detection ability, they also considered the company´s potential tendency to manipulate earnings. The authors used the same variables as Beneish, since the structure and the content of the financial statements following the GAAP differ from the structure and the content of the financial reports under the Slovak accounting standards. The model comprises 16 variables in total; fraudulent financial reporting is closely related to tax avoidance in Slovakia. The discriminant function of the detection model is calculated as follows, with the threshold value equal to 0.

$$\begin{aligned}\text{M scoresvk} = {} & 0.29AQI_b + 0.060AQI_{tf} - 0.437DEPI_b + 0.180DEPI_{tf} + 0.100DSRI_b + \\ & + 0.667DSRI_{tf} + 0.943\ GMI_b + 1.511GMI_{tf} - 1.561LVGI_b - 1.523LVGI_{tf} + 0.427SGAI_b \\ & + 0.681SGAI_{tf} - 0.051SGI_b + 1.920\ SGI_{tf} + 0.497TATA_b + 1.031TATA_{tf} - 3.699,\end{aligned}$$

where: *AQI* – Asset Quality Index, *DEPI* – Depreciation Index, *DSRI* – Days Sales in Receivables Index, *GMI* – Gross Margin Index, *SGI* – Sales Growth Index, *SGAI* – Sales, General, and Administrative Expenses Index, *LVGI* – Leverage Index, *TATA* – Total Accruals to Total Assets.

The authors designated 16 variables, since each indicator is calculated as two indexes (*ex-post*) withvalues in year *t* (the year when a company was suspected of fraud) and *t-i* (designation of the index is *tf*), and $t - 1$ and $t - 2$ (designation of the index is *b*). In the case of non-fraud companies, the designation of the variables is the same. If the M-scoresvk reaches positive values, the analysed company *probably carried out opportunistic earnings management to avoid its tax liabilities in the given year.* The M-scoresvk achieves better classification results in comparison to the Beneish model — overall by 9.1%,

In Hungary, the research of financial statement manipulation and earning management carried out by Beretka (2016) is aimed only at financial institutions. The first models for bankruptcy prediction as tools for earning management

detection for Hungarian companies were developed by Hajdu and Virag (2001), applying both LDA and LOGIT. In turn, Virag and Kristof (2014) developed a model using artificial neural networks and models using the techniques of support vector machines. Kristof researched the bankruptcy prediction concerning Hungarian small and medium-sized enterprises, and Colossal (2014) used linear discriminant analysis, logit analysis, classification trees and artificial neural networks, while Bauer and Edrész (2016) developed a probit model for bankruptcy prediction for Hungarian enterprises.

In Poland, more than sixty models have been developed, mainly focused on manufacturing enterprises using multiple discriminant analysis (Gajdka & Stos, 1996; Mączyńska, 1994; Pogodzinska & Sojak, 1995). Brzeszczyński et al. (Brzeszczyński, Gajda, & Schabek, 2012) and Welc (2011) investigated earnings manipulation by Polish companies, and concluded that Polish stock market companies perform manipulation with earnings. As investigated by Callao et al. (2017), Poland is a pioneer in developing models of detecting earnings manipulation (with more than ten models) when considering the V4 countries. Holda (2020) showed that if the Beneish model is an effective tool for Polish regulatory bodies, chartered accountants or the tax authorities can identify entities suspected of manipulation.

The last V4 country is the Czech Republic. Neumaiers made the first attempt to develop a national bankruptcy prediction model in 1995 (Neumaier & Neumaierova, 2005).

Using the same method, the Karas and Režňakova model (2013), and a model of Slavíček (2015) were developed. Among the Czech prediction models based on logit regression, one can mention that in "Microeconomic scoring model of the bankruptcy of Czech companies" by Valecký and Slivkova (2012), the Němec and Pavlik model (2016), and the model of Jakubík and Teplý (2011). Drabkova (2013) used a model based on the assumption that there is a close relationship between the accounting economic result and cash flow in the period of five years for detecting possible financial manipulation.

The earnings management in financial statements and fraud detection in the whole of the V4 group companies were addressed by many researchers (see: Durana, Kral, Stehel, Lazaroiu, & Sroka, 2019; Durica, Podhorska, & Durana, 2019; Hudakova, Masar, Luskova, & Patak, 2018; Kliestik, Belas, Valaškova, Nica, & Durana, 2020; Kovacova, Kliestik, Valaškova, Durana, & Juhaszova, 2019; Podhorska, Gajanova, Kliestikova, & Popescu, 2019; Podhorska, Kovacova, & Valaškova, 2018; Vrbka, Nica, & Podhorska, 2019). The study by Siekelova, Valaškova and Machova (2020) was carried out in the economic conditions of the

Visegrad 4 countries. The modified Jones model was used to verify the existence of earnings management (EM) practices in these countries; the results show that there are earnings management practices in the V4 countries. The modified Jones model is a worldwide model used in earnings management measurements, it can be seen that its highest explanatory power can be found in Poland, while the lowest was observed in Hungary. Based on the Jones modified model results, the existence of EM initiatives in the V4 countries was proved. The most recent study of Kliestik et. al (Kliestik, Nica, Suler, & Valaskova, 2020) revealed the motives of corporate managers to manipulate earnings to meet personal objectives, define corporate strategies and tasks, and fulfil the innovation strategy of enterprises. An assessment of different earnings management models proved that the Kothari model (2016) is the most appropriate to estimate the non-discretionary accruals in Slovak and Czech enterprises. The level of the manipulation indicates that the downward manipulation is significantly higher than the upward manipulation.

Calao et al. (2017) focused their study on the growing market of the developing European countries Poland, Hungary, Slovakia and the Czech Republic. They evaluated the ability of the existing models on earnings management for these countries, and confirmed that Jones (1991) offers reliable results for detecting earnings management in the V4 group countries, while the modified Jones model (Dechow et al., 1995) is not as reliable, and it was necessary to modify it for these countries.

Table 3.2. Possible use of FSF detection methods in the V4 group

Method	Possible use in V4 countries
Bankruptcy models	Special methods for individual accounting systems: Neumaiers (Neumaier & Neumaierova, 2005), Chrastinova (1998), Gurčík (2002), Karas and Režňakova (2013), Slavíček (2015)
Regression analysis	Hurtosova (2009), Gulka (2016), Delina and Packova (2013), Harumova and Janisova (2014)
Discriminant analysis	Mączyńska (1994), Pogodzinska and Sojak (1995); Gajdka and Stos (1996)
Jones model	Siekelova, Valaskova and Machova (2020), Calao, Jarne, and Wróblewski (2017)
Beneish model	Modification for individual accounting system Valaskova and Fedorko (2020), Švabova and Kramarova (2020)
Dechow model	Modification for individual accounting system

Source: own work based on literature survey.

All the previous research on smoothing and inflating earnings in V4 countries shows interesting results. The upwards manipulation is typical for all countries under investigation, however the downward manipulation is significantly higher

than the upward one. The following table presents the survey of possible utilisation of currents methods for the detection of financial statements fraud (FSF) in the V4 group.

3.5. Conclusions

Financial statement manipulation detection methods are used worldwide. The majority of them are designed especially for companies, auditors, and users of financial statements information published by listed companies. As follows from the above-mentioned, most of these methods were developed in the United States, and are suitable in particular for the Anglo-Saxon accounting system and aim to detect reported profit inflation. However, all the V4 countries use continental accounting systems, and the manipulation of financial statements is considered, especially at profit smoothing for corporate income tax purposes. Despite the differences between the objectives of financial statements manipulation, the areas of possible manipulation are similar. These areas were identified, and the standard variables for detection were defined. The scope of further research is to modify the methods to be used directly in the V4 countries.

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4

A review of the adopted business model of tax solutions influencing the private equity and venture capital activity in selected countries

*Ilona Fałat-Kilijańska**

4.1. Introduction

Why do some new ideas evolve into global corporations so fast? And why some never 'grow up'? The answer is not easy to find, but few factors are clear – the most important being, of course, the capital. However, it is not only about money. In searching for the answer, the author identified a special kind of financial investors – private equity and venture capital funds (PE/VC). Moreover, the most valuable global companies, such as Apple, eBay, Google, Intel, Microsoft, Skype and Tesla Motors are venture-backed!

This chapter is an overview of different countries' legal and tax solutions favouring or restricting private equity activity. It also describes the legal forms which private equity funds can adopt. The author carried out the tax law review in selected countries (the USA, a few EU countries, focusing on members of the Visegrad group. The chapter also provides general information about private equity and venture capital companies – what they are, and how they work.

The study was based primarily on international literature and the data used came from annual reports and statistical materials of numerous national private equity and venture capital associations, international organisations publications, reports and studies prepared by consulting companies, online resources and legal acts. All the data refer to the period 2020-2022.

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4.2. The definition and role of private equity funds

The general definition describes private equity as a form of equity investment into private companies not listed on the stock exchange. It is a medium to long-term investment, characterised by active ownership. Private equity funds invest capital in private non-publicly traded companies. After that, they become stockholders, hence they participate in all kinds of the risks faced by companies, but private equity and venture capital terms are defined differently in literature. The feature that helps to distinguish between them is the country of origin: continental Europe, Great Britain and the United States represent different approaches to private equity and venture capital investments. In continental Europe, private equity funds are invested in mature companies pursuing new development opportunities and showing high growth potential**.** Venture capital is a specific type of private equity investments. This term is used to emphasise investments in early-stage companies (seed or start-up), ones employed to launch or expand such companies. The term venture capital is used to refer to less capital intensive projects. Venture capital investments are intended for companies from the SME sector (*Guide on private...*, 2007). In all European publications, the two terms are treated as synonymous and used interchangeably.

In Great Britain, venture capital and private equity markets are perceived as two separate segments. In "A Guide to Venture Capital" – the British Venture Capital Association (BVCA) defines venture capital as long-term capital invested in the shares of unlisted companies, which will allow those companies to finance their development and achieve market success (*A guide to venture capital...*, 2010). Market participants reserve the term 'private equity' only for management buy-outs (MBO, MBI) and leveraged transactions.[1] Despite the BVCA's definitional distinction between the two terms, most of the data on the private equity and venture capital markets published in Great Britain present them as one single market, which hinders the analysis and comparison of data, e.g. with that of the US (*Finance for small firms*, 2001).

In the US market, there is a clear line drawn between venture capital and private equity. Venture capital is used to refer to investments in projects that are in their early stages (early stage investments), i.e. in the so-called seed and start-up stages. Other types of investment – from expansion to leveraged buy-outs and management buy-outs – form the private equity market there.

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[1] To distinguish between 'private equity' and 'venture capital', the British Venture Capital Association (BVCA) expanded its mission to represent the British venture capital and private equity sector.

According to the Polish Private Equity Association (PSIK), private equity consists in investment in the private equity market (i.e. the purchase of shares in unlisted companies), aimed at achieving profit through capital gain. They are usually of a medium and long-term nature, and the investor is engaged in the management of the company being invested in. Private equity investments are obtained for the purposes of new product or technology development, increasing working capital, and improving the balance or other major expenditures. Private equity is also helpful in resolving issues related to inheritance and other owner changes as well as in management buy-out. Venture capital, on the other hand, is a type of private equity that refers to investments in companies in their early life-cycle stages, those employed in launching or expanding a company (Polish Private Equity Association, 2002). This definition includes some features of both the American and the European approaches. For the purposes of this study, the author uses the term private equity in its European meaning.

Another definition of pe/vc investment (heard from a fund manager) is: "a marriage with a divorce planned in advance", and in author's opinion is the best description of this kind of investment. It shows both the investor's engagement and an exit. A pe/vc fund wants to achieve earnings, so it has to sell portfolio firms to another company (M&A, buyouts) or to another fund (secondary purchase), or it can exit through IPO.

Private equity capital is used for:

- developing or introducing new technology,
- product development,
- enlarging the product range and improving production quality,
- raising the amounts of investments in the company's brand,
- construction (or expansion) of distribution channels,
- increasing the expenditure aimed at improving the company image,
- employing highly-skilled workers,
- financing the changes in the organisational structure.

This type of investment plays a significant role in the global economy – it has been shown to generate many positive macroeconomic effects, such as job creation and productivity gains. The financial crisis resulted in restrictions in the availability of bank finance, a historically significant source of finance for small-and-medium sized enterprises. In recent years, private equity (along with its better-publicised cousin, hedge funds) have emerged as one of the fastest and most efficient ways to move and foster capital. It allows investors to influence and/or control a company without worrying about such 'pesky', everyday concerns as stock price movements and indignant proxy-holding shareholders.

Private equity and venture capital have both become far more important around the world in recent years. For example, early-stage funding grew the most in 2021, up 104 percent year over year and 11 percent quarter over quarter, with over 1,900 new companies emerging at this stage globally. Despite funding lags for the most recent quarter relative to past quarters, early-stage counts are up year over year by 19 percent. The annual level of investment in early stages grew 73-fold!!! (from 1.6 billion euro in 1998 to over 117 billion euro in Q3 2021). While investors committed more than €100 billion of capital in private equity in 2020, private equity backed companies represent more than 10 million employees (Terae, 2021).

How crucial is the role played by private equity managers in the financing of the European economy, acting as a bridge between investors and businesses, is shown in the new initiatives of The European Commission, published on 25 November 2021 as series of proposals designed to implement the Capital Markets Union (CMU) Action Plan. Among these are the fund management reviews of the Alternative Investment Fund Managers Directive (AIFMD) and the European Long-Term Investment Fund (ELTIF) Regulation, as well as of the European Single Access Point (ESAP) Omnibus.[2]

Private equity funds' activity in developed countries shows them to be an important part of economic development:

- financing ventures considered to be too risky for others,
- contributing to the increase in the number of enterprises,
- positively affecting their competitiveness,
- creating many jobs,
- being an important participant in the capital market.

The need for the capital necessary to support innovation on a larger scale emerged in the 19th century, along with the industrial revolution in Europe's fastest developing countries such as Great Britain and Germany. Much later, in the 1990s, after the political and economic transformation, private equity funds appeared in the Polish market and other CEE countries.

Private equity funds allocate a part of their capital to the high-tech sector and thus contribute to the spread of state-of-the-art technologies. The companies chosen for investment projects are active in internet technology, IT, telecommunications, biotechnology and, most recently, nanotechnology.

The biggest PE/VC market is in the USA, followed by Great Britain.

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[2] Based on the information from Invest Europe (Invest Europe, n.d.).

Intel, IBM, Microsoft, Apple, Google, Skype, Facebook, Tesla Motors, and eBay are merely a few examples of private equity backed firms. Hence, such names serve to highlight the role of private equity investment.

Just like with other sectors of the economy, the private equity market is dependent on the macro and microeconomic environment. A large number of factors impacting on private equity investments could be listed here, the most important of which are: the level of entrepreneurial culture in a given country, availability of long-term funding sources, quality of the education system, quality of macroeconomic policies (in particular the role of securities markets in financing the economy), as well as legal and fiscal regulations (see Figure 4.1).

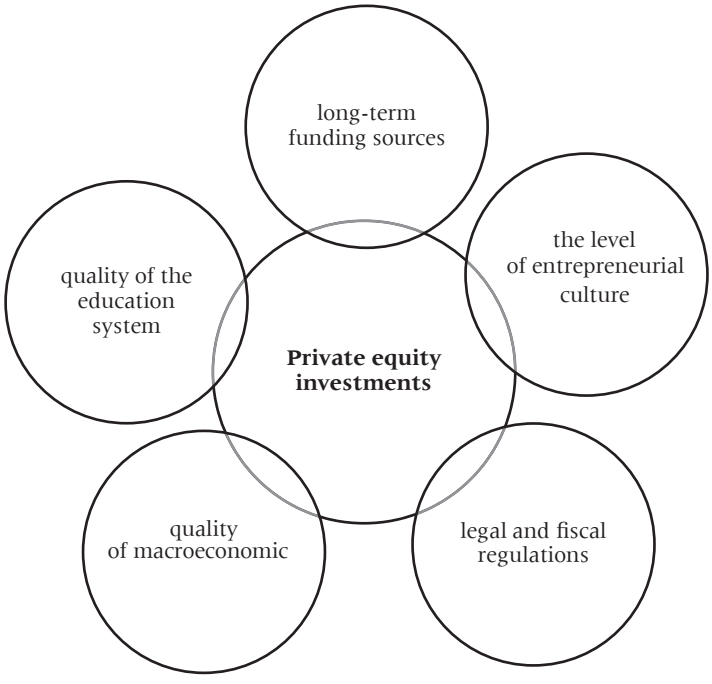

Fig. 4.1. The most important factors affecting private equity

Source: own study.

The level of entrepreneurship is linked to the innovation and competitiveness of a given economy, and it thus determines the number and quality of potential investment projects for private equity funds. The availability of capital translates easily into the sources and volume of supply of the agents forming the private equity market, whereas the legal regulations are related to both the level of

entrepreneurship (e.g. the regulations on the formation of business entities and their operations) and availability of capital (e.g. tax solutions, functioning of financial markets, the state's share in the private equity market). For the purposes of this work, the discussion included only the legal and fiscal aspects affecting both the supply side of private equity capital (the relations between fund investors and fund managers).

The legal and fiscal environment of private equity funds consists of the following areas:

- the organisational structure of the fund,
- possible legal forms of pe/vc business,
- legal regulations concerning the mergers and acquisitions market,
- the importance of pension funds as potential investors of private equity funds,
- Corporate Income Tax (CIT),
- solutions regarding tax on capital gains,
- business environment,
- tax solutions supporting research and development activities.

Then, only four of the eight areas (the organisational structure of the fund, legal forms of pe/vc business, CIT and tax on capital gains) qualified to have been presented.

The organisational structure of the fund

Before the problem of pe/vc funds taxation is discussed, one should show the structure of the fund and capital flows scheme between investors (Limited Partner, LP), and the fund and management company (General Partner, GP).

Pe/vc funds often are closed-end funds that are considered an alternative investment class. Since they are private, their capital is not listed on a public exchange. These funds allow high-net-worth individuals and a variety of institutions to directly invest in and acquire equity ownership in companies. The funds may consider purchasing stakes in private firms or public companies with the intention of delisting the latter from public stock exchanges to take them private. After a certain period of time, the private equity fund generally divests its holdings through a number of options, including initial public offerings (IPOs) or sales to other private equity firms. Although minimum investments vary for each fund, the structure of private equity funds historically follows a similar framework that includes classes of fund partners, management fees, investment horizons, and other key factors laid out in a limited partnership agreement (LPA).

For the most part, pe/vc funds have been regulated much less than other assets in the market, because high-net worth investors are considered to be better equipped to sustain losses than average investors. However, following the financial crisis, the government has scrutinised private equity far more than ever before.

Pe/vc funds can engage in leveraged buyouts (LBOs), mezzanine debt, private placement loans, distressed debt or serve in the portfolio of a fund of funds. While many different opportunities exist for investors, these funds are most commonly designed as limited partnerships.

To better understand the structure of a private equity fund, one should acknowledge two classifications of fund participation. Firstly, the private equity fund's partners are known as General Partners (GPs). Under the structure of each fund, GPs are given the right to manage the private equity fund and to pick which investments they will include in their portfolios. GPs are also responsible for attaining capital commitments from investors known as limited partners (LPs). This class of investors typically includes institutions pension funds, university endowments, insurance companies and high-net-worth individuals. LPs have no influence over investment decisions. At the time that capital is raised, the exact investments included in the fund are unknown. However, LPs can decide to provide no additional investment to the fund if they become dissatisfied with the fund or the portfolio manager (see Figure 4.2).

When a fund raises money, institutional and individual investors agree to specific investment terms presented in an LPA. What separates each class of partners in this agreement is the risk to each of them. LPs are liable for up to the full amount of money they invest in the fund. However, GPs are fully liable to the market, meaning if the fund loses everything and its account turns negative, GPs are responsible for any debts or obligations the fund owes.

Pe/vc funds traditionally have a finite length of 10 years. They typically exit each deal within a finite time period due to the incentive structure and a GP's possible desire to raise a new fund (this is the moment for the previously mentioned "divorce"). However, that time frame can be affected by negative market conditions, such as periods when various exit options, such as IPOs, may not attract the desired capital to sell a company. For example, one of the most lucrative PE exits in 2020 came from Providence Equity's sale of their stake in Zenimax Media, the parent company of Bethesda Softworks, a game developer. The company sold its stake, which it acquired in 2007, to Microsoft for 7.5 billion USD, not bad considering their initial investment was just 300 million USD (*Microsoft to acquire…*, 2020).

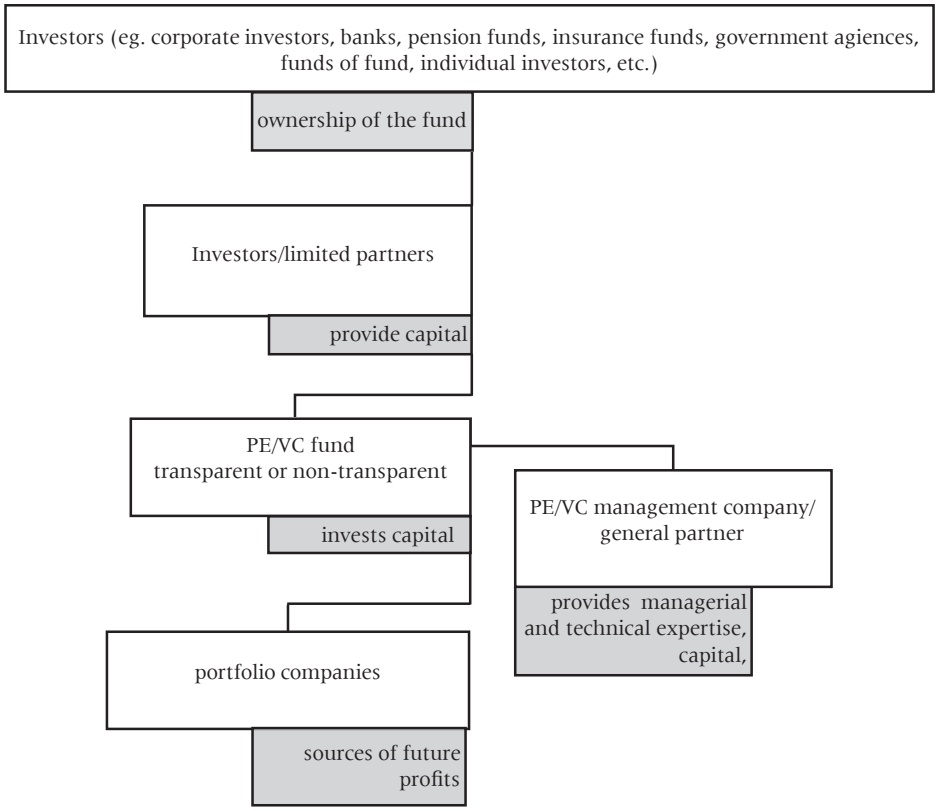

Fig. 4.2. The structure of typical pe/vc fund

Source: own study based on (*Report of expert group on removing tax*…, 2012).

In addition to the decision rights, the GPs receive a management fee and a performance fee. The management fee is about 2% of the capital committed to invest in the fund; this fee covers the fund's operational and administrative fees such as salaries and deal fees basically anything needed to run the fund. As with any fund, the management fee is charged even if it does not generate a positive return. For example, if a private equity firm raised a 100 million USD fund, it would collect 2 million USD each year to pay expenses. Over the duration of the 10-year fund cycle, the PE firm collects 20 million USD in fees, meaning 80 USD million is actually invested during that decade. The second is the performance fee, which is a percentage of the profits generated by the fund that are passed on to the general partner (GP). Such fees, which can be as high as 20%, are normally contingent on the fund providing a positive return. The rationale behind performance fees is that they help bring the interests of both investors and the

fund manager in line. If the fund manager is able to do that successfully, they are able to justify their performance fee.

4.3. General rules for private equity and venture capital fund taxation

In a situation where there are three different countries/states involved in a pe/vc investment, i.e. the country of establishment of the pe/vc fund vehicle, the country of residence of investors in that fund, and the country of the portfolio companies in which that fund invests, then double taxation issue may arise. This is because different countries may classify the pe/vc fund in different ways (as transparent or non-transparent, resident or non-resident, subject to tax or not subject to tax and trading or non-trading) and the application of bilateral double taxation conventions by the tax authorities in the respective countries may not prevent this.

Take the example where one country treats the fund as a non-transparent entity while the other two treat it as transparent. In the case of the first country, taxable income and gains will be attributed to the fund, and the fund will be deemed to be entitled to the benefit of the relevant Double Tax Convention (DTC) (Lang, 2021). However, the other states attribute taxable income to the investors rather than to the fund, and thus the fund is deemed not to be entitled to the DTC benefits (see Figure 4.3).

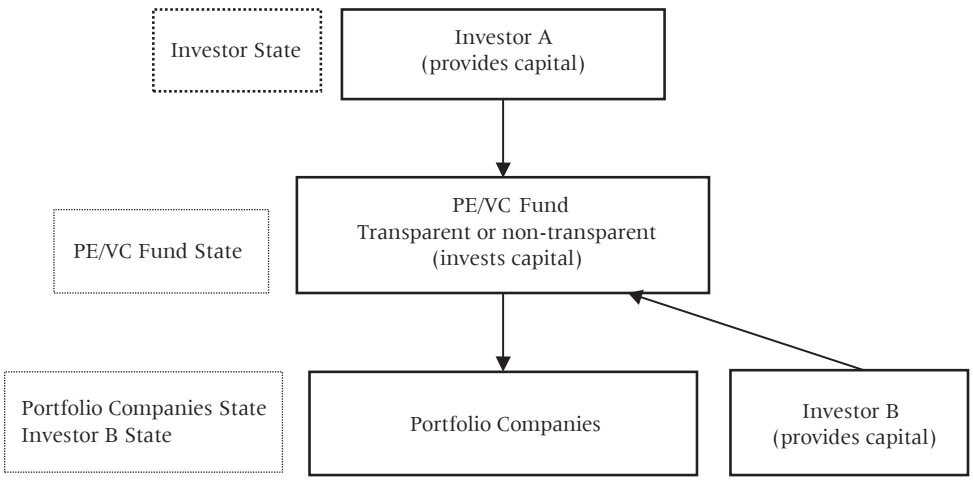

Fig. 4.3. Classification of private equity and venture capital funds as transparent or non-transparent

Source: own study based on information from (*Report of expert group on removing tax*… 2012).

The same case could be where incomes and gains are not assigned to either party. There may not always be bilateral and domestic switch-over clauses, or anti-tax--avoidance rules in place to avoid this. In accordance with the DTC the following are possible:

- the domestic tax laws of all three countries involved in the above example provide that capital gains derived from the sale of shares in corporate entities are subject to tax;
- the DTC between the country of residence of the portfolio company and the country of residence of Investor A prohibits the imposition of tax on capital gains by the country of residence of the portfolio company, and allows the taxation of capital gains in the country of residence of the investors. The DTC between the country of residence of the portfolio company and the country of residence of the pe/vc fund has an identical provision, prohibiting taxation in the country of residence of the portfolio company but allowing taxation in the country of residence of the pe/vc fund;
- the country of residence of Investor A treats the VC fund as fully transparent and thus not entitled to the benefit of the DTC between the Investor A country and the pe/vc fund country;
- the country of residence of the pe/vc fund treats the fund as non-transparent and therefore subject to the provisions of all DTCs concluded by that country.

In the following situations, capital gains tax may be applied:

- to the country of residence of the portfolio company and the country of the pe/vc fund, because the fund is considered a resident of the country in which it is located, and subject to the provisions of that DTC;
- to Investor A in his/her country of residence according to the DTC between the country of residence of the portfolio company and the country of residence of Investor A (because the tax authorities of his/her state of residence monitor the fund).

In addition, when the fund distributes the income from the sale of the portfolio company, the country in which the fund was established would recognise this distribution as a dividend from which it could withhold tax on a gross basis. Since the fund can be seen as transparent in Investor A's country of residence, it might not recognise the distribution as a taxable event, and might therefore not grant any tax credit or tax exemption in respect of the tax withheld on the dividend by the country of establishment of the fund. This may result in double taxation, which may also occur in the above example with regard to Investor B who is resident in the same country as the portfolio company:

- If that country takes the fund as fully transparent and, thus, not entitled to benefit from the DTC with the country of the fund, the tax authorities of that state will impose tax on the capital gain (insofar as attributable to Investor B) under its domestic law as if this was a purely domestic situation, i.e. without granting any DTC relief.
- If the fund's country of establishment takes the fund as non-transparent and hence subject to the DTC, its tax authorities will impose tax on the capital gain at the fund level, which it regards as being in line with the DTC with the portfolio company's country of residence. The country of establishment of the fund may also withhold tax on distributions to Investor B, for which Investor B's country of residence may not grant a tax credit since it does not treat the distribution as a tax event because it considers the VC fund as fully transparent.

Together with the examples of double taxation presented above, there may also be cases of double non-taxation which are problematic for the tax authorities. If the country of establishment of the fund treats the fund as transparent while the country of residence of the investor regards the fund as non-transparent, the latter could assume that the country of the establishment of the fund is taxing the fund, and consequently exempt the investor from tax on capital gains or income distributed. The capital gains or income might not, as a result, be taxed either in the country of establishment of the fund or in the country of residence of the investor.

4.4. Legal forms of private equity and venture capital business and tax regimes in selected countries

Private equity funds can carry out their activities in a number of legal forms. The decisive factor in choosing a particular legal form are tax solutions and disclosure obligations relating to the procedures for establishing a fund and its subsequent functioning. The diversity in legal forms used by funds to conduct their activities follows also from the fact that most funds invest capital coming from a small group of investors (one or a few). Therefore, they rarely use legal forms that allow for raising capital through the public issue of shares or investment certificates. For the fund's investors, of key importance may also be the considerations connected with having confidence in one particular legal form or with the constraints imposed by internal procedures. Any investment in a private equity fund is closely bound up with the need to have strong confidence in those managing the resources of the fund. At the same time, the possibilities for monitoring the investments carried out by those managers and controlling the

fund may be greatly limited. Only those entities that hold shares in the managing company have direct impact on the decisions made by fund managers. By their very nature, private equity investments are long-term undertakings, and they do not (usually) give the possibility to withdraw capital before the end of the particular period specified in the agreement. Another important tax aspect is the problem of the double taxation of foreign entities being fund investors. The choice of legal form may also be influenced by regulations regarding tax on goods and services, and on fund management fees – in this case, VAT may become too high a cost for the fund.[3]

The pe/vc market distinguishes between two basic legal structures useful for the activity of private equity funds (Blake, 1999):

- fiscally transparent ones, in which the fund's profits are taxed at the level of its participants. A classic example of this – most frequent – solution are American and British limited partnerships;
- various legal structures exempt from income tax and formed on the basis of special laws, and companies registered in tax havens.

The above distinction was further used to present organisational and legal solutions functioning in selected countries.

In the United States private equity funds operate in three legal forms (Gladstone & Gladstone, 2001):

- limited partnerships,
- publicly traded funds, open-end funds,
- corporate venture capital or captive funds.

Limited partnership is the most common legal form used to operate a private equity fund. In the structure of a limited partnership there are two types of partners: Limited and General. The fund is formed on the basis of an agreement between the investors – Limited Partners (LPs), who provide capital, and General Partners (GPs) – fund managers. The liability of LPs is limited to the amount of the capital contribution they have committed, whereas fund managers, i.e. GPs, in order to limit their liability, take the form of a capital company. For their management services a management fee is charged, usually amounting to 1%-3% of the committed capital annually. The managing company is often required to make a small financial contribution to the fund of at least 1% of the fund's capital. This is important especially in terms of motivation – the managing company does

[3] This is the case if the fund itself does not operate, and the entire investment activity is carried out by a managing company. In such a case the fund is just one of the assets.

not participate only in the profits earned through the fund's investments, but also in its losses.[4] The managing company's share in the carried interest generated by the fund amounts to 20%-25%. Funds are established for a limited time, usually for up to ten years. Typically, they are of a closed-end type and investors cannot withdraw the committed capital, neither can new partners be introduced. The second type of legal forms chosen by private equity funds in the United States are publicly traded investment funds (open-end funds, publicly traded funds).[5] They are created for a non-predetermined period, and the time of their liquidation is decided on by their participants. Public funds are not among those often chosen for carrying out private equity activity. The biggest drawback of these funds is their obligation to disclose information, which public companies are subject to, and which greatly hampers private equity investments. Most commonly, funds organised as public entities provide *mezzanine* financing.[6] Private equity funds can also function as the so-called "captive funds" or "corporate venture capital funds". These are funds established by large financial institutions (e.g. banks, insurance companies, pension funds) and industrial corporations (e.g. Intel). Large companies and corporations involved in the formation of a private equity fund are willing to introduce it into innovative companies that are at a very early stage of development. In this case, the motive for action is the desire to have an 'insight' into technological innovations (the so-called "window on technology") and the diversification of financial income. Corporate venture capital funds are not set up for a predetermined period, which constitutes the primary difference between them and the funds established as limited partnerships. These funds are wholly dependent on the entities that established them. The founder decides, among other things, on the liquidation of the fund, the amounts provided to be at the fund's disposal and the date of their transfer. Additionally, the choice of management style and organisational structure depends on the decisions made by the entity that established the fund, which is why such funds differ substantially from limited partnerships. Two solutions are possible here: the fund is managed by an external company, or the role of managing company falls to a unit within the structure of the entity that established the fund (e.g. the Department of Capital Investments). In such funds there is no management fee, and they are not burdened with paying out profit shares to a managing company.

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4 A common solution adopted among American private equity funds is to withhold the management company's share in the profit made by the fund until the return on the employed capital is paid back to the investors.

5 In their design they are similar to Polish closed-end funds issuing shares listed in public markets.

6 'Mezzanine' means to use debt instruments with the option to convert them into shares as well as to provide bridge financing to enterprises that are preparing themselves to go public.

The most common legal form of private equity funds in the United States – limited partnership – is governed by the law of commercial companies separately in each state. However, there is certain uniformity, as almost all the states have adopted the provisions of the Uniform Limited Partnership Act (ULPA), which regulates the operations of limited partnerships.[7] More detailed regulations on limited partnerships have been adopted by the American Law Institute in the Revised Uniform Limited Partnership Act.[8] In its structure, the American limited partnership is similar to the European and British variety of that company type. As opposed to the British solution, however, the US law does not limit the number of limited partners. ULPA offers also some more liberal solutions, e.g. a limited partner may withdraw from an American company under a six-month notice to the company and has the possibility to renounce his/her share in the company's profit without the consent of other partners (unless it is contrary to the provisions of the articles of association). The matter of limited partners' liability, however, was resolved in the American act in a somewhat different manner. Here, a limited partner is liable for the partnership's liabilities to the same extent as a general partner, provided that his/her active participation in the management of the company can be proven.

US tax reform legislation enacted on 22 December 2017 moved the United States from a 'worldwide' system of taxation towards a 'territorial' system of taxation. Among other things this reform permanently reduced the 35% CIT rate on resident corporations to a flat 21% rate for tax years beginning after 31 December 2017. Certain US-source income (e.g. interest, dividends, and royalties) not effectively connected with a non-US corporation's business continues to be taxed on a gross basis at 30%. Under US domestic tax laws, a foreign person generally is subject to 30% US tax on the gross amount of certain US-source income. All withholding agents making US-source fixed, determinable, annual, or periodical payments to foreign persons generally must report and withhold 30% of the gross US-source payments, such as dividends, interest, royalties, etc. Withholding agents are permitted to reduce the rate of withholding if the beneficial owner properly certifies their eligibility for a lower rate either based on the operation of the US tax code or on a tax treaty. The United States has entered into various bilateral income tax treaties in order to avoid double taxation and to prevent tax evasion.

Most US funds are registered in one particular state – Delaware – where there are special tax conditions and simplified registration formalities, another advantage being no obligation to disclose data regarding the partners.

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7 Louisiana is the only state not to have adopted the ULPA provisions.

8 The Revised Uniform Limited Partnership Act was only adopted by 25 states.

In many European countries there are special legal forms created for private equity business. According to the list of the most favourable legal and fiscal regulations for private equity investments in Europe, on the top of most private equity investment-friendly European countries was Ireland, which has introduced favourable tax solutions for private equity investments (see Table 4.1).

Table 4.1. The 'top ten' of European countries with the most favourable legal and fiscal regulations for private equity investments (1 – most favourable, 3 – least favourable)

Position in the ranking	Country	Number of points
1	Ireland	1.27
2	France	1.36
3	Great Britain	1.46
4	Belgium	1.51
5	Spain	1.52
6	Greece	1.55
7	the Netherlands	1.60
8	Luxembourg	1.62
9	Portugal	1.71
10	Italy	1.72
21	Poland	2.16
The average for the countries surveyed		1.84

Source: own study based on (*Benchmarking European tax…*, 2006, p. 9).

The dominant legal form among Irish funds is Limited Partnership, which ensures fiscal transparency for domestic entities that are investors of private equity funds, and in the case of foreign ones it fully complies with the principle of avoiding double taxation. It allows to avoid value added tax on management fees, and also guarantees full freedom in investment activities. The only restriction on establishing a private equity fund as a limited partnership is that in Irish law the maximum number of limited partners is strictly defined – up to 20 entities – for which reason, in some cases, there is a need to create multiple funds, which in turn increases their operating costs. However, there are no investment restrictions regarding pension funds. Ireland's rate of corporate income tax is the second lowest in the European Union – 12.5% (*Ireland's corporate tax rate*, 2022). Another tax incentive for private equity investments are the Special Private Equity-Related Tax Schemes, which enable funds to deduct the share purchase cost from its income before tax. Compared to other EU member states, Ireland has the shortest time of business registration. In addition, registration fees and capital requirements for businesses founded there are the lowest. Irish law offers many tax incentives

and breaks connected with expenditure on research and development and transfer of the latest technologies. There are, however, a few drawbacks to Irish law, for example, the rate of capital gains tax is 15% for gains from venture capital funds for individuals and partnerships and 12.5% for companies (slightly lower than the European average 19.3%) (Asen, 2021; *Capital Gains Tax*…, 2022). Moreover, transactions connected with waiving pre-emptive rights are subject to tax. Additionally, legal solutions concerning mergers are viewed negatively, for example the obligation to make the information about a transaction public (*Why Ireland*, 2022).

Second in the ranking is France[9], where special legal forms have been created for the purposes of private equity business: Fonds Commun de Placement a Risque (FCPR) and Fonds Commun de Placement dans L'innovation et Societe de Capital Risque, which fulfil the principle of tax transparency. The French tax law also provides a system of tax breaks for making private equity investments, and a special set of tax breaks for companies recognised as innovative and involved in research and development activities. Pension funds are in France a major provider of private equity capital, but above all, the country owes its high ranking to having created very good conditions for foreign investors. In this case, it is not about the amount of taxes (CIT in 2022 is 25%), but rather about the level of the expenses connected with opening branches of foreign companies. When taking into account all costs, i.e. expenditure on staff, setting up branches, as well as taxes, the cost of travel, equipment and energy – France turns out to be the cheapest country in Europe. Another advantage of France consists in a high level of other benefits (education, roads or the railway network).[10]

Great Britain, which leads the European private equity market, is third in the list. The greatest advantage of the British economy consists in very favourable legal and fiscal conditions for private equity investments as there is a special form of Venture Capital Trust (VCT) created especially for the purposes of private equity activity. VCTs are closed-end investment funds listed on the London Stock Exchange, which invest the raised capital in small private companies or in those quoted on AIM.[11] VCTs are exempt from income tax on capital gains and from tax on received dividends. Their participants are also exempt from tax on capital gains and dividends received from the fund, however this exemption is limited to

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9 In previous research (2003), France ranked 7th, with 2.09 points (Benchmarking European tax… 2003, p. 7).

10 Until 2019 CIT in France was the highest in the EU (with 34.4% rate), and then in 2020 reduced to 28%, while in the following year to 26.5%.

11 AIM – Alternative Market, the British equivalent of the Polish New Connect, i.e. a market for small but strongly growing companies.

individual investors. An additional incentive to invest in VCTs is a 30% tax relief on the maximum amount of GBP 200,000 of annual investment in VCTs, provided that it is maintained for five years, tax relief, tax-free dividends and an exemption from capital gains tax on the shares.[12] In 1993, the Reinvestment Relief programme was introduced, through which capital gains invested in unlisted businesses have been made exempt from tax (with no limit to their value). In 1994 the Enterprise Investment Scheme was introduced, giving individual investors an additional tax break of 20% of the funds invested in unlisted companies (annual investment cannot be greater than £500,000 and has to last at least three years). This relief also includes investments in companies listed on the AIM market. Under another act – the Venture Capital Scheme – individual investors can also deduct losses incurred on investments in unlisted businesses from their income tax in the given year or in the following year (with some value limits) (*VC manual*, 2021). The amount of corporate income tax (19%[13]) in Great Britain has no direct relation to the size of the private equity market. More important, therefore, is the system of tax reliefs and exemptions and the fact that pension funds are allowed to make investments of this type.

Belgian funds can operate as either a limited company or a PRIVAK. These are not fiscally transparent, and they have an additional drawback – a tax on goods and services in fund management. Funds operating in Greece take on the form of closed-end funds – Closed-End Venture Capital Mutual Fund (AKES), which are transparent in terms of tax, and fund management services are not subject to tax on goods and services.

The basic form of private equity activity in the Netherlands (7th in the ranking) is limited partnership, which is fiscally transparent and not subject to any restrictions on investment strategy. There are two CIT rates – 15% for income up to EUR 395,000, and 25.8% on everything above that. The tax rate on capital and dividend gains is 15%. [14] An important element of the Dutch private equity market is full consent to investments of this type being made by pension funds.

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12 In order to be entitled to this preferential tax treatment, VCT has to invest 70% of its funds in non-public companies belonging to a group of small and medium-sized enterprises (whose assets do not exceed GBP 15 million). A given one-year investment of the fund cannot be more than one million pounds, see: (*Guidance…* 2021).

13 The average rate among the UE member states amounted to 21.7% in 2021. Portugal had the highest combined corporate income tax rate, reaching nearly 31.5%, followed by Germany with a rate of 29.94% (Statista.com. n.d.).

14 In 2021 the standard CIT rate in the Netherlands was 25%, and the lowest rate of 15% was applied to the income bracket of up to 245 000 euro (*Tax summaries*, 2022).

Luxembourg also ranked high – in the 8th place. Private equity funds operating within its territory usually adopt the form of fiscally transparent *Fonds Commun de Placement* (FCPs), in whose case the principle of avoiding double taxation and not charging value added tax on fund management fees is also fulfilled. Luxembourg belongs to a small group of countries where there is no obligation to make public the information on having carried out a merger. There are two main income tax rates, 15% and 17%, which depend on the size of the company's revenue. Additionally, every company pays a solidarity surtax of 7% on the CIT rate, the municipal business tax rate (levied by the communes, and which varies from municipality to municipality, e.g. for Luxembourg City is 6.75%). Therefore, the effective combined CIT rate (i.e. CIT, solidarity surtax, and municipal business tax) for Luxembourg City is 24.94%. The CIT does not apply to tax-transparent entities (such as general or limited partnerships or European Economic Interest Groupings). A significant advantage of Luxembourg lies in no tax on capital gains and in a range of tax breaks directly related to private equity investments (e.g. in the case of investments in fund certificates).[15] Pension funds can invest in private equity funds, but they are subject to certain restrictions. Some solutions connected with the taxation of trading in pre-emptive rights are unfavourable – in certain cases the tax can be collected as early as at the time of granting pre-emptive rights. The registration of a business takes longer here than in most EU countries, and the fees related to it are high.

Italian private equity funds operating as Fondo Chiuso have several advantages but also some drawbacks. Their advantages are, above all, avoidance of double taxation and no value added tax on management fees, whereas the lack of fiscal transparency for domestic investors is considered its most significant flaw. There is a relatively high basic rate tax on capital gains – 24%; it applies to individual investors only. Capital gains derived from the sale of participations, however, generally are not subject to IRAP (except for banks and financial institutions/companies) and are 95% exempt from corporate income tax if the special requirements are met.[16] Capital gains realized by non-resident companies on the sale of participations ordinarily are taxed at a 26% flat rate. In some cases, capital gains from participations may be exempt, according to specific rules or a relevant tax treaty. There is no additional tax on trading in pre-emptive rights (tax is

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15 Dividends and capital gains derived by a qualifying entity from a qualifying shareholding may be exempt from Luxembourg corporate income tax and municipal business tax, notably if the entity deriving the income holds or commits to hold the participation, directly or indirectly, for an uninterrupted period of at least 12 months and the participation does not fall below 10% or below an acquisition price of EUR 1.2 million (EUR 6 million for capital gains) throughout that period (US tax ice…, n.d.).

16 More in (*International tax*…, 2021).

payable in the event of the sale of shares only, on the share premium). The Italian tax law also offers reliefs when enterprises cooperate with scientists from research institutes and science centres. The main disadvantages of the Italian legal system consist in investment limits imposed on the size of the financial commitment made by pension funds to investments in the shares of closed-end funds of up to 30% of assets, a relatively high rate of corporate income tax – 24%[17], the lack of reliefs for small and medium-sized enterprises, and a fairly long and expensive process of registering new entities (*Annual Survey of Investment…*, 2021; *Taxes on corporate income, Italy*, 2022).

The legal regulations in force in a given country are of great importance for the dynamism of the private equity market. For example, in the United States private equity investments (especially venture capital) attracted attention already in the late 1950s. After the early successes of the American Research and Development Company (ADR), which came about mainly as a result of investing in Digital Equipment Corporation (DEC), work on legislative changes that promote this kind of projects commenced.[18] There were five acts introduced to support the US private equity market. The first of them was the Revenue Act of 1978 – it reduced the rate of capital gains tax from 49.5% to 28%. A year later, the Employment Retirement Income Security Act's (ERISA's) Prudent Man Rule was introduced, changing the rules governing investments made by pension funds, allowing them to invest in private equity and venture capital projects. Then, in 1980, came the Small Business Investment Incentive Act, modifying the definition of the private equity fund and defining them as companies that stimulate economic growth through entrepreneurship development, which freed such funds from the obligation to register with the Securities and Exchange Commission as investment advisers and gave them greater investment flexibility. The next act was ERISA's 1980 Safe Harbour Act, separating investment fund managers from pension fund managers, and thus enabling pension funds to be accepted as partners of venture capital funds, but without the risk of being liable to the same extent as investment funds. In 1981, with the adoption of yet another document – the Economic Recovery Tax Act, the rate of capital gains tax paid by natural persons was reduced once more, this time to 20%. The regulations adopted by the US Congress on private equity financing have clearly had an impact on the improvement of this market's attractiveness to investors, who, since the mid-1980s, have been providing funds with ever-increasing amounts of capital, allowing them to finance a growing number and value of projects.

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17 As in January 2022.

18 More about ARD history in (Hsu & Kenney, 2005, pp. 579-616).

4.5. Legal forms of private equity and venture capital business and tax regimes in the Visegrad Group member states

In the Czech Republic, the law provides for private equity and venture capital activity a special vehicle, Fondy kvalifikovaných investorů (in English – a Qualified Investors Fund (QIF)), which allows for direct or indirect investments. A qualified investor is a Czech or foreign individual or legal entity who invests at least 125,000 euro (or the equivalent in CZK) and confirms that they are aware of the risks associated with investing in the fund, or at least 1 million CZK, if the fund administrator confirms that the investment is a match for the investor's financial background, investment objectives, expertise and experience. In this case, potential investors need to take an 'investment test'. Cross-border investments are generally possible and investment by foreign investors is also common. Foreign investment by the Czech QIF is less frequent, as careful implementation is required from a tax perspective.[19]

There are two principal forms of a QIF: as an Investment Company (IC, a legal entity, Joint Stock Company, separate taxpayer), and as a Unit trust (UT, not a legal entity, nevertheless a separate taxpayer). For a QIF, whether founded as IC or as UT, there are no specific tax exemptions. However, compared to the standard corporate income tax rate (currently 19%), a favourable 5% corporate income tax rate is applicable. For a QIF founded as an IC, all tax laws are applicable as for other corporations (typically Corporate Income Tax, Value Added Tax, possibly Real Estate Tax, Real Estate Transfer Tax). This also applies to a QIF founded as a UT, except that the applicability of Value Added Tax to UT is unclear (the 'supervising' joint stock company likely being the VAT payer). There are no stamp duties, capital duties or net wealth taxes for a QIF, whether founded as an IC or UT. The Czech participation exemption is likely to be applicable to a QIF founded as an IC, but not applicable to a QIF founded as a UT.

There is a special tax rate of 15% levied on the dividend income of Czech tax resident entities from non-resident entities (unless subject to participation exemption). In addition, the standard rules of the EU Savings Directive are applicable to interest payments.

For tax purposes, a QIF – whether founded as an IC or as a UT – is treated as opaque, as it is a separate taxpayer. Thus, a QIF is generally entitled from a Czech

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[19] The origins of qualified investor funds in the Czech Republic can be traced back to an amendment to the Collective Investment Act, which entered into force on 26 May 2006. A definition of a qualified investor can be found in Section 272 of Act No 240/2013 on investment companies and investment funds (*Zákon o investičních společnostech*…, n.d.).

tax perspective to double tax treaties. The tax rate for pension funds is 0%, and some kinds of those – called transformed pension schemes – are allowed to allocate directly up to 70% of assets in private investment funds.[20]

The approach regarding the recognition of tax transparency of foreign entities is in general unclear and not yet settled. In practice there are examples of cases in which the tax status for Czech tax purposes (transparent vs. opaque) has been set based on both the legal classification and the foreign tax classification. Under the prevailing interpretations by the Ministry of Finance, the tax treatment of the entity in its country of residence should be followed. Nevertheless, in practice, there are cases of such transparent vehicles being treated as non-transparent for Czech tax purposes. There is no actual experience with determining tax transparency and residency of investors in the fund.

As a special form of investment fund in Hungary, the investor's capital can be collected in Venture Capital or Private Equity funds (pe/vc funds) which are governed by the provisions of the Hungarian Act on Capital Markets (ACM). Under the provisions of the ACM, the pe/vc fund is a legal entity that issues public or private investment units (vc/pe notes), managed by an investment Fund Manager by investing the capital collected from the investors on behalf and for the benefit of the investors in accordance with predetermined investment principles. The funds are registered and supervised by the Hungarian Financial Services Authority, which approves the status of the funds prior to their establishment. Under the ACM, the Fund Manager must operate as a company limited by shares or a branch of a foreign company.

On the basis of the law, pe/vc funds are not subject to corporate taxation in Hungary. They do not fall under the personal scope of corporate income tax and solidarity surtax, either. However, the company or the branch managing the pe/vc fund is subject to corporate taxation according to the normal rules. The income derived from these activities is taxed at the level of the investors. From 1 January 2017, the CIT rate is a flat 9%, and is the lowest in the EU (*Taxes on corporate income, Hungary*, 2022).

Under the Hungarian Act on Local Taxes (ALT), an entrepreneur conducting business activity in the jurisdiction of the municipality falls under the personal scope of the ALT and is subject to local business tax. Local business tax is a tax that can be levied by the Hungarian municipalities on corporate taxpayers that have their legal seats or permanent establishments within the municipalities

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[20] The limit for private investment funds traded on OECD markets is 70%, and for other private investment funds – 5% (*Annual survey of investment…*, 2021).

jurisdiction. The business activity should be conducted in the entrepreneur's own name and on its own risk. Thus, under the ACM, the fund is seen as a group of assets, and as such cannot act in its own name and on its own risk, therefore it does not fall within the scope of the ALT.

In the case of pe/vc funds, the investment is embodied in the pe/vc notes issued by the fund, and all income derived as dividends, exchange gains or interests from the shares and debt securities of the Hungarian pe/vc fund's portfolio is embodied in the output yields of the pe/vc notes. The pe/vc note itself represents an ownership interest, but the income derived from that should be treated as interest for Hungarian accounting purposes.

In Hungary, there is a special tax levied on financial institutions. The tax base of credit institutions is the amended balance sheet total figure calculated from the financial statements of the second tax year preceding the current tax year. However, in the case of other financial institutions the tax base comprises the interest income and income from fees, charges and commissions. From 2019, the tax rate decreased from 0.21% to 0.2% of the tax base exceeding 50 billion HUF in the case of credit institutions; below 50 billion HUF, the tax rate is 0.15%. The applicable tax rate for financial enterprises is 6.5%. With effect from 2022, pe/vc fund managers and stock exchanges are exempted from the special tax liability of financial institutions (*HVCA jubilee 30 years yearbook*, 2021).

As Hungarian legislation does not levy any withholding tax on payments to legal entities, interest payments made by the pe/vc fund to legal entities are not subject to withholding tax. Yet, should there be any Hungarian or foreign resident individuals receiving distributions from the Hungarian pe/vc fund, personal income tax must be withheld by the Fund Manager.

As regards the double taxation of income earned by the funds from portfolio companies, note that treaty protection is only available for entities that are residents of a contracting state[21].

Based on the above, the treaty protection is not applicable to pe/vc funds in Hungary. Notwithstanding this, as noted above, Hungary does not levy any withholding tax on any payments made to foreign legal entities (unless they qualify as Controlled Foreign Companies, CFC).

In Poland there are no specific vehicles for the purpose of direct or indirect investment in private equity or venture capital. Usually, partnerships, corporate

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[21] The term 'resident' is defined by the OECD model treaty as any person that is liable to tax in the given country by reason of domicile, residence, place of management, etc.

entities or closed investment funds are used for such investments. A pe/vc business can be run as an investment fund, a joint stock company, a limited liability company or a partnership. In theory, the most adequate form for private equity should be an investment fund. Yet this is so only in theory, as in practice the rules governing the creation and operation of investment funds discourage from choosing this form for private equity investments. Under Polish law, there are three basic types of investment funds: open-end funds, specialised open investment funds and closed-end investment funds. Due to investment restrictions imposed by law, the only possibility for private equity business are closed-end funds, in particular their specialised form – non-public assets fund.[22] Only in the case of non-public assets funds are investment fund companies allowed the possibility of outsourcing to "specialised entities operating in this field" (this pertains to portfolios of securities not admitted to public trading only) (The Act on Investment Funds of 27 May…, 2004). This provision introduces the possibility of the fund being managed by entities operating as private companies limited by shares, which are not subject to capital constraints and disclosure obligations to the same extent as brokerage houses managing assets are. Open-end investment funds and specialised open investment funds are not suitable for private equity activities, as by definition, these are entities with variable capital, legally compelled to redeem their share units on each request of the participants. This prevents long-term financing, which a private equity investment in unlisted companies is in fact. Moreover, it significantly reduces the level of realisable rate of return, which discourages private equity investors. Investment funds established on the basis of the Polish Act on Investment Funds are exempt from CIT. However, tax may be due from the investors at the date of the fund's certificate disposal – provided that the investor is subject to tax obligation in Poland.

Other forms of conducting private equity activity mentioned above are a joint stock company and a limited liability company as defined by the Code of Commercial Companies (The Act of 15 September…, 2000). These legal solutions are not perfect for private equity business, yet they do possess certain advantages – above all, limited liability of partners to the amount of their contributions, and very low capital minimums, when compared with the requirements for investment funds.

The form of capital company is often used by companies that manage private equity funds, while the fund itself is only a business asset. This is the case for several reasons. Firstly, up until the end of 2000, foreign entities could operate in

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[22] Special forms of closed-end investment funds and specialised open investment funds (which include non-public assets funds) were introduced with the entry into force of the Act on Investment Funds of 27 May 2004 (The Act on Investment Funds of 27 May…, 2004).

Poland as capital companies only. Secondly, these companies are considered to be transparent, as they offer their shareholders limited liability for the company's obligations and have clear management and control structures. Thirdly, there is the possibility to transfer profits in ways other than payment of dividend or redemption of shares, provided that at least one of the company shareholders is another legal person (for example, by entering into transactions between given entities, or by granting to the fund loans and credits under suitable terms and conditions). In the case of corporate income tax payers, there is also the possibility to deduct the tax on dividends and redeem shares from the tax due on other income. Such a solution can significantly reduce the tax burden and may lead to a situation similar to that of direct investing by investors. An example of private equity fund operating as a capital public company listed on the stock exchange is MCI Capital ACI S.A.[23]

The third group of legal forms available in Poland for private equity business are certain types of partnerships, in particular, a limited partnership and a limited joint stock partnership. In their case, unlike in other partnerships, not all the partners are liable up to the value of all their assets. Limited partnership with a legal person as the general partner might be an ideal solution for private equity activity. The general partner could serve as asset manager and investors would be the limited partners. It is also a good option when the number of partners is relatively constant and their expectations regarding the duration and nature of the entire project are similar. Still, if there is no uniformity among the partners, a better option is a limited joint stock partnership, which – despite being a partnership – shares some features of public limited companies. The regulations concerning the rights and obligations of general partners are similar to those in a limited partnership, whereas limited partners are treated as shareholders. Operating as a limited partnership or a limited joint stock partnership has another fundamental advantage – since they are partnerships, they are not liable to pay corporate income tax, and only the income earned by partners directly is taxable.

The standard CIT rate is 19%. As of 1 January 2019, a lower 9% CIT rate for 'small taxpayers' was introduced. Companies that are subject to CIT with revenues of up to 2 million euro (from January 2020), under some conditions, apply the 9% CIT rate. A share capital increase (in the case of corporations) and a contribution/contribution increase (in the case of partnerships) is subject to a 0.5% capital tax, payable by a company or partnership that receives a capital contribution. This tax applies equally to limited liability companies, as well as to joint-stock companies, and could be a disadvantage for the Polish pe/vc

[23] More about MCI Capital ACI S.A. at https://mci.pl/.

investments. The solution that can strengthen the Polish pe/vc market is that a merger, division, or transformation of a corporation into another corporation is not subject to capital tax, even if the transaction results in a share capital increase. A similar exemption applies to a capital increase resulting from an in--kind contribution of an enterprise or its organised part, or a contribution of shares of the other corporation giving the majority of votes in this corporation, or a contribution of additional shares for the corporation, to which the shares are contributed already, has the majority of votes.

At the most, in the Polish market one can find private equity funds operating as foreign entities. In fact, most private equity funds operating in Poland are registered abroad, in places operating as tax havens, where the formalities connected with establishing and maintaining a business of this type are kept to the minimum (e.g. the funds managed by Enterprise Investors are registered in the US state of Delaware). Moreover, foreign funds are not subject to Polish reporting obligations, which gives them greater freedom of action. Polish law also provides better tax policies for foreign entities, with most incentives applying to Member States of the European Union (favourable agreements on avoidance of double taxation).

Table 4.2. Legal forms of selected private equity funds operating in Poland (in alphabetical way)

NO.	Fund name	Legal form of the fund	Country of registration of the fund	Managing company	Legal form of the managing company	Country of registration of the managing company
1	2	3	4	5	6	7
1	3TS Capital Fund IV	no data	no data	3TS Capital Partners	limited partnership	Finland
2	European Renaissance Capital II	no data	no data	Renaissance Partners	limited partnership	Poland
3	Innova/3	no data	no data	Innova Capital	limited partnership	Luxembourg
4	MCI Private Ventures	closed end investment fund	Poland	MCI Capital TFI S.A.	joint stock company	Poland
5	Nova Polonia II	limited partnership	Ireland	Krokus Private Equity Sp. z o.o.	limited partnership	Poland
6	PFR KFK	joint stock company	Poland	PFR Ventures	joint stock company	Poland

1	2	3	4	5	6	7
7	Polish Private Equity Fund I & II	limited partnership	USA (the State of Delaware)	Enterprise Investors	limited partnership	Poland
8	Polish Enterprise Fund IV	limited partnership	USA (the State of Delaware)	Enterprise Investors	limited partnership	Poland
9	Polish Enterprise Fund VIII	limited partnership	USA (the State of Delaware)	Enterprise Investors	limited partnership	Poland
10	Poland Partners	no data	no data	Innova Capital	limited partnership	Luxembourg

Source: own study based on information obtained directly from funds' representatives.

Polish tax solutions concerning private equity investments are not preferential. Under Polish legislation there are no special legal forms for this type of business, which means that Polish private equity funds have the same rights and obligations as all other companies. Only two types of partnerships ensure real fiscal transparency – limited partnership and partnership limited by shares. Profits earned by such partnerships are taxable only on the part of the partners. Favourable international agreements on the avoidance of double taxation that Poland has signed create very good conditions for foreign funds (even better than those for domestic entities). There are no special restrictions on the movement of capital, and foreign investors – especially those from the European Union – are treated on a par with the domestic ones. Another incentive for establishing foreign funds (even by entities seated in Poland) is not being subject to Polish regulations on reporting; probably the only drawback of a foreign fund are certain restrictions on real property purchase by foreigners (a permit is required). The tax rate on received dividends (19%) in force in Poland is lower than the average rate of the EU Member States (21.20%) in 2021.[24] There is no Net Wealth Tax and subscription tax in Poland. However, income tax, value added tax, transaction and capital tax, real estate tax and other taxes are applicable in relevant cases.

There are no specific vehicles in the Slovak Republic for the purpose of pe/vc investments. Such investments can be made through common vehicles allowed under Slovak legislation – these can be either transparent or opaque. The Slovak Income Tax Act does not provide for any specific tax regimes or exemptions for pe/vc business, so general tax rules are applicable in this case. As a general rule, dividends are not subject to tax, whether they are paid to any legal entity or individual, resident or non-resident. The standard CIT rate for 2022 is 21%,

[24] On the basis of (*OECD table...*, n.d.).

applicable for corporate taxpayers that achieve, for the relevant tax period, revenues higher than 49 790 euro. The reduced CIT rate for 2022 at 15% was introduced for corporate taxpayers and entrepreneurs and self-employed individuals that achieve an income up to 49 790 euro for the relevant tax period.[25] A withholding tax (WHT) of 7% may apply to certain taxable dividend payments to individuals. Furthermore, some kinds of income, such as interest or royalties, may be subject to a 19% WHT rate. A specific 35% WHT rate applies for payments to taxpayers from non-treaty jurisdictions (i.e. where no DTT or tax information exchange agreement [TIEA] exists and the taxpayer is not from a jurisdiction that is listed in the European Union's List of Non-Cooperating Countries) or where the beneficial owners of the income cannot be identified, including payments of taxable dividends. Interest payments are generally tax deductible, in compliance with the Income Tax Act. Interest paid to non-residents is subject to a 19% WHT, unless an exemption under the EU Interest and Royalty Directive (as implemented in the Slovak tax legislation) or a DTC applies (*Slovakia country…*, 2021).

Slovakia in general follows the mutual recognition approach from a commercial law perspective, i.e. it respects the classification given to an entity by its jurisdiction. Generally, in the case of opaque entities the DTT between Slovakia and the country of residence of the entity would apply, and in the case of transparent entities, the DTT between Slovakia and the country of residence of partners (investors).

4.6. European ideas for the strengthening of private equity and venture capital activity

Many conducted studies indicate the strong influence of private equity capital on the level of the innovation and competitiveness of a given economy. This prompted private equity companies to develop, within the framework of the European Venture Capital Association (EVCA) transformed into Invest Europe, the so-called White Paper – and not once, but twice[26]. Its first publication took place in 1995, and the second in 2001. The reason behind creating both these documents was to present barriers to the development of the private equity market in Europe. The documents were targeted at the leaders of individual countries, representatives of opinion-forming groups and politicians who have influence on regulatory changes. The White Paper identifies particular legal and tax solutions that limit the development of private equity investments, including: lack of a European stock

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25 In 2020 the threshold was 100,000 euro (*OECD table…*, n.d.).

26 Invest Europe, before European Venture Capital and Private Equity Association (EVCA) is the association representing the European private equity industry.

exchange for small, growing businesses; lack of sources of long-term capital; lack of a structural and legal framework for private equity funds; no tax incentives for private equity investments (especially in the case of small, highly innovative companies); inefficient system of property rights transfer; low level of education in the field of venture capital and private equity; poor design of the tax system (tax on capital gains should include investment risk, especially in young private companies, or adequate structure of tax on managerial options – options should not be taxed at the time of their acquisition, and the tax on capital gains from the sale of shares under the management stock options programme should be lower) (*White paper...*, 1995, 2001). Publishing these documents resulted in the increased interest on the part of the European Commission in the private equity market. However, its actions are focused, above all, on the implementation of the European Single Market Programme, under which the elimination of restrictions on banking and insurance services as well as on investment and pension funds' operations is planned.[27] Full liberalisation in the pension fund sector and in securities trading is yet to be achieved. To remove the aforementioned barriers to the development of the private equity market, the Action Plan was established, which highlights the importance of private equity capital for the development of the economy. This document presents a list of actions to be undertaken by individual Member States to ensure fiscal transparency for the private equity business, to unify tax law (e.g. the regulations on managerial options), to improve bankruptcy laws, and to create incentives for investing in higher-risk projects (*Action plan*…, 1998). The last document regarding the private equity market that the EU adopted was the Lisbon Strategy of 2000, which set out a strategic goal for European integration, i.e. by 2010 the EU was to become the most competitive and dynamic knowledge-based economy in the world (Report by the Economic and Financial Committee (EFC) on EU Financial Integration, 2002*)*. This objective could have been achieved had two programmes been fully implemented: the Financial Services Action Plan (FSAP) and the Risk Capital Action Plan (RCAP). So far, the desired effect has not yet been produced in many areas. In December 2021, The European Commission published a series of proposals designed to implement the Capital Markets Union (CMU) Action Plan. Among these are the fund management reviews of the Alternative Investment Fund Managers Directive (AIFMD) and the European Long-Term Investment Fund (ELTIF) Regulation, as well as of the European Single Access Point (ESAP) Omnibus. Those proposals demonstrate the crucial role asset managers, such as private equity and venture capital managers, play in the financing of the European economy, by acting as a bridge between investors and businesses. Whilst investors committed

[27] Implementation of the European Single Market Programme began on 1st January 1993.

more than 100 billion euro of capital in private equity in 2020, private equity backed companies represent more than 10 million employees.

M. Bresson, Director of Public Affairs at Invest Europe commented on the new European proposals: "This CMU package of initiatives is by and large a step in the right direction. Even on more controversial amendments, the private equity industry's concerns and specificities have so far been taken into consideration. We can definitely see this as a recognition of the role our industry can – and will – play in the twin transitions Europe needs" (Invest Europe, 2021). Next to the AIFMD, the revision of the ELTIF framework has the potential to drive new managers' interest into this EU voluntary label which allows long-term AIF managers to market to retail clients. The amendments introduced to the proposal will make it easier for managers to set up ELTIF fund-of-funds and to market ELTIFs in a broader range of jurisdictions. The changes to the conflict of interest and diversification rules are also likely to increase the attractiveness of the regime.

Meanwhile in America — 'carried interest' – the way of tax avoidance for private equity and venture capital fund managers

Private equity already enjoys the most absurd tax break in America carried interest – which allows big fund managers to pay capital gains taxes, rather than income taxes, on their profit bonuses, on the idea that their intellectual contributions should be treated equally to the profits made by their investors. Carried interest has been a lightning rod with politicians for years. In 2016, even Donald Trump decried carried interest, which basically allows that private equity execs pay a lower tax rate than many wage earners. Yet nothing has changed – and it again survived the most recent tax reform bill (Davison, Wilmer, & Bloomberg, 2021).[28]

Carried interest is effectively a payment for investment services that is taken out of the profits of the money managed for investors. Private equity firms use pooled money from large institutional investors like pension funds to purchase companies or financial stakes in companies. As described above, the investors pay the private equity firms carried interest out of their investment profits. The fund managers effectively transform the 2% management fees (separate from the standard 20% profit participation) from ordinary income into capital gains, as well. How could this happen? Take the example of one fund manager who in selling his minority stake to the other company, also gave that company a right to a portion of his management fees. Thus a stream of ordinary income becomes a windfall of capital

[28] Note that in 2020 alone, private equity deals amounted to around 1.4 trillion USD, and in the US, private equity firms now own more than 8,000 companies, compared with 4,000 in 2006.

gains, reducing the maximum rate of 37% to 23.8% and potentially deferring that tax payment for years (*Close the carried…*, 2021).

Under current tax law, the carried interest income is taxed at the preferential rates granted to investment income, even though the income represents compensation for services. In all other contexts, compensation income is taxed as ordinary income. The carried interest tax loophole is tax alchemy that magically turns ordinary compensation income into preferentially taxed investment income. The carried interest paid to fund managers is taxed as if it were a profit from a long-term investment rather than what it is: remuneration for performing services (managing other people's money). This distinction allows the general partners to almost halve their tax bill by paying the 20 percent long-term capital gains rate instead of the ordinary income tax rate of 37 percent that would likely apply to these top earners. This 20 percent long-term capital gain rate is lower than the marginal tax rate applied to most American families in 2021, single filers would pay a marginal tax rate of 22 percent of their taxable income if they earn over 40 525 USD (81 051 USD for married couples filing jointly). This means that private equity managers pay a lower marginal tax rate on the carried interest income than middle class taxpayers pay on their wages and other compensation. Treating carried interest income as ordinary compensation income could raise between 1.4 billion USD and 18 billion USD annually.

Private equity firms, normally secretive about their internal economics, are loath to discuss these sales. However, based on months of reporting and dozens of interviews with insiders and investors in these funds, *Forbes* has been able to identify 13 new billionaires who have unlocked fortunes by this financial engineering (*How clever deals…*, 2019). Hence, thanks to the carried interest 'trick' the richest get richer.

L. Phalippou, Oxford professor and the author of *Private Equity Laid Bare*, describes the problem of carried interest very accurately: "The official story [to limited partners] has always been we don't make any money on management fees, we only make money on carried interest. What this says is: I don't make money only with carried interest, I make tons of money with management fees." (*How clever deals…*, 2019).

4.7. Conclusions

The history of private equity funds in developed countries shows them to be an important part of economic development, as by financing ventures considered to be too risky for others, they contribute to the increase in the number of enterprises,

positively affect their competitiveness, create many jobs and are an important participant in the capital market.

To sum up, in many Western European countries as well as in the United States, there have been special legal and organisational forms created for the activity of private equity funds, through which separate regulations on tax and disclosure obligations have been provided. A mixed situation can be seen in the Visegrad Group members states: in two countries (Poland and the Slovak Republic), private equity funds as a legal form are not explicitly regulated in domestic law, and in the Czech Republic and Hungary there are dedicated legal forms for pe/vc business. In all the countries mentioned in this paper, there are various legal structures used for this type of activity, e.g. a closed-end investment fund, a limited partnership, a limited join stock. Some of them are fiscally transparent, some – like investment funds – are exempt from income tax (such as British Venture Capital Trusts with the most favourable legal and fiscal conditions).

In all markets one can find private equity funds operating as foreign entities. As it turns out, many of them are registered abroad, in places operating as tax havens, where the formalities connected with establishing and maintaining a business of this type are kept to the minimum (e.g. in Delaware, US, Luxembourg, and Cyprus). Another concept for tax avoidance is the presented "carried interest" applied in the United States, reducing the maximum rate of 37% to 23.8%.

All the above-described solutions show that, when it comes to private equity investments, there is no uniformity in the legal and taxation systems in the EU countries. In the American and British tax systems there are many special tax exemptions, and thus these markets are the biggest private equity and venture capital markets.

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5

Tax fraud detection in accommodation services

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5.1. Introduction

Tax fraud is an integral part of tax theory (e.g. Sandmo, 2004; Slemrod, 2007). It occurs when taxpayers deliberately fail to fully comply with their tax obligations, resulting in a loss of revenue to the state budget (Franzoni, 1998). The fact that these are not insignificant amounts is demonstrated, for example, by the European Parliament's estimate (2021) stating that in 2020, EU countries lost €164 billion through VAT carousel fraud alone.

Although fraud has also been covered in connection with other taxes, it is fascinating to see what modern methods the fraudsters come up with – not only the well-known frauds such as smuggling (Pitt, 1981), during which goods are secretly transported across national borders without the knowledge of customs authorities.

Fraud can also be observed in income tax. Tax havens, which for many years allowed aggressive tax planning, served very well for its proliferation in the past (Dharmapala, 2008). However, the issue of tax havens is not yet closed, as evidenced by the Panama Papers and Pandora Papers.

However, such findings bring with them many problems, most of all, setting a bad moral example for other taxpayers who may start thinking about committing tax fraud. In fact, if they are exposed to these reports of fraud for a long time, they begin to regard this behaviour as the new norm (cf. Allport, 1920; Le Bon, 1896).

For this reason, inspection carried out by tax administrators is a necessary tool for their elimination, yet there are some areas that are more risky than others and

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need more attention. In order to identify such activities, individual sectors need to be monitored over the long term and continuously assessed through estimates of potential fraud. Measuring fraud in itself is a very challenging activity as there is no single universal procedure that can be applied in all countries and regions.

Despite this, measurement practices can be divided into traditional and modern approaches (Alm, 2012). Traditional methods use indicators of the shadow economy for measurement, while modern instruments are used where direct measurements are lacking. Examples of methods for measuring black market activity include estimating unreported cash receipts (e.g. Cagan, 1958; Feige, 1979), tax loophole estimation (e.g. Raczkowski, 2015), approximate methods and the representative sample method (e.g. Nam, Parsche, & Schaden, 2001) and the relation between energy consumption and gross domestic product (e.g. Kaliberda & Kaufmann, 1996). Yet, each measurement must be adapted to the conditions and specifics of the particular activity.

The aim of this chapter is therefore to propose specific possibilities for detecting tax fraud in accommodation services. In terms of timing, the authors focused on the period of the COVID-19 pandemic, building on the research by Semerád, Radvan and Semerádová (2021). Although the study focused on the situation during lockdown in the Czech Republic, the authors' recommendations can be applied in other countries as well.

This chapter is based on the technical publications that cover the issue and measurement of tax fraud, focusing on the taxation of accommodation services in the Czech Republic during the COVID-19 pandemic from March 2020 to November 2021. This period is specific in that it saw repeated closures of accommodation facilities. Furthermore, government orders prohibited the provision of short-term rentals, while long-term rentals were not affected by the bans.

It is questionable how closely these orders were followed. Information has emerged that some facilities did not comply with these restrictions. However, real evidence is lacking, that is also why this chapter discusses the proposed solution only in theoretical terms. It was not the authors' intention to charge a particular business entity, although this proposal could actually be used by tax administrators to investigate possible fraudulent conduct.

5.2. The background of tax fraud in the Czech Republic during the COVID pandemic

During the lockdown period, there were repeated restrictions on business activities. Only shops with essential goods such as food shops, drugstores,

pharmacies (Ministry of Industry and Trade of the Czech Republic, 2020) and Internet shops remained uninterrupted. The restrictions also affected personal services, which include accommodation services.

Yet, it is necessary to add that at the same time as the closure of the establishments, entrepreneurs were compensated in the form of support programmes of aid, loans and credits (Government of the Czech Republic, 2021; Ministry for Regional Development of the Czech Republic, 2020). This meant that these establishments remained closed throughout the period of the government orders, except to accommodate people on business trips.

The situation escalated when accommodation facilities were closed again in December 2020, which also affected mountain resorts. Citizens of the Czech Republic did not want to give up their stay in the mountains. First, in accordance with the orders, they took advantage of the fact that they could travel to the mountains for a day, even though the lifts had to be out of service (Vaníčková, Lesáková, & Wojnar, 2020).

Gradually they began to look for legal gaps that would allow them to stay for several days. One of these was the use of the exemption for the provision of accommodation to persons travelling on business. This in itself would not be against the government's short stay ban order if persons on business trips did not take other household members with them (Švihel, 2020), however the provision of accommodation for these already violated the ban. Increasingly, other citizens of the Czech Republic began to seek a multi-day stay in the mountains.

One of the legal options was foreign stays in countries where skiing was allowed, e.g. in Poland, Austria and Slovakia (Prima CNN, 2021), which has probably further increased the pressure on the Czech accommodation market, and the Czech accommodation providers found ways to meet domestic demand. The legal gap was the use of a fictitious long-term rental.

While short-term rentals lasting no more than 48 hours continuously (Act No. 235/2004…, Section 56a(2), Value Added Tax Act) were subject to regulation, long-term rentals were not restricted by government orders. In this way entire families could move freely and with impunity throughout the Czech Republic in regard of all types of holiday facilities (cottages, chalets, guesthouses or suites) being rented in the mountains. Everything was done in accordance with the government orders and in the case of proper taxation, this situation would not even affect the fulfilment of tax obligations. However, this would only be the case if the stays were not merely fictitious long-term rentals as these contracts

served only as proof to road inspections when travelling across the closed districts, and for those using accommodation to have some justifiable reason for staying outside their 'usual' place of residence (Ministry of the Interior of the Czech Republic, 2021). Circumventing the checks was not the only thing the parties to the contract did. In fact, there were speculations that the landlord destroyed the contracts after the rental ended (Hejtmánek, 2021).

In essence, there was no evidence of the tenants' whereabouts. If this assumption is true, the landlord was committing a crime. Not only did they unjustifiably reduce their own tax obligations, in particular income tax, value added tax, social and health insurance, and failed to pay the transient occupational tax according to the Lodging Tax Act, but they also unjustifiably benefited from the support they were entitled to during the period of government restrictions (see Semerád, Radvan, & Semerádová, 2021).

The problem is that this is an almost undetectable fraud because cash payments leave no digital trail. Such a procedure can be used virtually anytime and anywhere. While it is true that in the period before the COVID-19 pandemic cash receipts were subject to registration under the electronic revenue registry (see Radvan & Kappel, 2015; Semerádová & Semerád, 2016), this obligation was discontinued as a result of the pandemic. Thus, there is no data trail on these payments, making later detection difficult. Therefore, the empirical part focuses on the tools that, with regard to such a situation, enable tax administrators to detect fraud not only in real time, but also later on.

5.3. The model examples

The authors' proposal is based on an analysis of the standard market behaviour of entrepreneurs; to define it, two model examples were used. The first describes the behaviour of a business person who complies with government orders, fulfils the tax obligations and looks after the property as should be done. The second example, on the other hand, describes an entity where fraudulent behaviour and non-compliance with tax obligations can be assumed.

By subsequent comparison, the study evaluated the characteristics that could be a warning signal to tax administrators that fraud may be occurring. By doing so, the tax administrators can increase the likelihood of detecting fraud by targeted control, make their human resources management more efficient, and indirectly set right the market environment through prevention. The advantage of this solution is that fraud detection can take place not only in real time but also afterwards.

A fundamental problem, not only with accommodation services, is the fact that citizens often have no reason to take a tax receipt from the supplier. If the transaction takes place in cash, then there is space for the seller not to declare their proceeds.

Naturally, all businesses are not suspected of this behaviour, as most of them are duly fulfilling their duties. The problem is that there are fraudsters who undermine the fair functioning of the market and enrich themselves even at the expense of fair competitors who cannot defend themselves.

This is a poor starting position for the proper functioning of the market. Failure to remedy this puts unsustainable pressure on compliant entrepreneurs to adapt to market conditions. Either they will resist the pressure even at the cost of having to close the business themselves, or they will adapt to the pressure and start cheating too. This is unacceptable from the point of view of the tax administrator and it is therefore necessary to set rules that will straighten out the market environment once again.

Therefore, in this chapter the authors analysed the standard market behaviour of entrepreneurs. Consider an accommodation facility that provides short-term rentals during the operation of the pandemic status. At that time, most of the establishments were to remain closed to the public. The tax administrators were able to verify this fact by means of a local field investigation. However, given the number of subjects, this is an almost impossible task. Thus, the tax administrators must rely on the honesty of the subjects, which, as evidenced by information about potential fraud, cannot be the only form of control.

In addition, the Czech Government itself suspended the electronic revenue registry, which could have been used by tax administrators to check cash flow in real time. It was therefore necessary to examine other parameters that can be monitored, like cash flow.

Model example 1

The standard behaviour for a business that complies with the measures looks as follows. Assume a situation where the accommodation facility is completely closed during the restriction period and does not provide accommodation to anyone. In this case, the entrepreneur's income is reduced, but at least the fixed costs remain, such as labour costs, maintenance and repair of the building and equipment, and heating. It is the natural behaviour of an entrepreneur in a crisis to try to keep excess costs to a minimum until the situation improves or stabilises

(George, 2010). The authors consider the period of the closed accommodation facility to be a prime example of a crisis during which the entrepreneur reduces consumption to a minimum.

In the real life this means, among other things, limiting the heating of spaces that are not occupied at the time. It is logical that in the winter season, the heating cannot be stopped as it could damage the pipes and other parts of the property, however the person running the business will probably limit heating to the minimum necessary to reduce electricity and natural gas consumption. Similarly, it can be assumed that they will reduce use of water as well, as there will be no reason to consume water apart from routine maintenance and cleaning.

Model example 2

In the second example, we define the behaviour of a business person who demonstrates criminal behaviour by, among other things, failing to fulfil their tax obligations.

Assume that the entity does not cease its activity and continues to accommodate guests without issuing a tax receipt and without properly taxing their income. This generates revenue for the entrepreneur, but at the same time increases the costs, e.g. electricity consumption, as the operator has to provide guests with acceptable thermal conditions. At the same time, these guests increase their water consumption, which is an additional cost for the entrepreneur to incur.

It is the difference in electricity, gas and water consumption that mainly differentiate between the two entities (Kaufmann & Kaliberda, 1996). The authors' recommendation is that tax administrators should focus on this indirect evidence of the actual operation of the accommodation. Another type of consumption that can be tracked over time is, for example, data traffic for the Internet (Schneider & Buehn, 2016). However, the traffic is very complicated to monitor, as one accommodation facility may have multiple suppliers at the same time.

Measuring electricity consumption is not a new method used to detect the shadow economy. Although the amount of resource consumption has decreased due to industry changes (Hanousek & Palda, 2006). The authors believe that it still provides a powerful tool for real-time fraud detection.

However, the proposal is that consumption within the industry should not be used to measure the shadow economy, but rather the individual assessment of consumption for a specific structure should be used. The following example of billing of natural gas consumption can be seen in Table 5.1.

Table 5.1. Gas consumption during the billing period

Period	Beginning	End	Consumption
January	1	22	21
February	22	62	40
March	62	105	43
April	105	126	21
May	126	137	11
June	137	139	2
July	139	141	2
August	141	143	2
September	143	150	7
October	150	171	21
November	171	200	29
December	200	245	45

Source: authors' own work.

Table 5.1 shows that the accommodation facility experienced ongoing consumption during the first half of 2020. However, this information is insufficient to detect fraud. Tracking consumption needs to be carried out over a longer time horizon to account for any fluctuations in consumption over time as every property is different and uses different electrical and gas appliances. Thus, it is not possible to set a specific amount across the board that is fixed and acceptable for all. Some buildings may also use a different heating method, e.g. solar panels, a solid fuel boiler, a wood-burning stove, etc.

In real time, but no later than after the end of the monthly reading period, the tax administrators can assess the extent to which the facility has been used by comparing the consumption of the same facility in previous periods, and at the same time the consumption in a given period for comparably sized facilities in the region. This will help the tax administrators to take into account other external influences such as the weather. It is logical that if temperatures are lower, more heating will be needed and vice versa.

Naturally, it is still not possible to say unequivocally that the facility is involved in any fraud, but at least the tax administrators can better target their control activities and carry out a targeted on-site check. If there is any doubt, immediate action can be taken and sanctions imposed.

However, the fundamental question is how the tax administrators find out about the consumption of the point of consumption. The authors propose that for

accommodation facilities that are used for short-term rentals (registered with the trade office as a business establishment), tax administrators should have access to the databases of electricity, gas and water distributors. This access should be in real time within an online database to track consumption (energy flows). The result will be a graph on which non-standard increases can be identified of consumption (anomalies). This measure is in accordance with Section 57(1)(d) and Section 97(2) of the Tax Code as it is a special recording obligation.

In this way the tax administrators can keep a running record of consumption for each entity. To illustrate this, the authors provide a model for four business entities: A, B, C and D. Assume that these are four accommodation facilities that have the consumption as shown in Table 5.2, and that all these entities are comparable in size and number of rooms and are located in the same area.

Table 5.2. Gas consumption for accommodation facilities A, B, C, D [m^3]

Period	A	B	C	D
January	21	35	22	21
February	40	60	39	37
March	43	55	42	40
April	21	32	22	22
May	11	18	12	12
June	2	5	3	2
July	2	5	2	3
August	2	5	4	2
September	7	13	8	7
October	21	32	22	22
November	29	39	28	30
December	45	63	49	50

Source: authors' own work.

In order to be able to compare the information over time, the resulting output is shown in Figure 5.1. Based on this graph, it is clear that accommodation facilities A, C and D have almost identical consumption levels, but facility B has a higher long-term consumption.

If this is the consumption level of 2020, then the extended consumption period would match that of the government's ban on short-term rentals. This could be assessed as being suspicious and the tax administrators could target the subject

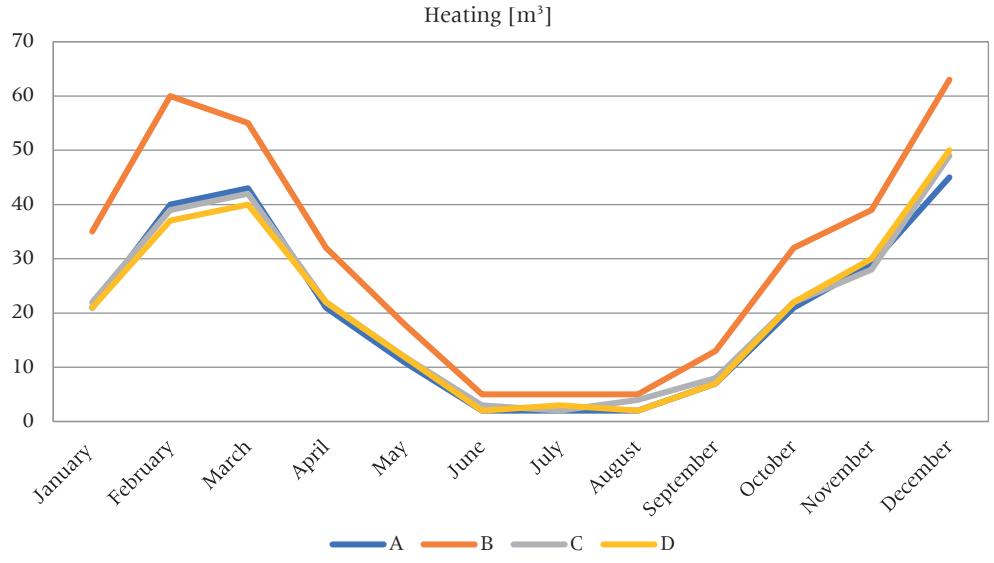

Fig. 5.1. Comparison of consumption – heating in 2020 [m³]

Source: authors' own work.

for inspection in this way. The study does not claim that entity B is committing fraud, and it must be proved by the tax administrators or other law enforcement authorities.

In order to avoid checks due to a minor deviation from the standard set by this methodology, the authors assume that an acceptable deviation would be set and that the evaluation would be performed in an automated manner. For this, it would be necessary to create a suitable kind of technical support that link the databases of electricity, gas and water suppliers with the database of the tax administrators. However, this inspection process can be used at any time for any entity in any region.

5.4. Conclusions

This chapter addressed the issue of tax fraud that potentially could have occurred during the COVID-19 pandemic at accommodation facilities in the Czech Republic. According to publicly available information, some landlords circumvented the government's order banning short-term rentals by providing fictitious long-term rentals, even though they were short-term rentals by nature. At the same time,

these businesses did not declare their cash receipts because they had destroyed all the evidence of the guests' stay after their departure.

In so doing, the defrauding businesses did not comply with their tax obligations (income tax, value-added tax, social security and health insurance) and did not pay the transient occupational tax to the municipality according to the Lodging Tax Act. Moreover, they also used subsidies, soft loans and credits they received from the State to compensate for the reduction in operations.

As the electronic revenue registry system was also suspended during the pandemic, the tax administrators did not have the tools to check compliance with the government restrictions in real time (with the exception of on-site checks).

For this reason, the authors first defined standard business behaviour, creating two model examples of entrepreneurs – the first model complied with all the orders, the second did not. The differences in their behaviour could be identified by the amount of resources consumed, namely electricity, gas and water. For the entity that provided accommodation services despite the restriction, there was not such a significant decrease compared to the compliant entity.

Therefore, the authors propose that for accommodation facilities that are used for short-term rentals (registered with the trade office as a business establishment), tax administrators should have access to the databases of electricity, gas and water distributors. This access should be in real time within an online database to track consumption (energy flows); the evaluation should be done in an automated manner.

In this way, the tax administrator can increase the likelihood of detecting fraud by targeted control, make the human resources management more efficient, and indirectly correct the market environment through prevention. The advantage of this proposal is that fraud detection can take place both in real time as well as after the event.

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6

Using Benford's law to detect anomalies in taxpayers' behaviour on the example of Polish income taxes

*Piotr Luty**

6.1. Introduction

Changes in tax law are inevitable. On the one hand, they result from adapting definitions of legal and tax assumptions to the changing business environment. Examples of these are, among others, more precise regulation of virtual currencies in law, and the description of activities related to the achievement of capital gains. On the other hand, the pressure to implement state budget assumptions forces the regulators to achieve a budget balance. Finally, various restrictions are introduced in how tax costs are recognised, and additional tax burdens imposed.

Taxpayers' reactions to changes in tax law are generally always perceived negatively. Additional tax burdens encourage taxpayers to avoid taxation. In this context, tax avoidance may refer to reducing income through individual interpretations of costs or revenues and by replacing sources of income with other income or by transferring part of the activity to another country.

In 2018, tax regulations in Poland, including corporate income tax (CIT), introduced the obligation to disclose additional information on income from capital gains in company tax returns. Thus, companies have been forced to reveal separately operating income and capital gains, while previously, these two categories were treated jointly for companies.

This chapter examines whether the changes to tax regulations, including those in the area of capital gains tax introduced in 2018 and 2019, impacted on taxpayers' behaviour. Their behaviour was measured by fitting the empirical digit distribution (first digit of income test) with the Benford theoretical

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distribution. The study assumes that taxpayers' behaviour not engaged in tax avoidance activity should follow Benford's law distribution.

The study focuses on the taxation of legal persons, including limited liability companies and joint-stock companies, whose taxable revenues in the tax year exceeded EUR 50,000,000. These companies publish information on their income.

6.2. Literature review and hypothesis development based on the application of Benford's law

The tax system in Poland, corporate income tax

In Poland, corporate income tax is regulated by the Corporate Income Tax Act (here in after CITA see: The Act from 15th of February 1992…). The CITA regulations apply to, among others, legal entities, i.e. limited liability companies and joint-stock companies; the CITA regulations also apply to tax capital groups (TCG). TCG is not the subject of interest in this study, as the number of such entities publishing tax information to the public is small. In 2018, 66 TCGs, and in 2019 65 TCGs, published their income information on the website of the Ministry of Finance. The number of entities included in the PGK classification does not meet the requirements of the application of Benford's law and therefore are not the subject of further analysis in this chapter.

CITA states in Article 3 as follows: "taxpayers, if they have their seat or management board in the territory of the Republic of Poland, are subject to taxation on all their income, regardless of where they are earned" and "taxpayers, if they do not have their registered office or management board in the territory of the Republic of Poland, are subject to tax liability only on the income they obtain on the territory of the Republic of Poland". Taxpayers' revenues include revenues from all kinds of activities carried out in the territory of the Republic of Poland and from securities, transfer of shares, or unrealised profits. In Poland, income is taxed, which is the difference between tax revenues and the costs of obtaining them. The basic rate of taxation with corporate income tax is 19%. This rate also applies to companies' income from activities related to virtual currencies.

In 2018 and 2019, new regulations were introduced regarding the qualification of revenues and costs, including those belonging to capital gains. Article 7b CITA indicates capital gains income as follows:

"1) revenues from participation in the profits of legal persons, (…), constituting the revenues obtained from this share (...)

2) income from the contribution to a legal person or company (...)
5) revenues from the sale of receivables previously acquired by the taxpayer and receivables resulting from payments classified as capital gains (...)
6) revenues:
   a) the property rights (…), except for licence revenues directly related to obtaining payments not included in capital gains and rights generated by the taxpayer,
   b) from securities and derivative financial instruments, except for derivative financial instruments to hedge revenues or costs, not included in capital gains,
   c) due to participation in investment funds or collective investment institutions,
   d) from a rental, lease or other agreement of a similar nature regarding the rights referred to in point (a) a-c,
   e) from the sale of the rights referred to in point (a) a-c,
   f) from the conversion of a virtual currency into a means of payment, goods, services or property rights other than the virtual currency or from the settlement of other liabilities with a virtual currency".

The income taxation structure is based on the income category, however in some situations, the legislator introduces the tax base at the level of income or the amount of paid receivables. According to Article 22 CITA: "Income tax on the specified in Art. 7b paragraph. 1 point 1 of dividend income and other income (income) from participation in the profits of legal persons having their registered office or management board in the territory of the Republic of Poland shall amount to 19% of the obtained income". Additionally, Art. 22d CITA states that:

"1. The income tax on the income obtained from the sale of virtual currencies against payment is 19% of the received income.
2. The income from the sale of virtual currencies against payment is the difference between the sum of revenues referred to in Art. 7b paragraph. 1 point 6 lit. f, and the cost of obtaining revenue referred to in Art 1. 15 sec. 11-13".

Article 26 CITA states that: "In the event that the entities referred to in para. 1, make payments of the shares (…) for an entity having its registered office or management board in the territory or in a country specified in the regulations issued on the basis (…), are obliged to collect an income tax in the amount of 19% of the amount of the payment."

In calculating the income for 2019, the catalogue of tax revenues and costs related to unrealised gains and capital gains was extended. Additionally, there is

a prohibition on pooling income, including core business and capital gains. In the opinion of tax consultants appearing in the public sphere, taxpayers perceive these changes negatively (*2019*: *Firmy czekają duże zmiany*…, 2018)

Based on the quoted excerpts from the Corporate Income Tax Act provisions, one can observe the complexity of Poland's corporate income tax system. Therefore, it is not surprising that introducing new tax obligations, and thus the new tax burden, can lead to tax avoidance-oriented behaviour by taxpayers.

An additional obligation for large entities is to disclose information on the income obtained, including capital gains, to the public. Based on Article 27b CITA, this obligation applies to "taxpayers other than tax capital groups, whose value of tax revenues obtained in the tax year referred to in paragraph 1, exceeded the equivalent of EUR 50 million converted into zlotys at the average EUR exchange rate announced by the National Bank of Poland on the last working day of the calendar year preceding the year in which individual taxpayers' data was disclosed to the public".

Benford's law in tax avoidance research

Benford's law deals with the distribution of digits in numbers describing natural phenomena. Based on the dependence on using mathematical tables in Newcomb's library (Formann, 2010), pages with lower digits were searched more often than those with higher digits. This is justified by the fact that numbers with lower digits are more common than numbers with higher digits. Benford reached similar conclusions. He noticed that the analysis of the frequency of the occurrence of digits in the appropriate places in the numbers has a logarithmic distribution. Considering the first digit from the left based on Benford's law, it can be concluded that in 30% of the numbers, it will be the number 1. The share of the remaining digits will decrease logarithmically until it reaches 4.5% for the number 9. However, the analysed numbers must meet certain conditions, and thus not all human phenomena can be studied using Benford's law. More on Benford's law's research criteria and methodology is in Chapter 6.3.

In the literature on the subject, Benford's law is used to study phenomena related to fraud perpetrated during general elections, medical research, and tax avoidance (Miller, 2015). The undervaluation of Benford's law in medical science is noted by Pollah et al. (2016). The authors point out that Benford's law can be used in clinical analyses. The effectiveness of Benford's law in detecting tax fraud was confirmed by Nigrini (2012). Kossovsky (2014) researched the use of Benford's law in disclosing accounting fraud, including detecting cases of fraud during

audit examination. Interesting research on personal taxation in Italy was conducted by Ausloss et al. (Ausloos, Cerqueti, & Mir, 2017), which confirmed the effectiveness of using Benford's law to analyse anomalies in natural persons' income. Loan et al. (Loan, Hac, & Anh, 2018) studied tax settlements in their research and indicated the usefulness of Benford's law as a tool to reveal fraud in specific tax returns. Demir and Javorcik (2020) used Benford's law to expose tax fraud resulting from adverse changes in the law in Turkey.

The cited studies indicate the significant usefulness of Benford's law in detecting anomalies related to tax fraud. This chapter supplements the current knowledge on this topic with tax issues related to Poland's tax on capital gains.

6.3. Research method and sample

Benford's law

Benford's law in worldwide literature is widely used to assess tax manipulation and fraud (Miller, 2015; Nigrini, 2012). In this chapter, for the first time in Poland, Benford's law was used to assess the impact of changes in tax regulations on the behaviour of taxpayers related to tax avoidance. No Polish publication on this research topic is known to the author. This study used Benford's first digit test to evaluate the distribution of the first digits of income from capital gains. The analysis period covers 2018-2020, i.e. the years in which the tax regulations changed (considered unfavourable by taxpayers). The study assumes that taxpayers' avoidance of capital gains tax should be reflected in income distribution. Thus, the test of the first digit of Capital Gains Income should indicate, after the introduction of the new legislation, non-compliance with the Benford distribution.

The utility of Benford's law for detecting anomalies in the distribution of variables in other disciplines is described in Chapter 6.2. Additionally, Maht's (2017) research indicates that Benford's law may be used to detect irregularities in financial statements (using the example of Toshiba). All the models used to notice financial and tax irregularities are subject to limitations. Thus, the use of the dependencies described by Benford's law may indicate potential places of tax irregularities.

Benford's law requires specific conditions for the studied variables. Nigrini (2012) indicates that the studied phenomena cannot have boundary values (minima and maxima) introduced by humans. Thus, for example, the variables determining students' grades at school cannot be analysed, as the grade is

assigned a closed scale of values. The analysis of companies' income is set without a specific maximum, therefore it meets the requirements for applying Benford's law. The second criterion mentioned by Nigrini (2012), is the lack of digits assigned to an ordinal number embedded in the analysed values. This means that it cannot analyse, for example, invoice numbers or bank account numbers where the encoded information is embedded in the appropriate places in the numerical sequence. This assumption is also fulfilled for analysing companies' income in Poland. Revenues and tax-deductible costs influence income, and there is no data encoded in this value, for example, the taxpayer. The third condition is a sufficiently large research sample and the distribution of values following the positively skewed distribution (right-hand asymmetry). When analysing the amount of income in companies, it can be concluded that only a few economic units achieve very high income, hence the distribution of income should be asymmetric on the right.

The Benford distribution can be described by the following formula (Nigrini, 2012):

$$BL(d) = log\left(1 + \frac{1}{d}\right),$$

where: d – number of digits.

The Benford distribution can be applied to different digits in a number. This study focuses on the most commonly used first digit test. It means that only the first digit from the left is analysed, with values from 1 to 9. A graphic illustration of the Benford distribution for the first digit is shown in Figure 6.1.

Many measures describe the fit of an empirical distribution to a theoretical distribution. Based on the literature review, it can be concluded that Mean Absolute Deviation (hereinafter referred to as MAD) is a standard method of examining the fit of distributions. MAD is commonly used to assess distribution fit (González, 2020; Isaković-Kaplan, Demirović, & Proho, 2021; Nigrini, 2012). This method examines the mean value of the absolute differences between the empirical and Benford's distributions for the analysed digits. The formula for MAD is as follows (Nigrini, 2012):

$$MAD = \frac{1}{n}\sum_{i=1}^{n}|x_i - m(X)|,$$

where: $m(X)$ – average value of the data set, n – number of data values, x_i – data values in the set.

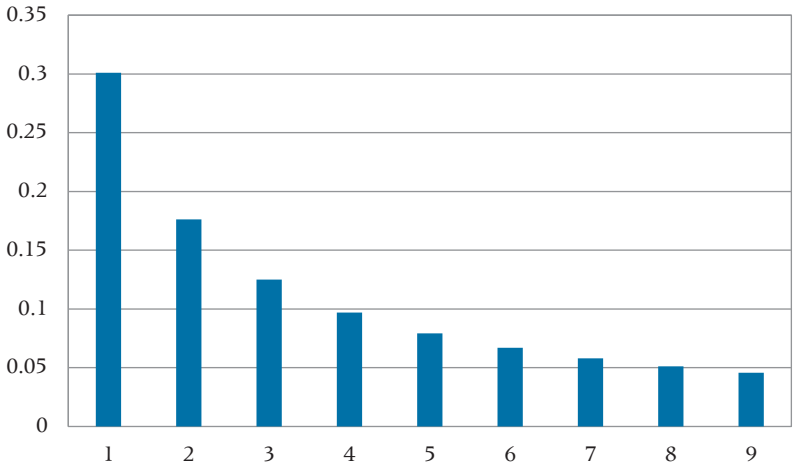

Fig. 6.1. Benford's distribution

Source: own study based on (Nigrini, 2012).

Depending on the MAD value, the degree of matching of the distributions is determined. A MAD value in the range <0-0.006) indicates a close fit of the analysed distributions. A MAD value in the range <0.006-0.012) indicates an acceptable fit of the analysed distributions, whilst a MAD value in the range <0.012-0.015) indicates a marginally acceptable fit of the analysed distributions. A MAD value above 0.015 means that the distributions do not fit.

The negative impact of changes in tax regulations, including capital gains tax, on taxpayers' avoidance behaviour will result in the empirical distributions' nonconformity with the Benford distribution. The results of the study are discussed later.

Description of the research sample

The research used a database with Polish companies with publicly available data concerning individual tax information for the study. These data are published by the Minister of Finance for companies with revenues exceeding EUR 50,000,000 in PLN terms in the fiscal year. Based on the obtained data[1],information covering the capital gains tax was disclosed only for 2018, 2019 and 2020. Therefore, the analysis in this chapter covers the following three tax years: 2018, 2019 and 2020.

[1] Individual data of CIT taxpayers – Ministry of Finance – Gov.pl website (www.gov.pl).

Only those companies that achieved operating income and capital gains were selected for the study. Thus, companies that generated a tax loss in the fiscal year were eliminated from the analysis. In each of the analysed years (2018-2020), the size of the research sample for the analysis of other income exceeded 2,000 companies. In the case of income from capital gains, the figure in 2018 was close to 400 companies and systematically decreased, reaching around 300 companies in 2020. Table 6.1 presents descriptive statistics for the analysed variables determining income in 2018-2020. As the data set available from the Ministry of Finance concerns companies with revenues exceeding EUR 50,000,000, without additional criteria, the database includes companies belonging to various sectors of economic activity.

Table 6.1. Descriptive statistics for capital gains and other income in 2018-2020

Variable	Valid *N*	Mean	Median	Minimum	Maximum	Std. Dev.	Skewness
Capital gains 2018	396	66,684,750.92	1,559,138.10	12.52	18 359 374 869.57	924 335 364.96	19.72
Income other 2018	2103	107 160 262.60	22,902,983.84	507.24	15 852 581 556.99	581 017 116.39	17.79
Capital gains 2019	345	24 258 862.34	1,389,339.46	0.84	581 287 974.73	77 236 014.21	4.97
Income other 2019	2320	87 267 886.44	25 209 616.32	2 113.53	7 136 423 534.65	354 491 647.20	12.64
Capital gains 2020	296	29,453,203.47	1,851,535.02	0.59	2,465,578,429.97	153 517 587.31	13.87
Income other 2020	2336	100 681 171.46	29,435,800.32	293.88	34 884 912 924.84	792 421 949.62	37.31

Source: own study.

Based on Table 6.1, it can be concluded that capital gains and other revenues had a positive skewness coefficient in all the years, which means that the distribution of the study variables had a right-hand asymmetry of the distribution. Thus one of the assumptions of the application of Benford's law was met.

6.4. The research results. Distributions conformity in 2018-2020

Distributions conformity for 2018

The research began by analysing the first digit of companies' income distribution in 2018, when individual taxpayers' information disclosed the amounts of income from capital gains for the first time. Figure 6.2 shows the empirical distribution of the first digit for capital gains (bars) and the Benford distribution (line).

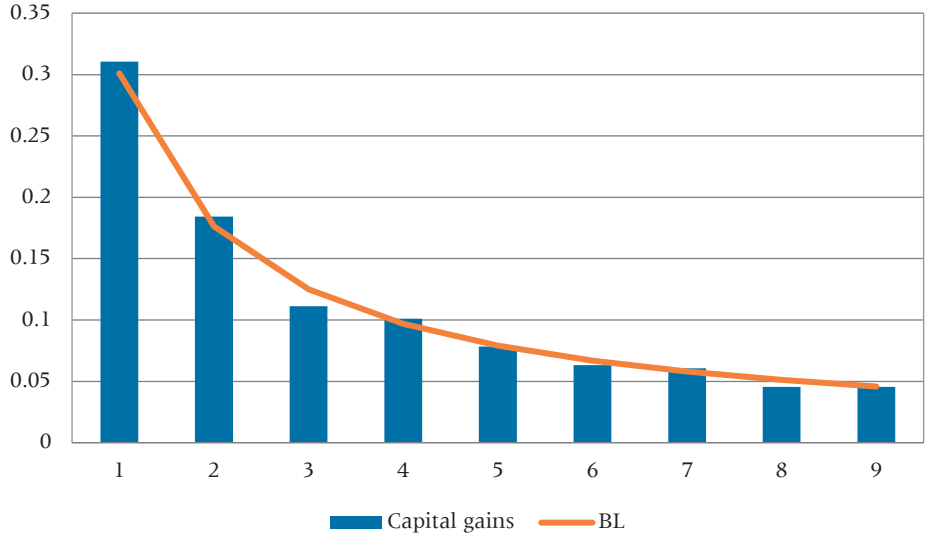

Fig. 6.2. Distributions conformity for capital gains in 2018

Source: own study.

Based on Figure 6.2, it is possible to observe the convergence of the distributions of the first digit. Additionally, the estimated MAD value of 0.0054 indicates a close conformity between Benford's empirical and theoretical distributions.

The second variable analysed in 2018 is other taxable income. Figure 6.3 shows the empirical first digit distribution for other income (bars) and the Benford distribution (line).

Figure 6.3 shows the convergence of the distributions of the first digit. Additionally, the estimated MAD value of 0.0062 indicates an acceptable fit between the empirical and theoretical Benford distributions.

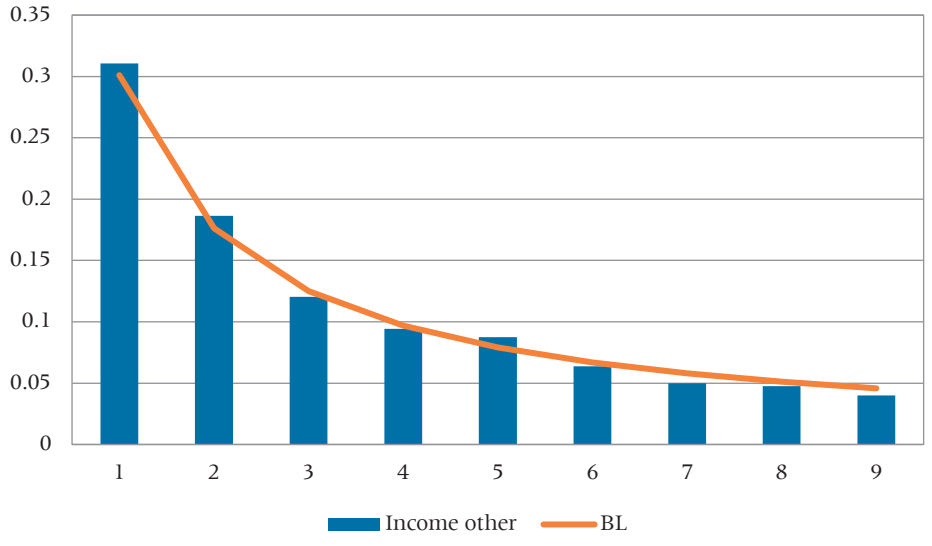

Fig. 6.3. Distributions conformity for other income in 2018

Source: own study.

Based on Figures 6.2 and 6.3 and the estimated MAD values, it can be concluded that in the published income of the surveyed taxpayers, based on the first digit test, no anomalies that could indicate tax avoidance were revealed.

Distributions conformity for 2019

As indicated in Chapter 6.2, in 2019 the changes introduced in the income tax on capital gains were perceived negatively by taxpayers. The reaction of taxpayers was the tax optimization and activities aimed at avoiding the harmful effects of changes in taxation. Figure 6.4 shows the empirical distribution of the first digit for capital gains (bars) and the Benford distribution (line).

Figure 6.4 shows numerous anomalies, including the frequency of the first digits 9, 7, 5 and 1, below Benford's theoretical level. The remaining digits: 2, 3, 4, and 5, appeared more frequently than the Benford distribution indicated. Only the number 8 had a share similar to the theoretical ones in the income from capital gains. The estimated MAD value of 0.0188 confirmed the nonconformity of distributions.

Another variable analysed in 2019 is other income taxable. Figure 6.5 shows the empirical distributions of the first digit (bars) and the Benford distribution (line).

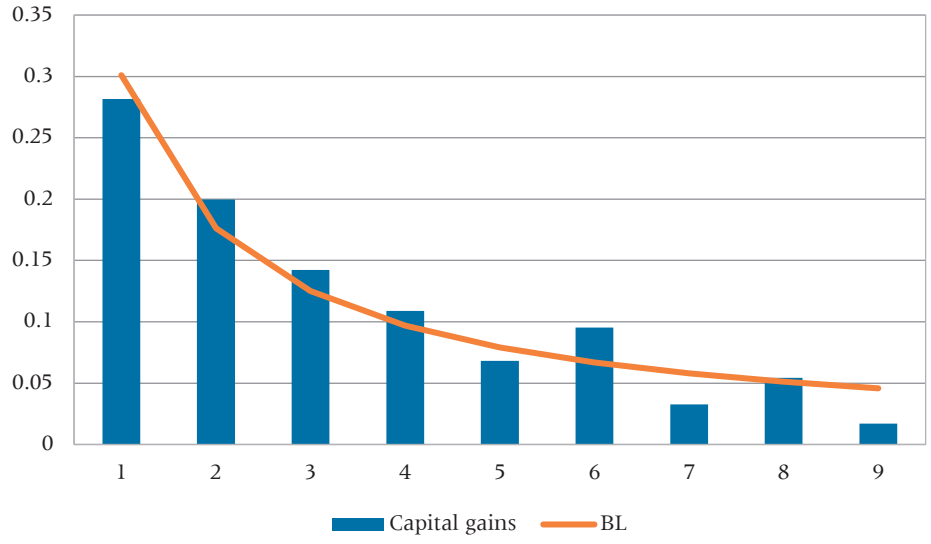

Fig. 6.4. Distributions conformity for capital gains in 2019

Source: own study.

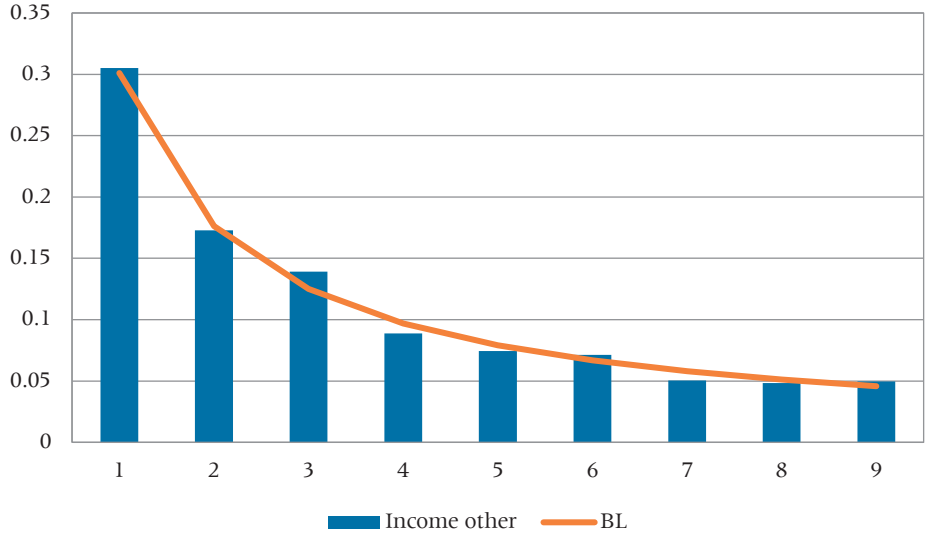

Fig. 6.5. Distributions conformity for other income in 2019

Source: own study.

Figure 6.5 shows the convergence of the distributions of the first digit. Additionally, the estimated MAD value of 0.0059 indicates a strong match between the empirical and theoretical Benford distributions.

The first digit test results for income, shown in Figures 6.4 and 6.5, only show anomalies for capital gains income. Thus, they confirm the assumptions about the possibility of tax avoidance by taxpayers.

Distributions conformity for 2020

The last audited period is the fiscal year 2020, a particular year because, in addition to the amended rules on disclosure of capital gains, companies were affected by the harmful effects of the COVID-19 pandemic. At the outset, it could be assumed that the first digit test for capital gains income would not be consistent with the Benford distribution, as it was in 2019. Additionally, the negative effects of COVID-19 could have resulted in anomalies in the first-digit distributions for other income. Figure 6.6 shows the distributions for the first digits of capital gains income.

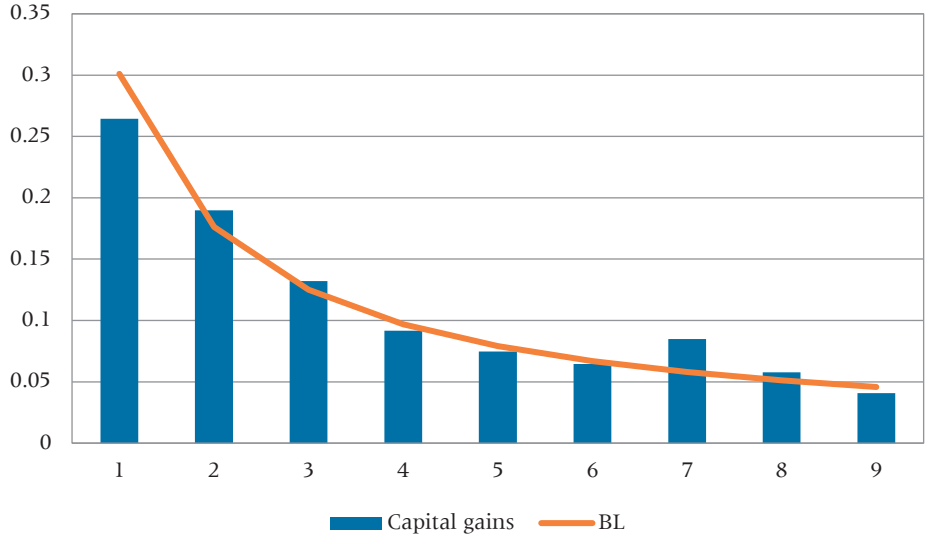

Fig. 6.6. Distributions conformity for capital gains in 2020

Source: own study.

Based on Figure 6.6, it can be concluded that there are visible anomalies (large deviations of empirical values – bars, concerning theoretical values – line) in the

distribution of digits 1, 2, and 7. The confirmation of the lack of fitting of the distributions is the estimated value of MAD, which is 0.0121.

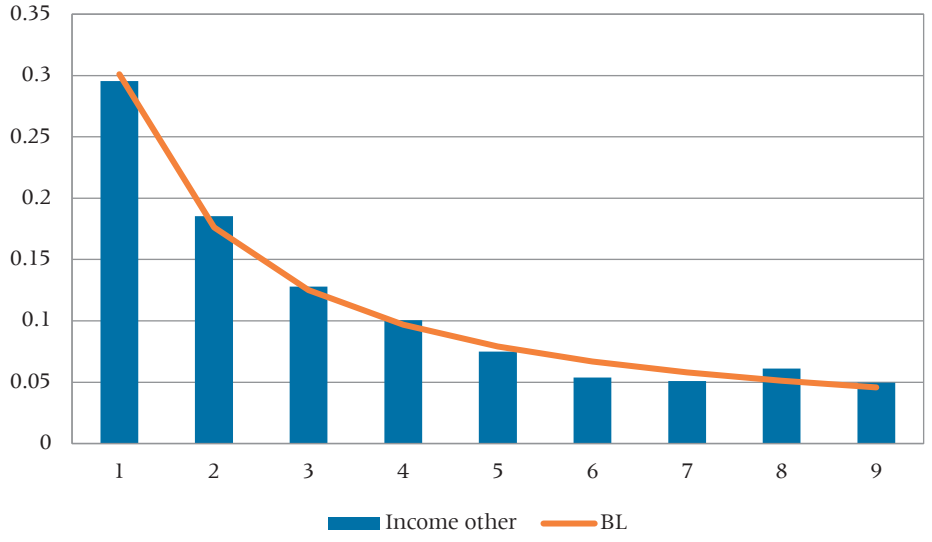

Fig. 6.7. Distributions conformity for other income in 2020

Source: own study.

Figure 6.7 shows the distribution of the first digits for the remaining income. Figure 6.7 shows anomalies in the distributions, among others, for digits 1, 6, 7, and 8. The final confirmation of the fit of the empirical digit distribution with the Benford distribution is presented by the estimated MAD. For other income, in the first year of impact on COVID-19 companies, the MAD value is 0.0067. This means that the studied distributions are acceptably fitted.

6.5. Conclusions

This chapter examines the application of Benford's law to the analysis of anomalies occurring in the income of Polish taxpayers. Three tax years were selected for the study: 2018, 2019 and 2020. The selection of the research period results from two premise. First, changes were made to the tax law provisions determining income from capital gains in the analysed period. Secondly, individual tax information on income from capital gains was publicly available for companies with revenues above 50,000,000 euro.

The research variables were income from capital profit and other income. The study assumes that changes in tax regulations in determining income from capital gains could impact on tax avoidance behaviour. Based on the research, using the Benford first digit test, it was proved that in 2019 and 2020, there were anomalies in the distributions of the first digits. Consequently, based on MAD, the inconsistency of the empirical distributions with the theoretical ones of Benford was established. Interestingly, in the analysed period, for the remaining tax revenues of the companies, no inconsistency of the distributions was found. In addition, even in the year of the negative impact on companies of the COVID-19 pandemic in Poland, MAD for 2020 indicated an acceptable fit of the first digit distributions. Therefore, it can be concluded that the changes in the law on capital gains resulted in the increased manipulation of financial data, thus contributing to an increase in tax avoidance behaviour.

In further research, it might be interesting to extend the research sample to other countries of the Visegrad Group. The presented study has a limitation regarding the companies selected for the analysis. Publicly available data on companies' income was available to large entities with revenues exceeding EUR 50,000,000. In the case of other companies, the scale of tax avoidance for income from capital gains may be even greater.

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Summary

As long as taxes exist, tax avoidance will not disappear. This monograph was intended to provide an inventory of the state of knowledge in tax avoidance, and to indicate new methods of counteracting this phenomenon, especially in the countries of the Visegrad Group.

The conclusions presented in this publication have been formulated based on domestic and foreign literature reviews. In addition to the theoretical part, the monograph presents the results of empirical research.

Dominika Florek presented the motives of tax avoidance. Many researchers around the world look at the motives of taxpayers' behaviour towards the obligatory duty of paying public levies. Based on the conducted research, it was indicated that tax avoidance motives are very complex and, apart from strictly financial reasons, there are also cultural motives. It is interesting that a relatively small number of studies have been conducted that have taken into account the cultural factor, or more precisely, culture understood as types of behaviour and attitudes characteristic of the inhabitants of a given region. By learning about the reasons for tax avoidance, we can better counteract this phenomenon.

Although there are many motives for tax avoidance, its scale can be measured by the amount of tax burden reduction. An analysis of Polish and foreign literature by Anna Fuks and Patrycja Świerczek-Dutka, showed that constant topicality discussed issues concerning tax avoidance and tax optimization resulted from the changeability of the tax law regulations. Adjusted and new law regulations eliminated previously available solutions and created new tools to construct the fiscal strategy. Legal tools recognized as lawful (the choice of the tool is permitted by law) and illegal (the use of techniques recognized as tax fraud) were used to reduce the tax burden. Concerning the illegal behaviour of taxpayers, it became particularly important to detect tax fraud by developing new techniques for detecting tax avoidance.

Detecting tax fraud requires access to taxpayers' financial data and appropriate techniques for detecting tax irregularities. Apart from the company's communication with investors, contractors or the financial sector, the accounting system is essential in determining the tax base and tax burden. Hana Bohušova presented various methods of manipulating financial data in financial statements. The monograph presented the impact of accounting in the V4 countries on

determining taxable income and multiple tools for assessing fraud in financial statements. The literature review described the models for detecting fraud in financial statements by advanced mathematical functions with many variables. There is a need to create new tools for detecting tax fraud to determine the possibility of committing tax fraud by companies.

Ilona Fałat-Kilijańska presented the impact of the choice of running a business on the phenomenon of corporate tax avoidance. The author overviewed different countries' legal and tax solutions favouring or restricting private equity activity, especially in the V4 countries. From a tax avoidance point of view, it is essential to know the legal forms which private equity funds can adopt. A mixed situation has been observed in the Visegrad Group member states – in two countries (Poland and the Slovak Republic), private equity funds as a legal form are not explicitly regulated in domestic law, and the Czech Republic and Hungary have dedicated legal forms for pe/vc business. The choice made in running a business, presented by the author, showed that some of them were fiscally transparent, some – like investment funds – were exempt from income tax.

The effectiveness of anti-tax avoidance techniques needs constant adjustments and new tools to detect potential frauds. Lucie Semerádová, Pavel Semerád and Michal Radvan focused on the taxation of accommodation services in the Czech Republic during the COVID-19 pandemic from March 2020 to November 2021. This period was specific in that it saw repeated closures of accommodation facilities. Furthermore, the government prohibited the provision of short-term rentals. The fraudsters did not comply with their tax obligations (income tax, value-added tax, social security and health insurance). According to the Lodging Tax Act, they did not pay the transient occupational tax to the municipality. As the result of their research, Lucie Semerádová, Pavel Semerád, and Michal Radvan stated that in order to detect tax fraud, tax administrators should have access to the electricity, gas, and water distributors (in a real-time database of track consumption – energy flow). The tax administrators could increase the likelihood of detecting fraud by targeted control to make its human resources management more efficient.

Finally, Piotr Luty examined the application of Benford's law to the analysis of anomalies occurring in the income of Polish taxpayers. The author examined whether the changes to tax regulations, including those in the area of capital gains tax, introduced in 2018 and 2019, impacted on taxpayers' behaviour, which was measured by fitting the empirical first digit distribution with Benford's theoretical distribution. The study assumed that taxpayers' behaviour not engaged in tax avoidance activity should follow Benford's law. The research proved that in

2019 and 2020, the empirical first digit test did not confirm fitting empirical distributions of capital gains tax to Benford's distribution. Therefore, Benford's law might be the first signal for the legal authorities that taxpayers avoid their tax burden.

The authors hope that the content presented in the monograph will help the state of tax avoidance knowledge and have a practical value in diagnosing tax irregularities.

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