

Tax Avoidance, Accounting and Financial Reporting

**The Perspective
of the Visegrad Group Countries and Serbia**



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**The Perspective
of the Visegrad Group Countries and Serbia**

edited by Piotr Luty



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Introduction

We would like to present to you a monograph on the pertinent problem of tax avoidance in the context of accounting and financial reporting. Accounting describes the economic reality of a company and provides information about the property and financial status of companies. An important role of accounting, resulting from its fundamental assumptions, is to provide useful information and present a faithful and reliable image of the economic unit.

The monograph aims to explain the role of accounting in creating financial information, including for tax purposes. Fixed assets and intangible assets are susceptible in terms of valuation and tax consequences. Thus, this monograph is part of research on companies and performance management in the context of an effective tax rate.

In the first chapter, literature was analysed in terms of tax avoidance and accounting. Based on the research carried out, it was noted that there is no scientific study financed by the International Visegrad Fund in the SCOPUS database. Therefore, this monograph is the first study of this type in which researchers from Poland, the Czech Republic and Serbia share their knowledge and experience.

The second chapter describes intangible assets as a substantial part of a company. Intangible assets are a generator of value based on the knowledge that invisible and non-physical substances are difficult to measure, understand, and define. Undoubtedly, intangible assets are a source of competitive advantage and increase future value. Compared to tangible assets, the growing importance of intangible assets shows that an Internet connection is more valuable than an entire computer itself, and that electronic components are more important than mere pieces of metal. The management of intangible and tangible assets has also changed because most knowledge-based companies cannot present their values in the balance sheet bearing in mind that they possess enormous added value and profits on the total market value, which is an external component, and an income statement (profit and loss account). This is crucial proof that ideas, innovations and knowledge drive the performance and lead to a competitive advantage (Nakamura, 2003; Stewart & Ruckdeschel, 1998). However, they do not influence

value creation directly, in fact rather indirectly. The purpose of this study is to explore the relevant existing literature on the topic of international accounting standards focused on intangible assets. The current international accounting standards frameworks have similarities and differences on the treatment of intangible assets and its potential effects on financial performance.

The third chapter deals with the comparability of financial statements in intangible fixed assets compiled following IAS/IFRS, US GAAP and chosen European national GAAPs. It also examined how these accounting adjustments are potentially risky in using creative accounting techniques. The author is interested in the IAS/IFRS and US GAAP systems, IFRS for SMEs, and the national accounting regulations of the selected V4 countries – the Czech Republic, Slovakia and Poland. Intangible assets created by own activity can be considered the most significant differences in terms of conditions for assets recognition, measurement, and subsequent valuation. The primary analysis was performed in several European countries. Greenhouse gas emission allowances can also be considered a problematic area; comparability is not achieved here even at IAS/IFRS and US GAAP. The paper evaluates the positives and negatives of individual accounting treatments encountered in the theory and practice of business entities.

The fourth chapter presents the most important (according to the author) principles of accounting for property, plant and equipment according to Polish accounting regulations and IAS 16. Particular attention was paid mainly to possible (in light of these principles) choices in the accounting policy and their impact on the financial position of the entity presented in the financial statement. The differences between accounting regulations and the tax law concerning fixed assets and the possibilities of influencing the number of tax burdens were also explained.

The final, fifth chapter of the monograph deals with the effective tax rate of Serbian business entities. The first part describes calculating corporate income tax in the Republic of Serbia and adjustments of revenues and expenses according to the national regulation. The differences between the financial results disclosed in the income statement and tax results revealed in the tax statement are then discussed in the following part. The research results of the analysis of 9,549 annual reports of Serbian business entities show the average effective tax rate of the sampled entities for the period 2016-2018. Although the corporate tax has a significant impact on a country's economy, it brings a relatively low tax revenue for most governments. The main contribution of this chapter lies in the realisation as to what extent the Serbian government can collect the tax. and in pointing out the differences between the income tax management of public companies and in other Serbian entities.

1

Review of research on tax avoidance and accounting

*Piotr Luty**, *Rui Costa***

1.1. Introduction

Tax avoidance is a standard tool to reduce the tax burden on business entities. Since the introduction of taxation of companies' income, i.e. the reduction of their resources, company managers have been striving to reduce the fiscal levy in most cases. For this purpose, tax optimization plans are prepared. The decisions made in shaping tax income are possible thanks to efficient accounting, which provides valuable financial information. The purpose of this chapter is to provide an overview of the literature on corporate accounting and tax avoidance. The database of SCOPUS manuscripts was used to review the literature. The literature study was divided into seven stages, following the keywords related to accounting and tax avoidance. The study of the literature was carried out in two steps. The first focused on general tax avoidance issues in studies prepared by researchers from the Visegrad Group countries and Serbia, while the second involved researching the literature regarding the relation between accounting (including fixed assets and intangible assets) and tax avoidance.

1.2. Tax avoidance in studies by researchers from the Visegrad Group and Serbia

To investigate the topics and research areas undertaken by researchers from the Visegrad Group countries (Poland, Hungary, Slovakia, the Czech Republic) and Serbia, the following search criteria were introduced into the Scopus database:

1. TITLE-ABS-KEY ("*tax avoidance*" OR "*tax fraud*" OR "*tax manipulation*" OR "*tax evasion*").
2. AFFILCOUNTRY ("*Poland*" OR "*Slovakia*" OR "*Czech Republic*" OR "*Hungary*" OR "*Serbia*").

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The first search criterion focused on words appearing in the titles, abstracts, and keywords of manuscripts from the SCOPUS database. The words searched for were “*tax avoidance*”, “*tax fraud*”, “*tax manipulation*”, “*tax evasion*”. Additionally, a second search criterion was introduced in terms of the countries affiliated with the authors of the papers. Due to the interest of researchers from the Visegrad Group and Serbia, the database was searched regarding the affiliation of “*Poland*”, “*Slovak Republic*”, “*Czech Republic*”, “*Hungary*”, “*Republic of Serbia*”. As a result of the search assumptions made, 166 manuscripts meeting the given criteria were obtained. The literature analysis was conducted using VOSviewer software.

The analysis of the affiliation of the authors selected in the study of manuscripts is presented in Figure 1.1.

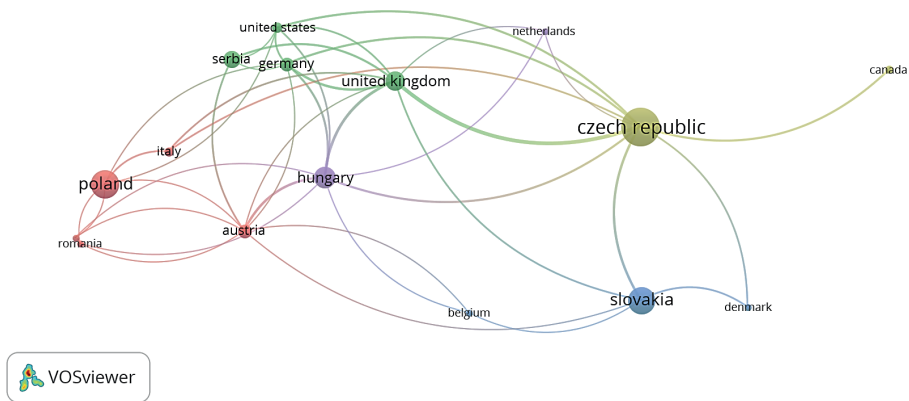


Fig. 1.1. Authors affiliation in selected manuscripts

Source: own study based on the SCOPUS database, using VOSviewer.

As seen in Figure 1.1, cooperation between researchers from the Visegrad Group countries and Serbia can be observed. As part of the partner countries selected for analysis, the research project from Hungary cooperated with researchers from the Czech Republic. In turn, the researchers from the Czech Republic collaborated with researchers from Slovakia. Therefore, there is a need to combine the knowledge and skills of researchers from other Visegrad countries and Serbia to better to understand the causes and effects of tax avoidance.

Research areas can be analysed based on two criteria: the keywords used in manuscripts and/or the analysis of the abstracts. Figure 1.2 shows the most common keywords in the manuscripts selected for the study. In addition, clusters, i.e. the thematic connections between words, are marked with colours.

As seen in Figure 1.2, it can be concluded that there are four thematic clusters in the studies by researchers from the Visegrad Group and Serbia. The first red

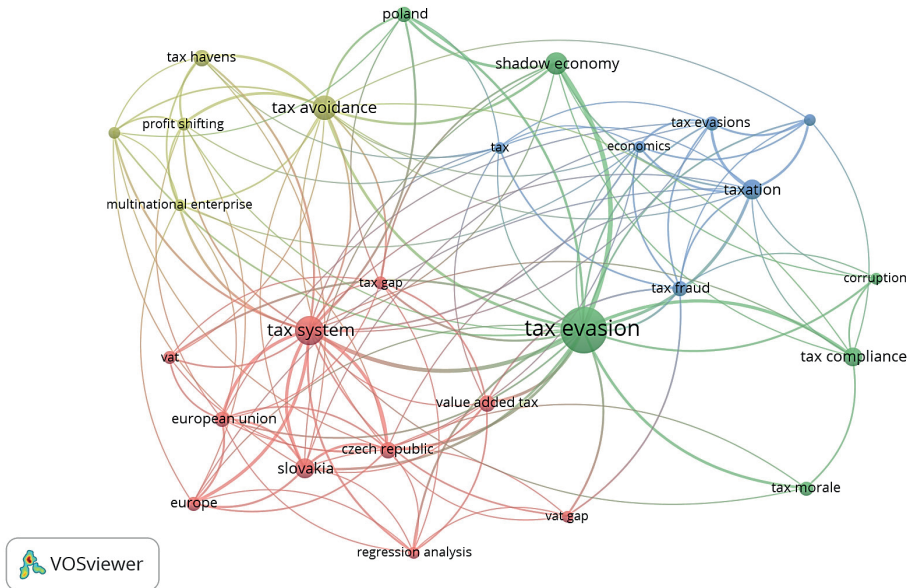


Fig. 1.2. Keyword analysis in selected manuscripts

Source: own study based on the SCOPUS database, using VOSviewer.

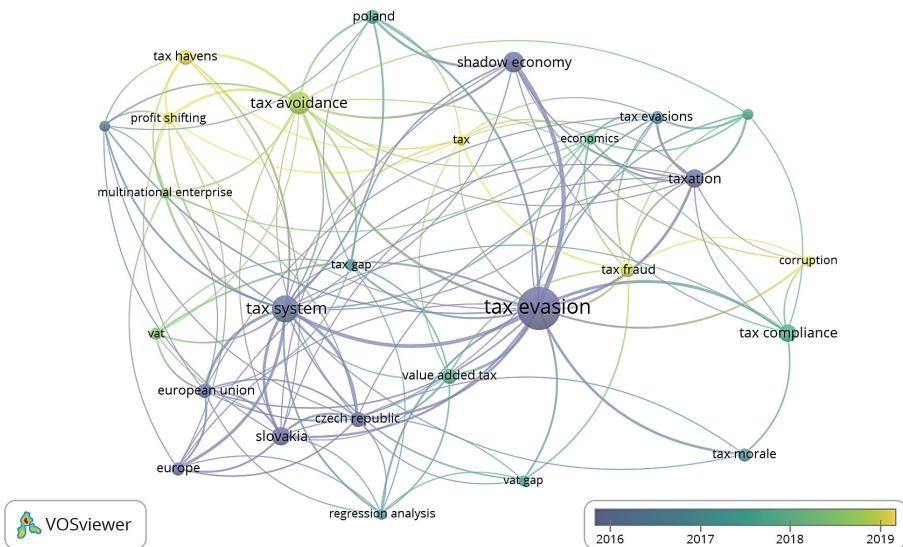


Fig. 1.3 Evolution of research areas over time

Source: own study based on the SCOPUS database, using VOSviewer.

cluster covers analyses on VAT in European countries. The second green cluster concerns the issues related to tax fraud and the morality of tax avoidance. The third blue cluster regards the link between tax avoidance and economics. The last, fourth, yellow cluster deals with issues of international business and the use of tax havens and shifting income between countries to avoid taxation. Figure 3 additionally shows the evolution of research areas over time.

As seen in Figure 1.3, it can be concluded that tax avoidance issues in the context of tax havens, corruption, and tax fraud have been the subject of research in recent years.

A keyword analysis is limited to a few words indicated by the authors (usually up to five keywords). A complete view is presented by analysing the text of abstracts, including the terms used by the authors. Figure 1.4 shows the analysis of words in the abstracts of the manuscripts selected for the study.

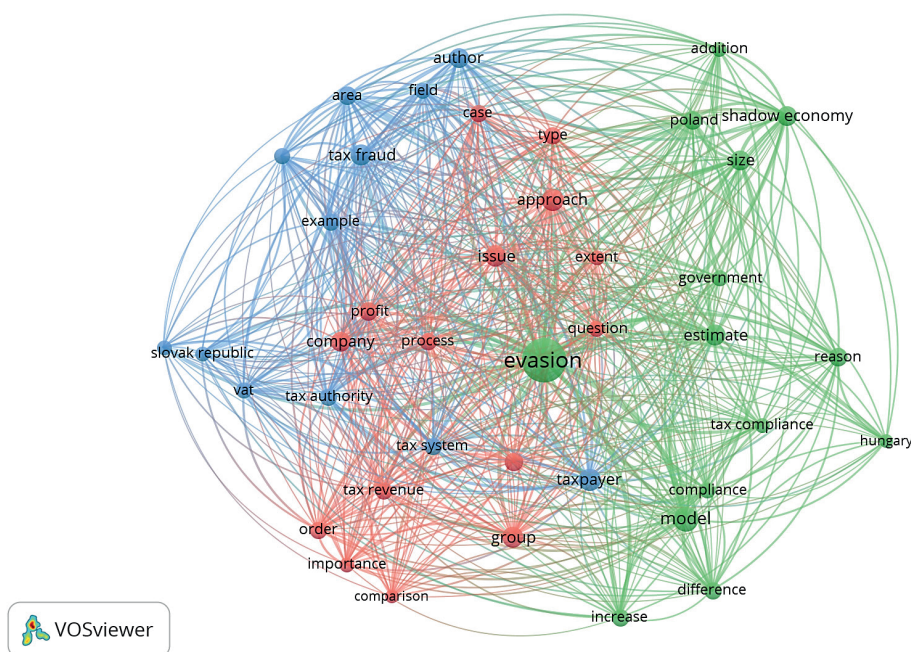


Fig. 1.4. The analysis of words in the abstracts in selected manuscripts

Source: own study based on the SCOPUS database, using VOSviewer.

Figure 1.4 shows that the words used in the abstracts form three thematic clusters. The first red cluster concerns the comparative analysis of companies' results and tax avoidance (Cobham & Janský, 2018; Janský & Prats, 2015). The second green

cluster covers tax avoidance issues at the level of state authorities and modelling tax behaviour (Androniceanu, Gherghina, & Ciobănașu, 2019). The third, blue cluster analyses the phenomenon of tax avoidance on a European scale, including the issue of VAT taxation (Majerová, 2016; Zídková, 2014).

1.3. Tax avoidance in accounting studies by researchers from the Visegrad Group and Serbia

The second stage of literature research introduces an additional criterion in selecting manuscripts from the Scopus database. The other search criteria included words directly related to company accounting. The new search, therefore, consists of the following criteria:

1. TITLE-ABS-KEY (“*tax avoidance*” OR “*tax fraud*” OR “*tax manipulation*” OR “*tax evasion*”).
2. AFFILCOUNTRY (“*Poland*” OR “*Slovak Republic*” OR “*Czech Republic*” OR “*Hungary*” OR “*Republic of Serbia*” OR “*Visegrad*” OR “*V4*”).
3. TITLE-ABS-KEY (“*accounting*” OR “*financial statements*” OR “*reporting*”).

The introduction of additional words to the search for papers allows to check which research areas were analysed by researchers from the Visegrad Group countries and Serbia in the context of tax avoidance and accounting. Figure 1.5 shows the four thematic clusters for the keywords used by the authors in their manuscripts.

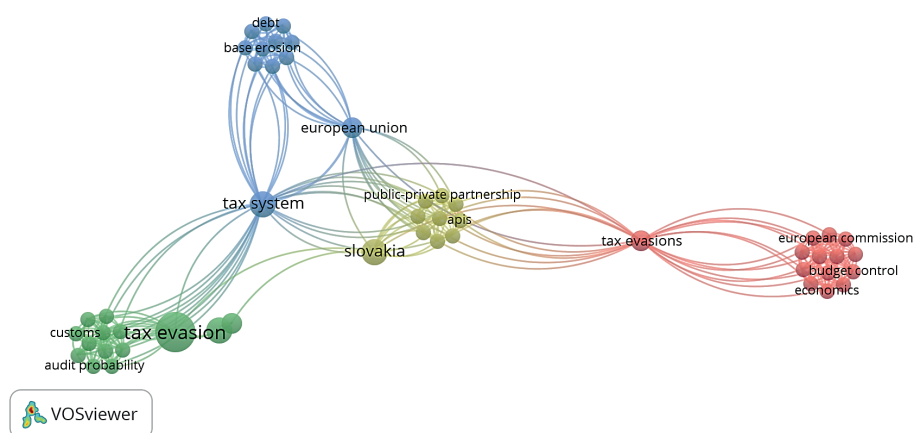


Fig. 1.5. Thematic clusters for the keywords

Source: own study based on the SCOPUS database, using VOSviewer.

In the first red cluster, topics related to the European Union and the impact of taxation on the national budgets were discussed. The second, green cluster regards tax fraud in the context of audit and decision psychology. The third blue cluster covers the tax system, including the European Union, in the context of tax scandals related to tax havens. The last, yellow cluster, deals with issues of sustainable development, including public-private partnership.

The analysis of the evolution of the topics in Figure 1.5 shows that the most current issues include tax avoidance in multinational corporations using tax havens and the mechanisms for shifting corporate income between countries. The evolution of these topics over time is shown in Figure 1.6.

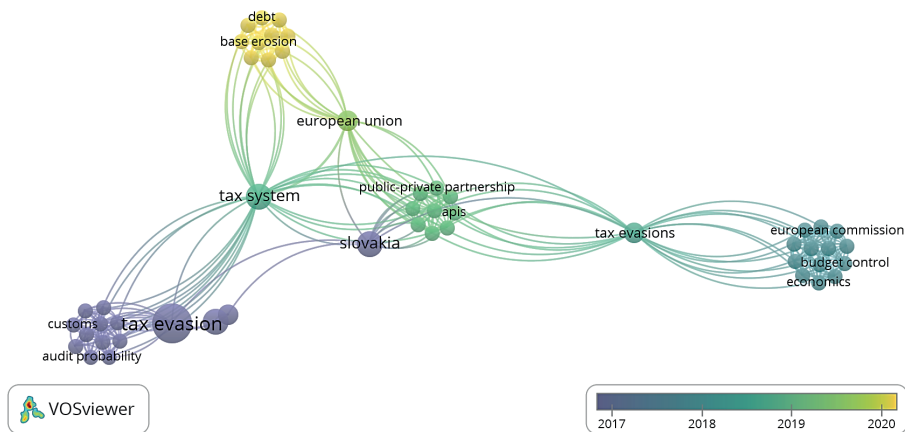


Fig. 1.6. The evolution over time of thematic clusters for the keywords

Source: own study based on the SCOPUS database, using VOSviewer.

Figure 1.5 demonstrates that the topics in the studied manuscripts covered various areas related to tax avoidance. The analysis of the abstracts (Figure 1.7) shows the existence of four thematic clusters, one of which is specifically related to accounting problems. In the yellow cluster, the words “financial statements” and “investments” are distinguished. This cluster confirms the vital role of the accounting system in providing valuable financial information, including the state of resources. Investments in management sciences and finance include both tangible and intangible assets as well as financial assets. For this reason, it is essential to analyse the resources owned by companies from the perspective of tax avoidance.

An extension of the current literature research is the introduction of a new search criterion for fixed assets (tangible and intangible). As a result of searching for

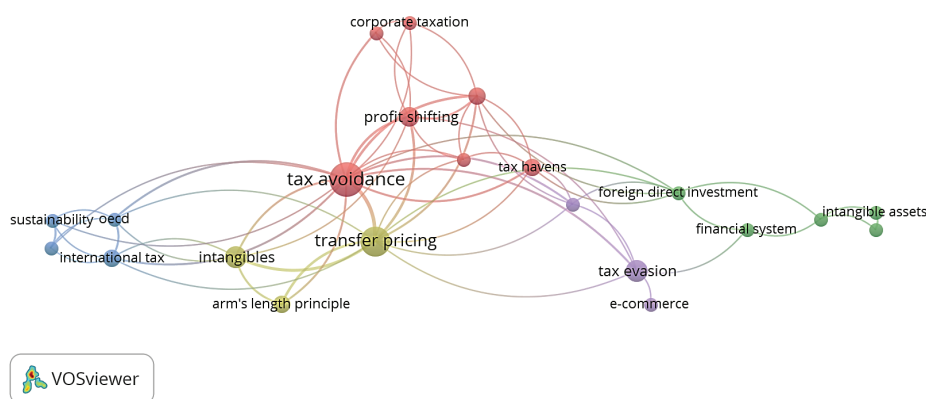


Fig. 1.7. Keyword analysis for selected manuscripts concerning tangible and intangible assets

Source: own study based on the SCOPUS database, using VOSviewer.

manuscripts meeting the new criteria (research from the V4 and Serbia, papers including words related to tax avoidance, accounting and fixed assets), only one paper appeared (Jedlička, 2021). Due to the small number of manuscripts, the research criteria were extended, and the criterion of the authors affiliation was removed, which resulted in a total of 41 manuscripts meeting the search criteria:

1. TITLE-ABS-KEY ("tax avoidance" OR "tax fraud" OR "tax manipulation" OR "tax evasion").
2. TITLE-ABS-KEY ("intangible" OR "tangible").

Figure 1.8 presents the analysis of keywords in the manuscripts selected for the study.

According to Figure 1.8, it can be concluded that the analysed manuscripts dealt with topics collected in five clusters. The first red cluster covers the issues of tax havens, profit shifting and international taxes (Janský & Prats, 2015). The second green cluster focuses on intangible assets, intellectual capital and foreign investments (Jedlička, 2021). The third blue cluster describes research on the tax system of OECD countries (Tomkiewicz & Postuła, 2020). The fourth yellow cluster represents intangible assets and the arm's length principle (Nerudová, Solilová, Bohušová, Svoboda, & Litzman, 2017; Solilová, 2010; Solilova & Nerudova, 2013). The last, pink cluster, deals with issues related to e-commerce and tax avoidance.

The analysis of the abstract shows the great interest in intangible assets. Based on Figure 1.8, intangible assets are described in two clusters: green and red, and

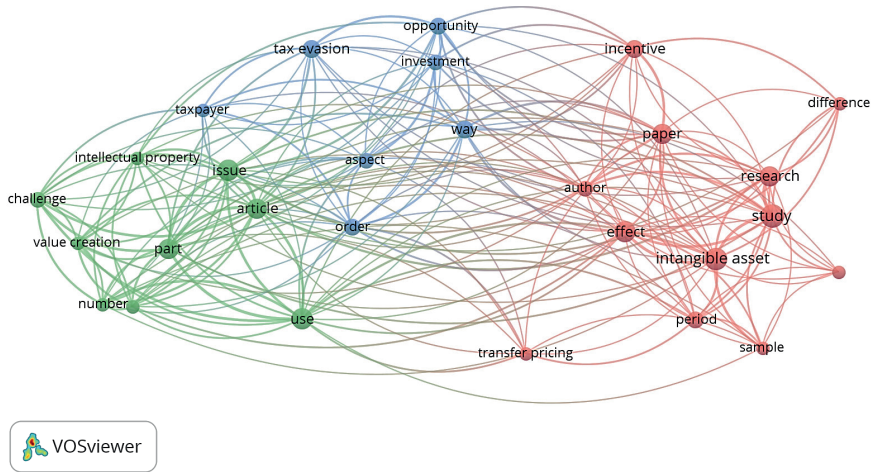


Fig. 1.8. Thematic clusters for tangible and intangible assets

Source: own study based on the SCOPUS database, using VOSviewer.

only in the blue cluster – I investments. Therefore, it can be concluded that tax avoidance applies more often to disclosed intangible assets than to tangible assets.

1.4. Conclusions

Literature analysis is a tool used in scientific research to establish the topic (which has already been researched) and the research gap. For this purpose, a multidimensional analysis of available scientific manuscripts is carried out. The essential cross-sections of the study may include the study of information about the authors (affiliations, citations), the analysis of references and cited manuscripts, and the analysis of the keywords used and the text of abstracts. This paper attempted to determine which research areas were described in publications by researchers from the Visegrad Group countries (Poland, the Czech Republic, Slovakia, Hungary) and Serbia. The searches of the content were conducted in the Scopus database and were related to words related to tax avoidance and accounting issues. Based on the research, it was noted that there is a lack of studies combining more than two authors from the V4 countries and Serbia. The research areas discussed were varied, and the analysis covered, among others, the moral aspects of tax fraud, tax avoidance techniques, and also the reporting part.

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2

Adoption of IFRS or US GAAP on intangible assets and the potential effect on the final result. A theoretical overview

Miloš Petković, Ana Obradović**

2.1. The role of intangibles in the corporate world

Adam Smith's book "The Wealth of Nations" published in 1776 (see the newer edition of 2009), regarded as a classical school of economic theory, stated that the wealth of a nation comes from tangible or physical assets only, or to be more precise, from production factors such as labour, land and capital.

Nowadays, this theory is no longer meaningful in this modern knowledge-based economy (Wang, 2008). The global economy has dramatically changed during the last thirty years. The change in the form of the transition from industrial capitalism to knowledge-based capitalism was a revolution in the corporate world. Tangible or physical assets no longer represent the core of a knowledge-based economy. Instead, intangible assets are now seen as its centre. Even though there is no particular definition of a knowledge-based economy, three main structural changes have appeared (*Guidelines for managing...*, 2002):

- 1) knowledge is seen as an object of potential trade;
- 2) the interrelation between different knowledge has improved;
- 3) Information and Communication Technologies (ICT) enable a higher diffusion of knowledge, by allowing the development of new and sophisticated networks between the subjects of knowledge.

These three structural changes completely modified the global business model of companies that was available in the previous industrial revolution. Owing to the vast development of the Internet and advanced technology, data, information and knowledge are widespread and generally available. In the process of sharing and collecting necessary knowledge, companies can improve their businesses much more easily.

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Modern society has dramatically changed thanks to the global influence of information and technological changes through favouring the globalization of the economy and innovation as key factors of global competition. It is interesting that, nowadays, the total market value of a company is composed of almost 90% of intangible assets' value, mainly because current accounting frameworks do not provide an adequate system for a company to make long-term decisions. From the agricultural age to industrial age, there were numerous changes. The best proof for this being the 'proportion evolution', which started in 1978 when intangible assets constituted only 5% of total assets, and then in 1998 when it was 72%, and finally recently, when this proportion improved even more and the interval was between 75% and 85% (Ciprian, Valentin, Mădălina, & Lucia, 2012). From the 1990s, significant changes have occurred in the asset composition structure. In the 1980s, the book value of companies started changing compared to the market value. Between 1982 and 1992, the value of intangible assets increased from 38% to 62% of the market value, but the book value decreased from 62% to 38% (Lev & Daum, 2004).

Lev (2001) stated that in the period between 1998 and 2001, the total market value of US Standard and Poor's (S&P) 500 biggest companies increased from less than 1% to over 5%, as a result of which more than 80% of a company's value did not appear in a financial report. Edvinsson and Malone (1997) explained that a limitation of financial statements in presenting a company's value and creating economic value can no longer rely on the production of physical material goods. The economic wealth of a company is driven by knowledge or information more than by the production process (Akpınar & Akdemir, 1999).

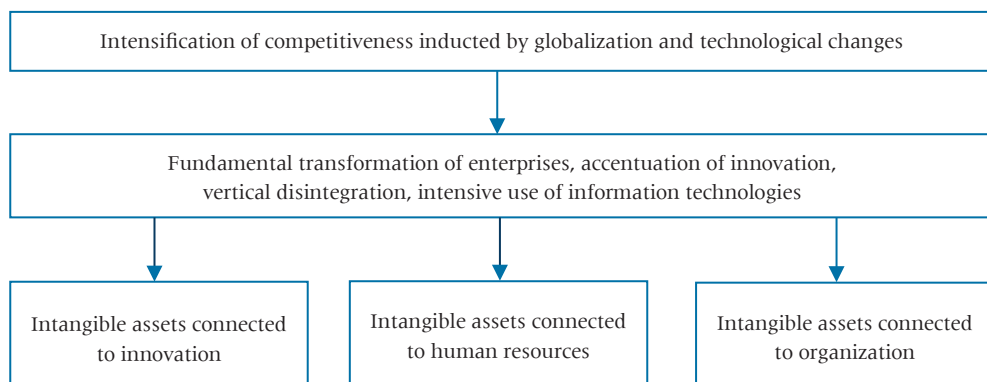


Fig. 2.1. Intangible assets' calculation

Source (Lev & Feng, 2003).

Kaplan and Norton (2004) documented that 75% of the market value of US companies comes from intangible assets, fundamentally determined based on two factors: vertical disintegration achieved through the replacement of intangible assets by tangible assets and through investments in intangible assets (Lev & Feng, 2003). According to Lev (Lev & Feng, 2003), the main figure described this as follows:

As presented in Figure 1 above, there are three types of intangible assets: intangible assets connected to innovation, intangible assets connected to human resources and intangible assets connected to organization. All these types of intangible assets are the focus of the fundamental transformation of enterprises, the accentuation of innovation, vertical disintegration, and the intensive use of advanced information technologies. The greatest intensification of future competitiveness arising from technological changes and the globalization process is based on these components (Lev & Feng, 2003).

When talking not just about the control over intangible assets, but also the protection of employees' skills, knowledge and techniques, then the problem very often occurs. Employees' specific skills, techniques or knowledge that they possess and bring with them to the company do not belong to the company, even if the company invests in their education or training on certain occasions. The main problem surfaces when the very worker who was trained leaves the company. All the invested training remains as the company's costs, without any actual returns. These investments in intangibles cannot be capitalized because of the missing contractual link between the company and the employee, the investment and the employee's skill (Lev & Feng, 2003).

Entities can very often expand their activities onto new acquisitions, research and development, maintenance, scientific or technical work, implementation of new processes, licenses, intellectual property, market knowledge, trademarks, computer software, customer lists, market shares and rights, etc. If an item based on the definition above does not meet the requirements of the definition, expenditure to acquire, or all the expenses for internal development, are seen as an expense. If an item is acquired through a business combination, then it will be recorded partly as the goodwill on the day of the acquisition (*IAS Standard 38 – Intangible Assets*, 2001).

2.1.1. Determination of intangible assets

Until now, there have been many different definitions of intangibles. Intangible can be used both as a noun and an adjective, which is why it is difficult to determine its correct definition (Sánchez et al., 1998).

There are both theoretical and professional dilemmas which relate to the meaning and the main notion of the term “intangible”, very often wrongly interpreted as some other non-tangible form, such as intangible investments, intangible capital and intellectual capital. Moreover, the literature review throughout different disciplines emphasizes several other concepts that can be seen as synonymous with the terms “intangible capital”, “intellectual capital”, “immaterial capital”, “knowledge capital” or “goodwill” (Zéghal & Maaloul, 2011).

As presented above, there are several very similar synonyms that explain intangible assets, namely: “intellectual capital”, “intangible resources”, “immaterial capital”, “immaterial resources”, “intellectual property”, “invisible assets”, “immaterial values”, “intellectual knowledge”. Based on these different terms, a review of the most important definitions by different authors of intangible assets is presented in the Table 2.1.

Table 2.1. Table of intangible assets definitions

Authors	Intangible assets definitions
Hall (1992)	Intangible assets represent a generator of advantage that transforms productive resources into property with added value.
Smith (1994)	Intangible assets include all components of a business entity that exist with current and non-current assets. Those are components that, together with current assets and non-current assets, allow for the functioning of a company, and often contribute to the profit of a company. Their existence depends on the presence or expectations of future incomes.
Edvinsson and Malone (1997)	Intangible assets do not possess physical appearance, but they are of great importance to the company.
Cañibano, Garcia-Ayuso and Sanchez (2000)	Adjective that accompany different concepts such as resources and investments.
Granstrand (2000)	Intellectual property is a property that is directly related to the creativity, knowledge and identity of an individual.
Brennan and Connell (2000)	Capital based on knowledge in the company.
Harrison and Sullivan (2000)	Knowledge that can be converted into profit.
Lev (2001)	Intangible assets encompass the rights of future benefits that do not have physical or financial substance.
Gu and Lev (2001)	Intangibility can be defined as a generator of value (research and development, promotions, information technology and capital expenditures and practice in human resources).
Kristandl and Bontis (2007)	Intangible assets represent a company’s strategic portfolio of resources that will enable a company to create a sustainable value.
Itami and Roehl (2009)	Intangible assets consist of invisible property that is composed of a wide range of activities, such as: technology, clients trust, brands, corporate culture and managerial skills.

Source: own study.

There is a further explanation about the difference between intellectual capital and intangible capital. Based on the in-depth exploration of literature, intellectual capital is always seen just as a subset of intangible capital when “intangible” is related to an asset without physical substance and with certain future economic benefits (Hunter, Webster, & Wyatt, 2005).

2.1.2. Characteristics of intangible assets

Intangible assets have two main characteristics, which also differentiate them from tangible and financial assets, such as (Warfield, Weygandt, & Kieso, 2008):

1. **The lack of physical existence.** Intangible assets encompass only the legal rights and privileges granted to a company to use them. Based on these rights and privileges, a company generates benefits.
2. **They are not financial instruments.** Financial assets also do not represent physical substance, but when compared to intangibles, financial instruments have value because they can claim, or have the right to receive cash or cash equivalents in the future.

Intangible assets can be **purchased** or **developed internally**. Intangibles bought from another organization are recorded in financial statements as cost. Cost includes all costs of acquisition and expenses necessary to make intangible assets ready for usage. Typical costs are legal fees, purchase price and other expenses. Internally created intangibles can be both expensed and capitalized. From the financial accounting perspective, the crucial aspect is to clarify whether to expense or capitalize. If it is expensed, all the expenses will be recorded in the profit and loss account. If it is capitalized, an item must fulfill several restrictive requirements; notably, it must be separable and reliably measurable. Intangible assets can have a **limited life** or an **indefinite life**. Limited-life intangibles have a precise period when they can be used. These assets must be amortized or systematically allocated to the costs of intangible assets. After that period, intangible assets must not be used anymore, and should be excluded from the property and annual report of a company. On the other hand, indefinite-life intangible assets are all intangible assets without a legal, regulatory, contractual or any other factor that limit the useful life cycle. There is no foreseeable limitation period for these intangible assets over which the asset will provide cash (Warfield et al., 2008).

Items seen as intangible assets are included in the balance sheet together with long-term assets or non-current assets and further explanations are given in the notes of the financial statements. However, there are no further explanations even in the notes of financial statements as to how these assets have been produced, made or acquired. There is no evidence of expenses in the profit and

loss account that is related to some of the intangible asset internal development. There is nothing else inside the balance sheet apart from the intangible assets that already meet all the necessary criteria. Thus here is one very problematic part for all those individuals who want to see the efficiency of investing into some of the intangible assets (Caddy, 2000; Harvey & Lash, 1999).

According to the study published by the Center for Excellence in Accounting and Security Analysis in 2009, there are two main preliminary points regarding intangible assets (Penman & May, 2009).

1. An intangible asset has a speculative characteristic. Intangible assets are not only without physical substance, but they are also not identifiable, such as contracts or customer lists which can help a company generate benefits. Legal rights, patents and copyrights or brands are exceptional because of that. However, the difficulty is seen in “customer relationships”, “organizational capital”, “human capital”, “knowledge assets”, and similar because they are not specific and conceptualized enough, which makes it hard for their market to be defined. The market price of these assets is highly speculative, subjective, non-realistic. The market price is usually formed based on the personal perspective of the owner. When a speculative value enters the financial statement, problems occur because a non-realistic value can create an imbalance in the reports.
2. Intangible assets are used jointly. Most of the intangible assets generate an inflow of cash or cash equivalents, and they do so jointly with some other tangible or intangible assets. Different intangible assets, such as brands, marketing campaigns, and distribution networks work together with other assets, and it is impossible to imagine their work independently. For instance, “knowledge capital” works together with productive machines and processes, marketing and management, but the cash flow streams only one cash inflow. Additionally, “organizational capital” makes it possible for many different company’s assets to be used jointly. An organization can be seen as one big asset composed of these several smaller tangible, intangible and financial assets that coordinate together and are a source of future value.

According to Lev (2005), intangible assets differ from other types of assets, tangible and financial, in two major aspects: partial excludability and non-marketability (Lev, 2005).

When an individual owns a building or its share, he/she can completely collect all the related benefits from it without any difficulties, yet owners of some intangible assets are in a completely different situation. Even though an individual owns an intangible asset and it will expire in 20 years, competitors may explore and develop

similar patents or an intangible asset before that time. This is problematic from the cash and income perspectives because it is necessary to have stable cash inflows in the company in order to value intangibles. The consequence of unstable cash flows is not having tightly regulated property rights over intangibles as they should be.

Most of the tangible and financial assets can be easily traded on a market, which is not the case with intangibles. There are transactions in some intangibles, precisely in the licensing and sales of patents, but generally, these transactions are not transparent and disclosed publicly. The reason for their not being publicly disclosed is due to unresolved and precisely defined property rights. The non-tradability of intangible assets represents a serious issue for investors and decision-makers because there are no particular valuation methods. The valuation process is only possible when comparing values between highly similar intangible assets, and, even then, it is not sufficiently correct. This characteristic of intangibles has created problems to accountants mainly because they cannot be seen as assets in the balance sheet of financial statements.

Taking into consideration that intangible assets are highly risky, with uncertainty in cash incomes, why are they so important today? The answer can be found in two main explanations, the intensity of business competition and the commoditization of physical assets. The global market has created competition all around the world. Companies from different sectors operate and compete with similar companies worldwide. In such a global environment, it is highly important to be continuously innovative. Innovations are allowed and necessary not only in product and service matters, but also in cost-efficiency mechanisms. The necessary level of innovation can be achieved through investments in intangible assets, such as research and development focused on creating a new product, training employees, developing new brands or marketing campaigns, etc. As the competition pressure gets stronger, innovations should get better.

The second answer is the commoditization of physical assets, which means that all competitors can allow themselves to have equipment, production machines, tools or advanced technology. Technology and equipment are widely available to all competitors who are able to pay for them. This is one of the most important differences between intangible and tangible assets. Tangible assets are not so unique today as they used to be in the industrial era when only the biggest companies could afford the most sophisticated tools and equipment. Nowadays, the situation has changed, and they are available more or less to all. The biggest advantage can be achieved through intangibles (Lev, 2005).

The attention to intangible assets and their importance is expressed mainly by the following constituents (Lev, 2001):

1. Managers and their shareholders – investments in intangible assets are associated with the high cost of capital. Managers are interested in alleviating the excessive cost of capital.
2. Investors and capital market regulators – investors are interested in information obtained from insiders and outsiders of companies.
3. Accounting standard setters – the lack of an accounting standard regarding intangible assets results in financial statements that do not follow changes in the current business environment.
4. Policymakers – the lack of standards and financial statements require public policy makers to assess fiscal policy, support innovations, or protect intellectual property.

Lev and Daum (2004) addressed two main issues about intangible assets; first, intangible assets by themselves cannot create value or generate profit. They need to be combined with other production factors. They require efficient support and systems in order to create future value. Corporate performance reports must provide a much more efficient view that will allow investors and managers to follow the value creation process; second, the value of intangible assets is related to the future, not to the present. Intangible assets represent the possibility for future potential growth and profitability. This is achievable only with a more dynamic system of reporting that will replace the current, traditional performance management system.

Based on the book “Unseen Wealth – Report of the Brookings Task Force on Intangibles” published by Blair and Wallman (2001), there is a much more comprehensive distinction between three major categories of intangibles:

1. There are two main sub-categories of intangibles for all intangible assets for which the market already exists and property rights are clear, and these are: first, patents, brands, copyrights, and second – contracts, databases, licences and business agreements.
2. When there are no legal and well-defined rights, a group of intangibles for all intangibles that are controlled by a particular company is composed of: the R&D process, reputational capital, business processes and business secrets.
3. When both market and legal and property rights do not exist or are very difficult to identify for all the other intangibles, a group of intangibles consists of human, structural and relational assets. All of these assets belong to intellectual capital as its main components (Bontis, 1998).

Ashton (2005) gives a further explanation of the guiding principles for Blair and Wallman's (2001) classification of intangibles. This classification shows the level of difficulty to record them in official financial reports and to treat them properly, not only for accounting standard-setters but also for the managements of companies. The last third category causes the biggest problems mainly because as yet there are no accounting standards for them, whereas the first and second group of intangibles are already well-determined (Ashton, 2005).

2.2. IFRS on intangible assets

International Financial Reporting Standards (IFRS) arose as the need to establish unique and generally accepted accounting standards. IFRS standards are issued by the International Accounting Standards Board (IASB), whose task is to adopt new standards and make decisions on repealing or amending the existing standards. The term International Financial Reporting Standards includes International Accounting Standards (IAS), International Financial Reporting Standards (IFRS) and Interpretations provided by the Committee for Interpretations of International Financial Reporting (Petrović, 2020). According to (Bao, Lee & Romeo, 2010; Ciesielski & Weirich, 2008) the main goal of the IASB is to develop applicable, understandable, high-quality standards that will be applied globally.

Accounting standards are a set of rules and principles that companies should follow when preparing, compiling and publishing their financial statements. Adherence to the prescribed standards enables the standardized presentation of a company's financial condition and achieved business performance (IFRS).

The development of the above-mentioned standards increases the transparency, comparability of companies at international level, increases efficiency, improves the quality of information used by investors and other stakeholders for risk assessment, but also allows the possibility of achieving the global comparability of information based on different economic decisions.

Since intangible investments are the focus of this paper, the treatment of intangible assets from the aspect of IFRS is presented and analysed below.

International Accounting Standard 38 (IAS) defines an intangible investment as a non-monetary asset that is identifiable even though it has no physical characteristics. When defining intangible investments within IAS 38, three conditions for the recognition of intangible assets are noted, and they are as follows (Petrović, 2020):

1. Possibility of identification.
2. Asset control.
3. Economic benefits of that asset.

An asset is considered to meet the conditions of identification if it is separable in the sense that it can be set aside or separated from the entity and transferred, leased, sold, licensed or exchanged together or separately with other assets or liabilities. The very definition of intangible assets requires that they are identifiable and that there must be a possibility to clearly distinguish them from goodwill. An asset meets the conditions of identification if it arises on the basis of various legal rights or on the basis of a contract, regardless of whether those rights are transferable or separable from the economic entity or some other rights and obligations. From the aspect of control over intangible investment, an economic entity has control over it if it can use the economic benefits that would flow from the asset and if it is able to limit access by others to that asset and the benefits that it brings. The future economic benefits from intangible investments can be reflected in the income that flows to the business entity on the basis of that asset, but also in the potential reduction of future costs through the use of intellectual property.

The significance of IAS 38 comes from the fact that in the last 20 years there has been an ongoing transformation from traditional mass production to a knowledge-based economy and that intangible investments have an increasing share in the assets of companies. The basic characteristics of intangible investments derive from their definition and relate to the fact that intangible investments are not financial instruments, do not have a physical feature and the purpose of the asset is not important to be classified as an intangible investment. Taking into account the criteria for classifying an asset as intangible, one can cite several examples of intangible investments: licences, patents, concessions, computer software, franchises, trademarks, trade names, databases, prototypes, chemical formulas, recipes, etc. (Petrovic, 2020).

Accounting in terms of the recognition of intangible investments is defined as the process of determining whether the amounts of investments for their creation and acquisition will be treated as an expense in the income statement or as an intangible investment and presented in the balance sheet. For the recognition of an item as an intangible asset, IAS 38 requires the entity to demonstrate that the item first meets the very definition of an intangible asset, as well as meeting the recognition criteria. Therefore, an intangible asset is recognized if, and only if, the cost of the asset can be measured reliably and if it is probable that future economic benefits, which are attributable to the asset, will flow to the entity.

The valuation of intangible investments during the introduction into the accounting records of the entity is performed at the cost of procurement. Exceptions to the initial valuation at the cost of procurement occur in situations where it is an acquisition within a business combination, in the case of acquisition with the help of state allocation and in the case of acquisition through exchange. IAS 38 regulates the initial recognition and valuation of several ways in which intangible assets are acquired, namely (Petrović, 2020):

- private acquisition,
- acquisition through state allocation,
- acquisition as part of a business combination,
- creation within an economic entity,
- exchange of property.

According to IAS 38, two models are provided for the valuation of intangible investments after the initial recognition: the procurement cost model and the revaluation model.

The procurement cost model. If this model is applied, after the initial recognition an intangible investment is valued according to the procurement cost less accumulated depreciation and accumulated impairment losses. The procurement cost model for the subsequent valuation of intangible investments involves the calculation of depreciation at the end of the accounting period in the event that the asset has a limited useful life in the economic entity. Hence the calculation of depreciation is performed for intangible investments with a limited useful life in the economic entity. However, for assets with an indefinite long useful life in the economic entity, depreciation is not calculated. The estimation of the useful life of intangible investments is performed by the economic entities themselves and in accordance with this it is determined whether a certain intangible investment has a limited or unlimited useful life. When it comes to the depreciation calculation, according to IAS 38, the choice of the method for the depreciation calculation is made by the economic entities themselves, and the following methods of write-off can be used: proportional write-off, degressive write-off and functional write-off. The choice of method for calculating the depreciation of intangible investments should be such as to provide the most accurate calculation of depreciation and it is allowed to use different methods of calculating depreciation for different intangible investments. Changes in the estimated remaining useful life of an asset, as well as changes in the method for calculating the depreciation of an asset, are considered to be changes in the accounting estimates. The amount of the calculated depreciation of an intangible investment is recognized as an expense unless the economic benefits from the intangible investment are incorporated into another asset.

The depreciation calculation is discontinued on the earliest of the following dates: when the asset is disposed of or expended, when its present value becomes equal to its estimated residual value, or when it is reclassified to a fixed asset intended for sale (Petrović, 2020; The Ministry of Finance of the Republic of Serbia, 2020).

The revaluation model — when this model is used, intangible investments are subsequently measured at their fair value less subsequent value adjustments and accumulated impairment losses. According to IAS 38, the revaluation of intangible investments is determined through an active market for those types of intangible investments. In the event that there is no active market for an intangible investment, it is not revalued, and the valuation is performed at procurement cost less value adjustment and impairment losses. How often revaluation will be performed depends on how much the fair value of the asset changes. When the fair value of an intangible investment deviates significantly from its book value, it is necessary to revalue it. If the value of the asset has increased as a result of the revaluation, the increase is recognized in the total other result and is accumulated in equity, as a revaluation reserve position. The increase is recognized in the income statement in the amount in which it represents a reversal of the decrease based on the revaluation of that asset that was previously recognized in the income statement as an expense. On the other hand, if the revaluation results in a decrease in the book value of the asset, the decrease is recognized in the income statement. A decrease is recognized in the total other result up to the amount to which there is a revaluation reserve regarding that asset (Petrović, 2020; The Ministry of Finance of the Republic of Serbia, 2020).

2.3. US GAAP on intangible assets

Generally Accepted Accounting Principles (US GAAP) represent a set of generally accepted principles adopted and promoted by the Financial Accounting Standards Board (FASB) — an organization recognized by the US Securities and Exchange Commission. The FASB is financially supported by the FAF (Financial Accounting Foundation) which selects FASB members. FASB members are representatives of various organizations that deal precisely with accounting standards and must leave their current employment and work only for the FASB (Fosbre, Kraft, & Fosbre, 2009). US GAAP are applied mainly in the United States, and US companies operating in Europe should adjust their financial statements as if they were prepared in accordance with IFRS. These standards are recognized by various organizations such as the American Institute of CPAs (AICPA) and the State Boards of Accountancy. The main task and aspiration of the FASB is to establish new and improve the existing standards in order to provide information to all users of financial statements, but also improve their education in terms of better and more efficient understanding and application of these standards (FASB, n.d.).

The standard which deals with intangible assets is the Accounting Standards Codification-ASC 350, Intangibles – Goodwill and Other, and consists of the following five subtopics (Flood, 2019):

1. ASC 350-10, Overall.
2. ASC 350-20, Goodwill.
3. ASC 350-30, General Intangibles Other Than Goodwill.
4. ASC 350-40, Internal-Use Software.
5. ASC 350-50, Website Development Costs.

According to (FASB, 2019), two criteria are listed, of which at least one needs to be met in order for an intangible asset to be identified. Both of these criteria are identical to the criteria prescribed by IFRS/IAS. The first criterion refers to the fact that intangible investment arises from contractual rights or other legal rights, regardless of whether those rights are transferable or separable from the business entity or from other rights and obligations. The second criterion concerns the separability of an asset in the sense that it can be set aside or separated from the entity and transferred, leased, sold, licensed or exchanged together or separately by a related contract, identifiable assets or other liabilities.

The initial recognition of intangible investments acquired individually or with a group of other assets is based on their fair value. Companies can purchase certain intangible investments, however the capitalization of internal development costs, maintenance costs or renewal of intangible investments is not allowed (Flood, 2019). It is possible to capitalize only costs incurred in the development phase when the software is developed for internal use (Nwogugu, 2012). Flood (2019) states that it is necessary to take into account the following factors in order to determine the useful life of an intangible investment:

- various economic factors such as competition, technological progress, demand, industry stability, legal restrictions, potential changes in distribution channels, etc.;
- the expected use of funds;
- the expected useful life of another asset or group of assets to which the intangible asset's useful life may be related;
- previous experience of the company in similar agreements;
- provisions of contracts, regulations or laws that may in any way limit the useful life of intangible investments, etc. (Flood, 2019).

If none of the potential factors affect the limitation of the useful life of an intangible investment, it is considered to be unlimited. For identifiable intangible assets (patents, licenses, franchises, trademarks, copyrights, etc.), depreciation is

calculated over the expected useful life of that intangible investment. The value of an intangible investment at the end of its useful life less disposal costs represents its residual value (Flood, 2019).

2.4. Differences and similarities between IFRS and US GAAP

The difference between IFRS and US GAAP exists in the process of capitalization. If a company wants to have a recognized and capitalized developed intangible asset, it must have substantial research and development expenses accepted by International Accounting Standard (IAS) 38 to create an intangible. Based on IAS 38 in the development phase, there are six main conditions that should be met if a company wants to capitalize and include an intangible asset inside the balance sheet (*IAS Standard 38 – Intangible Assets*, 2001):

- I) the technical feasibility of building intangible assets, so that it will be ready for usage or sales;
- II) the intention to build intangible assets for usage or sales;
- III) the ability to use or sell intangible assets;
- IV) the possibility to generate future economic benefits based on the existence of market demand;
- V) the availability of adequate technical, financial and other resources to complete the development of intangible assets;
- VI) the ability to precisely measure all expenditures attributable to that intangible asset.

According to Ding et al. (Ding, Stolowy & Tenenhaus, 2004), the capitalization process of R&D expenses is possible in France, but only under certain conditions. This study proved that the capitalization of R&D is a risky process, in the sense that they belong to the group of high technology industries, or have a higher beta coefficient, which is related to the tax of rentability on the market.

Triki-Damak and Halioui (2013) explained that in the French setting, it is up to the management to decide whether to expense or capitalize. If the conditions from IAS 38 are met, then the capitalization process is certain. The only difference between IFRS/IAS and GAAP is the obligation to capitalize R&D expenses. GAAP do not accept the capitalization of R&D expenses, whereas IFRS/IAS allows it under previous conditions.

A significant number of scientific papers are devoted to discussing the fundamental differences between IFRS and US GAAP standards. The most significant difference cited in several different papers relates to the fact that IFRS are based on principles,

while US GAAP are more rule-based (Sanko & Koldovskyi, 2017) According to (Fosbre et al., 2009), the basic accounting principles are the same when comparing IFRS and US GAAP, however their interpretations may differ.

Unlike IFRS, US GAAP make a distinction in certain areas such as software development costs, and provide specific guidance depending on whether the software is intended for internal use or for resale (PWC, 2014). This means that US GAAP prescribe separate guidelines for the treatment of software development costs intended for sale to third parties, as well as specific guidelines for the treatment of the same group of costs in cases when the software is intended for internal use. According to (PWC, 2014), development costs that were previously recognized as expenses cannot be capitalized in a subsequent period.

According to IFRS, when talking about the treatment of acquired research and development assets, they are capitalized if they are likely to bring economic benefits in the future. Yet, according to U.S. GAAP, acquired research and development assets are capitalized if the asset has an alternative use in the future, and the capitalization also depends on the type of acquisition – business combination or asset acquisition.

As stated by IFRS, an impairment loss of an intangible asset is calculated by comparing the recoverable amount with the book value, with the recoverable amount being higher than an asset's net fair value or its net use value. In the case of US GAAP application, the impairment of intangible assets is calculated by comparing fair value with the book value (PWC, 2014).

According to (Sanko & Koldovskyi, 2017), when assets are impaired under US GAAP, the treatment is permanent, but impaired assets under IFRS can be revalued. In line with IFRS, when it comes to revenue recognition, it is usually recognized when the asset is sold. Revenue is often deferred in US GAAP until the earnings process has been completed and expenses have been recorded and matched against generated revenue (Fosbre et al., 2009). The authors (Bao et al., 2010) confirm that according to IAS 38, fair value is allowed for the revaluation of intangible assets, while according to US GAAP it is not allowed.

2.5. Relation between intangible assets and final result

This section introduces the background, motivation, encouragement and significance of the study. In the global economy based on knowledge, intangible assets often make up to 80 % of a company's value. The transformation of intangible assets and resources into a tangible result is a new way of thinking for most companies. Based on the study by Volkov and Garanina (2007), only from 6% to 30% of

a company's value belong to tangible assets. Due to the importance of intangible assets, companies invest about 50 % in the sphere of intangible assets only, namely in research and development, personnel development, and infrastructure (Fuller, 2002). Van Ark et al. (Van Ark, Hao Corrado, & Hulten, 2009) found that investments in intangibles accounted for about 25% of labour productivity growth in EU countries from 1995 to 2010. In order to manage intangible assets properly, it is very important to measure them in the right way. The treatment of intangible assets in a company's accounts has changed drastically. The main decision relates to capitalizing investments in intangibles as this can transform knowledge into a concrete value. However, this is where the greatest difficulty lies because organizations must measure these investments consistently and systematically over time (Belo, Linc, & Vitorino, 2014; Bloom & Van Reenen, 2010).

According to Penrose (1959), a company is not only an administrative organization but also a set of resources: productive and human. Resources should be included in the production process and transformed into products or services. Outputs are the functions and results of experience and knowledge a company has. This philosophy started to develop in the 1980s and serves as a confirmation of the statement made by Nonaka and Takeuchi (2007) that only those companies that create knowledge can be successful in today's world. Based on the study developed by Marr (2004), a company's capability is to realize and achieve greater future performance based on the knowledge that lies within it. What differentiates companies is the specific and unique knowledge. Firms with more knowledge will be more powerful and competitive (Marr, Schiuma & Neely, 2004). A knowledge society will be dependent on intangible capital because knowledge and information have become the economy's primary raw material and most important outcome (Stewart, 1998). Drucker (1993) wrote that when entering a knowledge society "the basic economic resource is the knowledge" (see also Nonaka & Takeuchi, 1995; Reich, 1992; Toffler, 1991; Quinn, 1992).

Nakamura stated that investments in intangible assets in the corporate sector in 2000 amounted to \$1 trillion. Half of this amount was used for research and development and software development. The other part was in other intangibles, such as brands, human resources and organizational processes (Holtham & Youngman, 2003). Literature's interest in investments in intangible assets has shown an upward trend. It is widely accepted that intangible assets are a crucial part of achieving competitive advantage (Barney, 1991). Only a few studies have explored the factors that lead companies to invest in intangibles. In most papers, intangibles have been used as given and already determined, not as explanatory variables. Determining what stimulates companies to invest in intangible assets can be very important for both managers and decision-makers, mainly because

this can help identify variables that differentiate high from low performing companies. Based on the study produced by Arrighetti (2014), there are three confirmed factors that intensify investments in intangible assets, namely:

- **size of a company** – this is a very important factor for investing in intangibles. Regardless of the industry a company belongs to, it is much easier for large companies to exploit economies of scale in intangible asset accumulation than it is for the smaller ones (Dierickx & Cool, 1989). Larger companies can protect their intangibles more successfully than smaller companies, which can motivate them more to invest and develop new ones. A large share of investment uncertainty is also related to smaller companies rather than to larger companies (Ghosal & Loungani, 2000);
- **human capital** – several studies have confirmed that human capital affects a proportion of the amount of investments in intangible assets (Abramovitz & David, 2000; Galor & Moav, 2004). Human capital is the formal education that every employee has and brings to the company before hiring. Human capital consists not only of formal education, but also of all skills and techniques that an employee possesses (Barney, 1991; Nerdrum & Erikson, 2001). It is composed of all the abilities of an individual that will come into the organization, but will never belong to the organization (Bontis & Fitzenz, 2002);
- **past level of intangible capital intensity** – organizational complexity is another factor that can affect the process of intangible assets accumulation. The stock of intangible assets directly influences the increase of organizational *capital* (Bontis, 2001; Kaplan & Norton, 2004; Lev & Radhakrishnan, 2003).

Intangible assets are inert themselves, they do not generate profits or create value. Investing in training will only lower costs and increase revenues. However, it is possible to have a much more comprehensive result when such improved processes and efficient information systems are combined with other factors. Without these tools, the value of intangibles disappears much quicker than the value of physical assets. With proper information systems and organizational structure, it is possible to transform tangible and intangible assets into bundles of assets that will further realize sustainable competitive advantage and profitability (Lev, 2002).

Nakamura (2001) uses three approaches in estimating the corporate sectors' investments in intangible assets:

- the first approach is based on investments in research and development (R&D), software, brand development and other intangibles;
- the second approach is focused on salaries and wages paid to “creative workers”, who generate company's intangible assets;

- the third approach examines the changes in the operating margins of companies. The company's operating margin is the difference between sales and cost of sales.

Investing in intangible assets is in itself a little risky. For instance, when a company invests in employees and their training or education, another company very often benefits from it when employees change their employment. The knowledge, skills and techniques of an employee stay with them even though the employee has changed company. A company that invests in an employee cannot limit the benefits of other future employers (Benkraiem, 2008). That is because companies do not have the means to keep and retain their skills or knowledge. Even in the case of patented inventions, there is a substantial benefit for non-owners which is called "spillovers" (Lev, 2001).

2.6. Conclusions

Knowledge-intensive companies have gained competitive advantage in the knowledge economy. Intangible assets are seen as the main value driver and an important factor for improving not only corporate financial performance but also a company's market value (Brennan & Connell, 2000; Petty & Guthrie, 2000; Tunc Bozbura, 2004). To date, various researchers have added intangible assets as a production factor, together with land, labour and financial capital (Goh, 2005; Lev & Daum, 2004; Petty & Guthrie, 2000). The use of advanced information technology and information in business management has resulted in the rise of the knowledge economy.

This section's conclusion is that there is not a single definition of an intangible asset that can explain the term in more detail. However, definitions by different authors demonstrate that intangible assets have intangibility components and forms and that they are a source of value creation, and can enhance value creation when combined with other organizational resources. A modest attempt has been made in this study to examine whether the performance of intangible assets is related to a company's financial performance, which is not only influenced by the performance of intangible assets but also by certain factors at both organizational and industrial level.

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3

Comparability of financial statements in the area of intangible assets in different financial reporting systems

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3.1. Introduction

Intangible assets represent a significant part of fixed assets in many accounting entities. However, the values of recognized assets on balance sheets show that the numbers are very far from reality in many national adjustments, and that the financial statements in this area are not comparable, even between entities reporting in accordance with international accounting standards. There are significant differences between national accounting regulations in terms of the conditions under which intangible assets can be recognized on the balance sheet and how they should be measured and amortized. According to findings from numerous researchers, the level of unrecognized intangible assets and the potential distortion of information in financial statements varies depending on the financial reporting system used. Many of the intangible fixed assets that bring economic benefits to a company are not recognized in the financial statements at all – often due to conservative accounting approaches and the application of the prudence principle in national accounting rules. According to some sources, the ratio of recognized intangible assets to total assets represents less than 2% on average, although the actual value of intangible assets used is significantly higher. Handy (1989) states that the value of intangible assets is three or four times the book-value of companies and studies by Lev (2001) suggest that intangibles represent between 60% and 75% of the total assets of a company. Many authors (Elad, 2015; Jaafar & McLeay, 2007; Nobes, 1983) group national accounting regulations into several homogeneous groups. One of the frequently used groupings is the division into two large groups – the English or Anglo-American system and the Continental system. Each of the systems has been evolving for decades and differs in many essential attributes, for example how the financial

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statements are arranged. This also relates to who the main user of the financial statements is, especially regarding balance-sheet statement and income statement, and who provides companies with resources. While in the Anglo-American system is more common to use resources through stock exchanges (Anglo-American accounting is oriented towards the decision-making of shareholders), in countries with the continental system, companies are more likely to use bank loans. This is also reflected in the form of prepared financial statements that should provide relevant information for these users. Whereas in the Anglo-American system, the horizontal arrangement of individual balance sheet elements prevails and the profit and loss statement is rather compiled by function, in the continental system the balance sheet is rather compiled in a horizontal arrangement, and costs and income are presented by their nature. However, from the viewpoint of the value of the fixed assets reported and the amount of P/L, the major role is played by how the criteria for recognizing of intangible assets are set, how the assets are measured (especially if fair value is utilized) and if and how consistently the prudence principle in valuation is used. The Anglo-American system is less concerned about prudence in general than the continental one, and it is more willing to go beyond the legal form. In addition to the above-mentioned factors (providers of capital, national culture, legal system), the taxation system also plays a very important role. In some countries, the taxation rules and financial reporting regulations are strongly interrelated, while in others they are totally separate. In common law countries, the tax and accounting rules are kept separate, while code-law countries, on the other hand, tend to have common tax and financial reporting regulations. Many authors divide tax systems into three groups: the first system refers to those countries where the tax rules and the financial reporting rules are kept entirely, or very largely, independent of each other. In the second type there is a common system, with many of the financial reporting rules which are often used also by the tax authorities, this means that tax authorities do not develop detailed rules for the calculation of taxable income, they are completely or mainly based on reported earnings as the basis for calculating tax duties. The third system prevails in European countries; it operates in countries where a common system exists with many of the tax rules also being used for financial reporting purposes. This means that tax rules are equal to the accounting systems, and the tax authorities set detailed rules which have to be followed in the external financial statements. Understandably, in an accounting system that is significantly affected by tax rules it cannot be expected that financial statements provide a true and fair view of an entity's financial position and performance to users for their economic decisions. One of the main goals of the state is to establish rules that lead to maximizing tax revenues and minimizing expenses in order to achieve higher tax revenues. At the same time, it provides the incentive to the managers of a company to choose

the methods which minimize their tax obligations. It can be also achieved by selecting those methods which expense costs instead of recognizing them as assets with their gradual depreciation or amortization. Individual national accounting systems carry a different level of risk of using techniques known as creative accounting. In this study, the creative accounting is understood as making or interpreting accounting policies falsely with the objective of misusing the accounting techniques and standards, set by the accounting bodies with the aim to influence the decisions of users. Blake and Amat, (1998) argue that there are four ways in which creative accounting may arise. Firstly, by the exercise of choice between permitted alternative accounting policies. Secondly, by applying bias in the making of accounting estimates – for example in the estimation of asset life for depreciation purposes. Thirdly, by structuring transactions in such a way as to manipulate the results in the financial statements. Finally, by timing genuine transactions so as to manipulate accounting. These risks are also common in the field of intangible fixed assets, often as loopholes, generalities or ambiguities of the accounting regulation used by accounting entities. Svabova et al. (Svabova, Kramarova, Chutka & Strakova, 2020) see earning management as a very common technique in creative accounting. A minor example of such an option which is in line with the accounting regulation in the Czech Republic (it can be therefore included in group 1), is the issue of **forest management plans accounting and reporting**.

According to Decree 500 on Accounting (explaining certain provisions of the Czech Accounting Act) – § 6(9) an entity may choose to recognize items such as an energy audit, a forest management plan, a river basin management plan or an energy audit on its balance sheet (as a part of intangible assets). Any company managing forests of more than 50 hectares, on the basis of Czech legislation must draw up a forest management plan. The costs incurred for its creation can reach a value of several hundred thousand to millions of CZK, and its usability is usually up to 10 years. The accounting entity can therefore choose between two possible treatments that respect the matching principle, namely the capitalisation of these expenditures on intangible assets (with their subsequent amortisation over the useful life, accounted as a part of operating expenses) or the other option – the recognition of an asset in another part of the BS statement – in the form of prepaid expenses. This account is then gradually dissolved, i.e. recorded into operating expenses for the time of use in the management plan. It is clear that in the first case the amount of **fixed** assets is affected, in the second case the **current** assets are affected in accordance with Czech accounting legislation. The main risk is that the entity may choose a solution that will purposefully affect the amount of the group of assets and that it intends to influence the decision made by the user of the financial statements; both financial reporting options are presented in the

table below. Due to the fact that forestry companies can often apply for a grant to cover the expenses associated with the creation of a forest management plan, accounting for transactions related to the receipt of this grant is also mentioned in the following table. Unlike IFRS, it is not possible to record the grant for the acquisition of fixed assets to revenues for the period of depreciation or amortization of fixed assets. The negative effects of the Czech accounting treatment – i.e. recording a value of a grant as a reduction in the valuation of fixed assets – are obvious.

Table 3.1. Forest management plan in Czech accounting

Accounting treatment			
Treatment A		Treatment B	
Forest management plan – cost incurred	Expenses (recorded by nature)/assets, Liabilities	Forest management plan – cost incurred	Expenses (recorded by nature)/assets, liabilities
Capitalization of intangible assets	Other intangible asset/ operating expense	Recognition of complex deferred expenses	Complex deferred expenses (asset)/ operating expense
Claim to the grant (reduction of the valuation)	Other receivable/ other intangible asset	Recording of part of prepaid expenses to P/L statement (matching principle)	Operating expense/ complex deferred expenses (asset)
Amortization of the intangible asset during the useful life	Amortization Expense/Accumulated Amortization to Other Intangible Asset	Claim to the grant	Other receivable/ deferred income
		Including part of the deferred revenues to P/L statement	Deferred income/ operating revenues

Source: own study.

Other possible risks of presenting irrelevant information for decision-making on the part of stakeholders which arise from Czech accounting regulations may become obvious from the chapter on the comparison of the accounting legislation of the V4 countries in the field of intangible assets.

3.2. Intangible assets in IAS/IFRS and US GAAP

The statements of listed companies are more comparable than financial statements of other trading companies. The most important reporting systems for those entities are the International Financial Reporting Standards (IFRS) according to which report entities with securities registered on public markets outside the USA (currently, more than 120 countries require or permit the use of IFRS) and US Generally Accepted Accounting Principles (GAAP) for US entities. If a company

submits its financial statements to the US Securities and Exchange Commission (SEC), it must report in accordance with US GAAP, which was also the mandatory reporting system for foreign entities by the end of 2007. However, as of November 15, 2007, statements of foreign private issuers prepared in accordance with IFRS have been accepted in the United States, without the need to adjust them in accordance with US GAAP. The SEC currently has no plans to permit the use of IFRS by domestic registrants. For this reason, it is important that IFRS and US GAAP reporting approaches converge as closely as possible. In 2002, the agreement in Norwalk (USA), launched a process of convergence of methodical approaches of US GAAP (issued by the FASB) and IAS/IFRS (issued by the IASB) reporting. This agreement has been implemented through a number of short-term and long-term projects in various areas of importance. Nevertheless, even after the completion of a number of projects, there are still differences between the two most important financial reporting systems. These can also be seen in the area of reporting intangible assets.

Within **IFRS**, the IAS 38 mainly deals with intangible assets other than goodwill. Intangible assets are identified as non-monetary assets without physical substance according to IFRS. This standard mentions some examples of intangible assets – computer programmes, patents, copyrights, motion picture films, customer lists, mortgage servicing rights, fishing licences, import quotas, franchises, client or supplier relations, customer loyalty, market share or marketing rights. However, not all the mentioned items could be recognized in financial statements. In order to be recognized as an intangible asset on the BS statement, they need to fulfil the definition of an intangible asset which includes identifiability, control and the future economic benefits flowing to the entity. An entity controls an asset if it has the power to obtain the future economic benefits flowing from the underlying resource and to restrict the access of others to those benefits. An intangible asset shall be recognized on the statement of financial position if, and only if, it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity and the cost of the asset can be measured reliably. From the perspective of valuation, intangible assets are initially measured at cost. This includes the purchase price inclusive of the import duties and non-refundable purchase taxes paid with the purchase after the deduction of trade discounts and rebates and any directly attributable costs of preparing the asset for its intended use (labour cost incurred in connection with bringing the asset to its working condition, professional fees, costs of testing whether the asset is functioning properly etc.). In the case of business combinations, a far more diverse and numerous group of intangible assets shall be recognized separately from goodwill (intangible assets related to marketing, customers, art, technologies, intangible assets based on a contract, etc.).

From the perspective of IFRS, the useful life of an intangible asset is a very important issue. The accounting entity needs to assess whether the period of usability of the asset is finite or indefinite. If the period is finite, the accounting entity needs to set its length or the number of outputs from the use of the asset until the end of the period of its usability. An intangible asset with an indefinite period of usability is an asset for which it is not possible to determine the end of the period, for which the asset can be expected to bring the accounting entity future economic benefits based on an analysis of all relevant factors. Setting the period of usability is important for setting the amortization of an intangible asset. Many factors are considered in determining the useful life of intangible asset, for example:

- the expected usage of the asset by the entity, and whether it could be managed efficiently by another management team,
- typical product life cycles for the asset and public information on estimates of useful lives of similar assets that are used in a similar way,
- technical, technological, commercial or other types of obsolescence,
- expected actions by existing or potential competitors,
- the level of maintenance expenditure required to obtain the expected future economic benefits from the asset and the reporting entity's ability and intention to reach such a level,
- the period of control over the asset and the legal or similar limits on the use of the asset, or
- whether the useful life of the asset is dependent on the useful life of other assets owned or controlled by the entity.

Intangible assets with an indefinite period of usability are not depreciated, only tested for impairment regularly. The rules for testing such assets are described in IAS 36 – Impairment of Assets. Every year the accounting entity also needs to re-examine if the conditions, based on which the period of usability of the asset was assessed as indefinite, have not changed. The term 'indefinite' thus does not mean 'unlimited'. If the accounting entity reaches an opinion that the period of usability is no longer indefinite, it needs to start approaching the asset as an asset with a finite period of usability and begins to amortize such assets.

The guidance relating to reporting intangible assets other than goodwill in US GAAP is primarily contained in FASB codification (ASC) Topic 350 – Intangibles – Goodwill and other, further detailed instructions for some specific cases can be found in ASC 340-20 Other Assets and Deferred Costs – Capitalized Advertising Costs and ASC 985-20 Software – Costs of Software to be Sold, Leased or Marketed.

Regarding the main definition of intangible assets, the criteria are similar in both IFRS and US GAAP, even though differences can be found especially in the case of internally developed intangible assets.

In this area, IFRS have far more sophisticated procedures for distinguishing between research (these expenditures are expensed) and development (capitalized, intangible fixed assets are recognized). Under US GAAP, the cost of internally developing, maintaining, and restoring intangible assets are expensed at the time they arose when one or more of the following conditions are met:

- it is not specifically identifiable,
- is has an indeterminate life or,
- it is inherent in a continuing business or non-profit activity and relates to an entity as a whole.

These provisions imply that, in practice, the capitalization of internally developed intangible assets is rather rare and is only seen in the case of patents and trademarks, with the limited exceptions being research and development costs expensed according to US GAAP.

On the other hand, regarding IAS/IFRS, it is necessary to strictly distinguish between the research phase and the development phase. Costs of the research phase should be expensed as incurred (they cannot even be subsequently capitalized) because the reporting entity cannot demonstrate that an intangible asset exists that will generate probable future economic benefits. Examples of such activities are those aimed at obtaining new knowledge, the search for alternatives for materials, devices, products, processes, systems or services, or the formulation, design, evaluation and final selection of possible alternatives for new or improved materials, products, processes or services. Costs incurred in the development phase are capitalized if the entity can show all the following conditions:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale,
- its intention to complete the intangible asset and use or sell it,
- its ability to use or sell the intangible asset,
- how the intangible asset will generate probable future economic benefits. Among other things, the entity can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset,
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset,
- its ability to measure reliably the expenditure attributable to the intangible asset during its development.

IAS 38 also shows examples of development activities. Yet, internally generated brands, publishing titles, customer lists and items similar in substance cannot be recognised as intangible assets if they were not acquired in a business combination.

Other significant differences between IAS/IFRS and US GAAP are in the area of the subsequent measurement of intangible assets. US GAAP prohibit revaluation of these assets according to their fair value, the reporting entity shall use only a cost model. Compared to that, according to IAS 38, the reporting entity may choose cost or fair value (revaluation) model for the measurement after recognition, but all intangible assets in its class shall be accounted for using the same model. Most entities reporting in accordance with IAS/IFRS choose a cost model for subsequent measurement. Using this model an intangible asset shall be carried at its costs less accumulated amortization (if amortized) and any accumulated impairment losses. However, even when applying the cost model, differences between IFRS and US GAAP can be found that will affect the amount of assets reported and performance indicators. The guidance related to accounting for the impairment of fixed assets is included in IAS 36 – Impairment of Assets in IFRS. Let us start with a comparison of intangible assets with a finite useful life. In US GAAP the impairment test should be performed on a group of intangible assets (on the lowest level for which identifiable cash flows are largely independent of the cash flow of other groups and liabilities), the asset group is rarely a single asset. An impairment loss is recognized when the carrying amount of an asset group is greater than the undiscounted cash flows expected to be derived from the asset group and the carrying amount of the asset group exceeds its fair value, and it is always measured in the fair value of an asset group. The reporting entity should keep in mind that the reversal of impairment loss is prohibited. By contrast, in IFRS – when possible – the impairment test should be carried out at individual asset level. If that is not applicable, it should be performed at Cash-Generating Unit (CGU) level. An impairment loss is recognized if the carrying amount of asset is greater than the recoverable amount (greater than the fair value less cost to sell and the value in use of the asset). That is measured in the value of the excess of the carrying amount of the asset over its recoverable amount. An annual review for indicators of reversal should be made in such assets. When the recoverable amount increases, the recognized impairment losses are reversed (the ceiling amount is determined as what the carrying amount would have been after adjusting for regular amortization that would have been recognized). A comparison of the determination of the impairment of intangible assets with an **indefinite** life is shown in the Table 3.2.

The second option that entities can choose under IFRS 38 for the measurement of intangibles after recognition is the combined revaluation model. A revaluation of all intangible assets in the entire class shall be made regularly, with such regularity that at the end of the reporting period the carrying amount of the asset does not differ from its fair value. The standard requires that fair value be determined by reference to an active market, and if there is no active market for the asset,

Table 3.2. Comparison of impairment in US GAAP and IAS/IFRS – assets with an indefinite life

Issue	US GAAP	IFRS
Recognition and measurement of impairment loss	Impairment test should be performed at the level of individual asset. Only for assets which are essentially inseparable from one another it is carried out for this group. The reporting entity should perform a qualitative test to determine whether it is necessary to estimate the fair value of the asset with an indefinite useful life. The fair value should be estimated if the accounting entity indicates it is more likely than not that the asset is impaired. The impairment loss is measured in the amount of excess of carrying amount over the fair value estimate	When possible the test should be carried out for individual assets. The qualitative test cannot be performed. Impairment loss is measured for individual asset or for CGU as described in the case of assets with a finite useful life
Reversal of impairment loss	Reversal of impairment loss is strictly prohibited	Reporting entity must perform an annual review for indicators of reversal. If such indicators exist, the reporting entity should estimate the new recoverable amount. Impairment losses are reversed with a maximum upper limit of its initial carrying amount

Source: own study based on US GAAP and IFRS.

the asset shall be measured at cost less accumulated amortization and impairment loss. If the carrying amount has increased due to revaluation, the increase shall be recognized as a revaluation surplus in other comprehensive income (accumulated in equity). However, the increase shall be recognized in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in P/L. If the carrying amount of the intangible asset has decreased as a result of revaluation, the decrease is recognised in profit or loss with one exception – the decrease is accounted as a reduction in equity (revaluation surplus) to the extent of any credit balance in the revaluation surplus in respect of that asset. According to the author's survey, none of the Czech listed companies have used a revaluation model for intangible assets. The author found out that among the managers and accountants of seven listed Czech companies why they do not prefer this revaluation model for reporting, as it could provide truer and fairer view of the financial position and performance of the enterprise.

In addition to the arguments that were expected – the fair value could not be determined for a number of intangible assets (fair value exists for freely

transferable taxi or fishing licences, for production quotas or greenhouse gas emission allowances, but not for assets such as brands, patents or trademarks as each such asset is unique) and in some cases determining fair value can also be relatively expensive for the reporting entity, particularly in the case of assets with indefinite useful lives, where revaluations are required each year. Some other arguments have also emerged, namely issues that result from the fact that the revaluation of fair value is not permitted for income tax purposes. The application of the revaluation model is too complicated for reporting entities because it is necessary to recalculate the amount of deferred tax every year and therefore the balances on accumulated amortization accounts must also be adjusted. One accounting entity also mentioned that comparability of statements worldwide plays a certain role for them. As noted above, US GAAP do not permit the application of a revaluation model. However, more entities mentioned that they also take into account the potential impact of the application of the model on the profit or loss statement. In the case of intangible assets with finite lives (which are amortized), the revaluation model shows lower profit on the income statement, while in the case of upward revaluation – than the cost model. This is due to the fact that amortization in the period after revaluation is calculated from the revalued value. If the amortization is expensed the impact on the profit or loss is immediate. However, with an intangible such as a recipe, its amortization shall be accounted as a part of the valuation of the inventories produced using this recipe. The revaluation model therefore has an impact on the calculation of the cost of inventories of own production, and P/L is then affected at the moment of sale of those inventories. The revaluation surplus realisation is accounted against retained earnings (this account is debited) when the asset is derecognised (at the time of disposal of the asset) or as the second option the cumulative revaluation surplus is realised gradually – in the amount of the difference amortization based on the revalued carrying amount of the asset and amortization that would have been recognized based on the asset's historical cost. In both cases the transfer from the revaluation surplus to retained earnings does not affect the income statement. This means that at the time of the disposal (sale) of the asset, no gain will be recognized in the revaluation model (if the revaluation is performed near the date of sale) or only gain in the value of the difference between the sale price and the carrying amount of the asset at the last revaluation. Firms take all of these factors into account when deciding which model of subsequent measurement to choose for intangible assets. Obvious, creative accounting techniques (from group 1 – Blake & Amat, 1998) are also used by those preparing financial statements in accordance with IAS/IFRS. The principles of combined revaluation (upwards into capital) are criticized in the case of some intangible assets, such as emission allowances described below.

3.3. Intangible assets according to IFRS for SMEs

In 2001 the International Accounting Standards Board (IASB) was authorised to develop internationally acceptable accounting standards for entities which do not publish general purpose financial statements, do not have debt or equity traded on a public market and are not in the process of doing so, and the entity does not hold assets in a fiduciary capacity for a broad group of outsiders as one of its primary businesses. In 2009 IFRS for Small and Medium-sized entities were issued, and they are regularly adjusted and revised. Many studies and papers have tried to find the reasons why the use of IFRS is not permitted in more jurisdictions, especially in more developed countries. These standards emphasize the balance between the relevance of information for users' decisions and the cost of obtaining that information. Therefore, in comparison with the full IAS/IFRS, IFRS for SMEs bring a number of simplifications, which are also applied to the reporting of intangible assets, dealt with in Section 18 – Intangible assets other than goodwill. Intangible assets are defined there as identifiable non-monetary **assets** without physical substance that bring future economic benefits flowing to the entity and can be measured reliably; these asset does not result from expenditure incurred internally on an intangible item. Intangible assets are viewed in accordance with IFRS for SMEs measured initially at cost. Fair value is used only for the valuation of intangible assets acquired in a business combination or as an exchange of assets. The standard does not allow revaluation to fair value. Other differences to full standards and simplifications are presented in Table 3.3.

Table 3.3. Significant differences in the reporting of intangible assets IFRS and IFRS for SMEs

Issue	IFRS 38	IFRS for SMEs
Internally generated assets	Recognition of intangibles when conditions are met	Expenditures expensed as they incurred
Research and development	Differentiation of the research and development phase	All expenditures expensed, without any exceptions
Useful life	Division into two groups – assets with finite and infinite period of usability, assets from the second group are not amortized, only regularly tested for impairment	Obligated to determine the estimated useful life, if a qualified estimate cannot be made, the useful life is set at 10 years
Residual value	The expected residual value can be taken into account if the specified conditions are met. The residual value is reviewed at least at each financial year-end	The residual value is always equal to nil

Source: own study based on IFRS.

3.4. The situation in selected V4 countries

As mentioned above outside the group of listed companies, comparing financial statements in the area of intangible assets is even more difficult. Let us start by comparing the Czech and Slovak legislation in the field of intangible assets. Given their shared history as one country, one might expect that the approaches to the valuation and accounting procedures in this area are not too dissimilar, yet this is not the case. Intangible assets are defined in Decree on Accounting 500/2002 Col. Within the Czech GAAP. There is no special definition of assets in there as we know from the conceptual framework of International Accounting Standards. That is why only intangible assets that accounting entities own are recognized on Czech balance sheets, and the principle of priority of substance over form is not consistently applied, so none of the leased assets are recognized on the lessee's balance sheet. Some examples of intangible assets are mentioned (software, development, valuable rights, goodwill, preferential limits) in the decree on accounting, but of course this list cannot be considered complete. Examples of items which cannot be recognized on the BS statement (expert opinions, market research, development plans, proposals for promotional and advertising events, quality system certification) are given as a counterweight to examples of recognized assets. The useful life must be longer than one year and their valuation must exceed the limit set by the accounting entity to be recognized on the balance sheet. According to Sedláček's research (2010), the limit for recognition of intangible assets ranged from CZK 300 up to CZK 150,000 in his researched sample of 6,000 Czech companies. The value of the limit set by the entity in the internal directive should take into account the materiality principle and should be therefore based on the company's balance sheet total, turnover, sales or other quantitative parameters of the reporting entity. In practice, however, efforts to simplify administrative work and income tax obligations as much as possible often play a major role. Therefore, many entities choose the limit for recognizing intangible assets in accounting at the same level as the mandatory limit for income tax purposes (this limit is not relevant for goodwill and greenhouse gas emission allowances recognition according to Czech accounting legislation). For intangible assets acquired before the end of 2020 this limit was CZK 60,000 for one separately usable item of intangible assets. Such assets were amortized for tax purposes (straight-line amortization principle for the period specified in the Income Tax Act for individual types of intangible assets is required; for example, for Software it was 36 month). Starting from 1 January 2021, the Income Tax Act was amended in the Czech Republic. The limit set by the internal directive for accounting purposes has also been mandatory for income tax purposes. Accounting amortization expense calculated according to the accounting entity's accounting

amortization plan for a particular year is therefore considered a tax expense. This fact also has implications for the calculation of deferred tax in the reporting entity (if the entity is required to account for deferred tax), as the carrying amount in accounting and tax base does not differ for newly acquired assets.

In the area of intangible assets created by their own activity, Czech regulation does not distinguish the terms ‘research’ and ‘development’, so all of these expenditures are expensed. Self-generated assets of this type, including software, can be recognized as assets only if the condition that the asset will generate recurring sales is met. Intangible fixed assets are measured at historical cost (acquisition price for purchased assets, production costs are used for the valuation of intangible fixed assets made by own activity, and the replacement cost is used for the measurement of assets acquired for free, inventory surpluses and assets acquired in exchange), unless a price has been specified in the exchange contract. Interest expenses can be capitalized only if relating to a loan specified as a loan to finance the acquired intangible asset and the expenditure must be made before putting the assets into use (Czech GAAP does not deal with the capitalization of borrowing costs systematically as international accounting standards). In practice, however, most entities expense all interest costs. The Czech GAAP also does not systematically address the measurement of cost spent of self-created assets. It merely states that the minimum valuation of assets made by its own activity (including semi-finished product) is the direct costs incurred. Administrative overheads can be included in the valuation only for assets whose production cycle exceeds one year. The Czech GAAP does not recognise assets with an indefinite useful life, all assets must be amortized, the only exceptions are the preferential limits and greenhouse gas emission allowance. Emission allowances are not amortized at all, in the case of preferential limits only those which can be depreciated according to time of performance. Unlike harmonized reporting systems, Czech accounting does not consistently address the issue of the impairment of intangible assets; under Czech GAAP, an entity may temporarily reduce the valuation of intangible assets based on a decision of the Inventory Committee examining the potential impairment of individual assets – hence no assets may be grouped into cash-generating units.

As indicated earlier, Slovak accounting legislation has adopted more harmonized financial reporting systems than Czech legislation in some areas. Slovak GAAPs present a more systematic approach to asset recognition – the Slovak Accounting Act sets out the requirements for the recognition of assets on the balance sheet, its definition is close to the definition from the Conceptual Framework of IAS (before the completion of the IASB and FASB project in the area of Conceptual Framework). An asset is defined there as a result of past events, it is almost certain

that it will increase the economic benefits of the entity in the future, and the asset must be measured reliably. Only the entity control criterion is missing, it is replaced by certain provisions in the Slovak mandatory accounting procedures for entrepreneurs. There are also mentioned some examples of non-recognized assets (in §37) – marketing and similar studies, market research, consultancy, ISO certificates, advertising, marketing expenses etc. The link between accounting and taxes is relatively close, however the principle of substance over form is not fully respected in Slovakia. This is reflected, for example, in the fact that there is a fixed limit for the recognition of intangibles on the balance sheet which refers to the Income Tax Act (currently 2,400 EUR), regardless of the size of the reporting entity.

However, there is special treatment for research and development and software made by own activity in Slovak GAAPs. Expenditures connected to research are always expensed. Development is defined in a manner similar to the IAS 38 (the reporting entity must demonstrate the ability to contribute such expenses to the profit, to demonstrate the existence of a market with an asset or products manufactured through intangible assets, the availability of all necessary financial and other resources. Typical examples of development costs are also given in Slovak legislation. The application of the prudence principle and the prevention of the erosion of the business substance results led to the enactment of the principle that the amount of profit to be distributed to company owners also depends on the value of the non-depreciated development asset. As in the case of Czech GAAP, Slovak GAAP does not allow for revaluating intangibles to fair value at the balance sheet date after initial recognition.

Systematic analyses showed that in the area of intangible assets, the financial statements prepared in accordance with the **Polish national accounting regulations** are the most comparable to the IAS/IFRS amendments. Let us start with the definition of intangible assets: a two-tier definition was applied – the conditions for recognizing intangible assets are defined in Accounting Act as in the following way: assets which are controlled by the unit, their value is reliably determined, they occurred as a result of past events, they will cause the flow of economic benefits, it is almost certain that they will increase the economic benefits of the entity in the future and these assets can be measured reliably. Intangible assets must also meet other criteria set by the Accounting Act – they are divided into two large groups – property rights in a broader sense and other specific intangibles. Property rights can be recognized on BS statements only if they are suitable for commercial use, their expected economic life exceeds one year and they are intended for being used for the entity's own needs (copyrights, related rights, concessions, rights to inventions, patents, licenses, utility designs, and

knowhow and similar items). As in the Czech Republic, the decision on the amount of the limit for recognition on the balance sheet is fully within the competence of the entity, which may take into account the nature and size of the reporting entity. Intangible assets may be recognized as assets used in the operational activity or as an investment asset (economic benefits are in the form an increase in value, fees or other benefits). This division is also important from the point of view of the application of the valuation model. Intangible assets are always strictly measured at historical cost (with the exception of assets acquired for free and assets exchanging). This measurement can only be adjusted downwards (depreciation and impairment losses) for operating assets. For intangible assets acquired as a long-term investment, the cost model or the fair value model can be chosen by the reporting entity, fair value could be determined also in other ways by reference to an active market.

The depreciation method set by the accounting entity should take into account the length of the adopted period of economic usefulness of a given component and maintaining the principle of a true and fair view. In the case of development costs, if the period of economic usability cannot be reliably determined, a limit period has been indicated as not longer than five years. Strojek-Filus & Dremluha, (2018) stress the impact of the disposal of intangible assets on the P/L statement – the result of this transaction is compensated and recognized as a profit or loss in other operating income. It may be concluded that this approach is closer to the logic of IFRS than the Czech or Slovak non-compensating accounting treatment.

Many researchers have dealt with different accounting approaches to research and development and with the consequences of recognition or non-recognition in the financial statements. Gong and Wang (2016) investigated whether the nature of the differences between national GAAP and IFRS is associated with differential changes in the value relevance of R&D expenses after the adoption of IFRS, using a difference-in-differences study on a sample of public companies in eight European countries and in Australia, covering pre-IFRS and post-IFRS periods during 1997-2012. They found that the value relevance of R & D expenses declined after IFRS adoption in countries that had previously mandated immediate expensing or allowed the optional capitalization of R&D costs. R&D costs represent a significant part of the expenditures in a number of accounting entities, so let us list the basic attributes of reporting this issue in chosen European countries. The following table shows that financial statements are not comparable in this area.

Another item that often appears on company balance sheets and represents a financially significant item is the greenhouse gas emission allowance, which represents one of the EU's administrative instruments that can regulate the

Table 3.4. Research and development cost in chosen European countries

Country	Research costs	Development costs
Austria	expense	expense
France	expense	capitalised (criteria)
Germany	expense	expense
Italy	basic research costs expensed, advanced research cost capitalised	capitalised
The Netherlands	expense	capitalised (criteria)
Spain	can be expensed or capitalised	can be expensed or capitalised
UK	expense	some can be capitalised
Ukraine	expense	capitalised (some of them)

Source: own study.

amount of greenhouse gases emitted (within the emissions produced in Europe, i.e. approximately 9% of emissions worldwide) and thus comply with the EU's formulated commitment in this area. Individual states, and therefore individual polluters, especially industrial – energy, iron, chemical, steel and other companies – are allocated allowances to emit certain amounts of tons of greenhouse gases on the basis of the allocation plan (or these companies can purchase them at auctions). For example, in the Czech Republic in 2013–2020, approximately 43% of allowances were allocated free of charge, mainly for emission-intensive industries, the remaining 57% were intended for auction (however, the actual number of auctioned allowances was lower). Free emission allowances have been distributed within sectors of the economy where it would be easy to relocate production to countries where greenhouse gas emissions are not limited.

In the Czech Republic a register of allowances is maintained by OTE, a.s. (the electricity market operator). If the polluting company does not have enough allowances, it can buy them on the stock exchange from companies which – due to the fact that they have introduced significant measures to reduce the amount of emissions into the atmosphere – have excess to allowances. During the trading period (usually five years), the market price is formed on the free market. Therefore, if the market price of the allowance is lower than the cost of introducing new, green technologies that produce less CO₂, companies usually do not introduce these measures and buy new emission allowances on the market. Conversely, when the allowance prices are higher, the company will reduce its emissions by making these investments in new green technologies. However, the fact that the price of allowances in the markets fluctuates significantly forces emission allowances to be considered a tool for a firm's investment decisions. The individual companies involved in the system must report CO₂ emissions to the competent

authority on a predetermined date and discard (transfer to the established account) the relevant amount of allowances on the specified date. Thus, during the trading period, companies may not have a sufficient number of allowances to cover the amount of their emissions but they must have them at the time when they are required to report actual emissions, otherwise they must pay a substantial fine for each missing piece of allowance.

The analyses performed by the author showed that the information provided from companies in the field of emission allowances is not comparable between entities reporting according to different national and international accounting regulations.

3.5. The situation in IAS/IFRS

Currently, IFRS do not contain special provisions on emission trading schemes. In 2003 the International Financial Reporting Interpretations Committee published IFRIC 3 – Emission rights, but after two years of its validity it was withdrawn due to criticism from both the professional community and the IASB. It has not yet been replaced by a new interpretation. Nevertheless, many companies continue to use the methodological procedures described in IFRIC 3. For this reason, Table 3.5 presents only the basic principles and the author continued to focus on other accounting solutions.

Table 3.5. Principles of IFRIC 3

Description of the transaction	Accounting treatment
1) Free acquisition of emission allowances from government agency	Intangible asset/deferred income
2) Creation of a provision for produced emissions – at fair value (liability to discard allowances)	Expense/provision
3) Purchase of missing allowances at market	Intangible asset/cash
4) Settlement of government grant according to the ratio of the number of tons of emitted emissions	Deferred income/operating revenue
5) Discarding of allowances in the amount of produced emissions	Provision/intangible asset

Source: own study based on IFRIC.

This chapter does not deal with issues of financial decision-making in connection with the management of these transactions (which of course must take into account the availability of emission allowances, the current and expected market price of emission allowances and many other factors), but tries to compare individual accounting treatments and define their strengths and weaknesses.

Naturally, after the recognition of emission allowances as an intangible asset, the reporting entity chooses a model for subsequent measurement – the cost or the combined fair value model. This choice will also affect the amount of achieved profit or loss. Obviously, the recognition of emission allowances on the balance-sheet in the form of intangible assets is economically correct, as the emission allowances meet all the requirements for the recognition of assets which are known from the conceptual framework of IAS, namely:

- the requirement of identifiability is met – the company can handle them according to its needs and its decision – keep them until use, sell them on the market, etc.,
- the control element of the asset is also met – only the holder of the allowances can release emissions, the release of emissions is also associated with the future economic benefits that the allowances bring. If the company did not have allowances, it would not be able to carry out its main economic activity and thus not achieve the future economic benefits,
- the requirement for reliable measurement is also met – there is an active market for emission allowances.

Still there are some discrepancies and weaknesses that are quite significant:

- a mismatch in the valuation of interrelated items – assets and liabilities are measured at cost (allowances, government grants), some at fair value (obligation to discard allowances in the form of a provision),
- it was not well received by many industry representatives or accountants that in the case of the cost model the decrease in price (according to IAS 36) is recorded into the P/L statement, while in the case of the fair value model the increases are recorded as capital increases,
- not all requirements for the recognition of a provision for the disposal of emission allowances is met (both the title and the settlement date of the liability are known, so a provision is not the right accounting instrument),
- the IFRIC 3 does not address the situation of non-participants in the system who just purchase emission allowances for trading or for speculative purposes.

Many entities which declare that their statements are in accordance with IAS/IFRS entities in practice use one of the two following models for allowances reporting:

1. Net liability approach. Under this approach, allowances to be obtained are reported at nominal value as set out in IAS 20, paragraph 23. Subsequently, the company accounts for the liability only if the actual emissions exceed the amount acquired and the held emission allowances at this moment.

The purchase of additional emission rights is recognized as an intangible asset at cost with subsequent measurement at cost or in fair value. The sale of allowances, which were recognized as an intangible asset are accounted as a sale in the value of the amount received. All the differences between the fair value and carrying amount of allowance are recognized as profit or loss. However, this method is not at all suitable for use by an entity that trades in allowances. Like the aforementioned IFRIC 3, this method provides a mismatch of valuation approaches, because allowances obtained free of charge are valued at zero, whereas others purchased are measured at cost, so the total P/L from their sales may be measured in a meaningless value.

2. Another approach used is the government grant approach – allocated allowances are initially recognized at fair value (the economic value of allowances is thus properly reflected despite the lack of acquisition cost). This solves the problem known from the net liability approach, i.e. that allowances received free of charge are not recognized in the balance sheet, unlike the purchased ones. The government grant is recognized as deferred income and is gradually settled.

According to the survey of EY(2020), 5% of respondents applied for reporting of emission allowances via the IFRIC 3 approach, while 60 % recognized the granted allowances at zero value, with the obligation recognized at the carrying value for allowances already granted or purchased, with the balance valued at the prevailing market price (this approach was slightly modified by 15%), and 15% of respondents recognized granted allowances at fair value with the obligation recognised at the carrying value for allowances already granted or purchased, with the balance valued at the prevailing market price, whereas 5% recognised the granted allowances at nil value with the full obligation recognised at market value and 15% used some other approach. After studying the annual reports of selected Czech listed companies, it can be stated that the situation is similar. Moreover, some companies combined these approaches and did not consistently use one approach. Some reporting entities insufficiently described the methods used and violated other rules – for example they used techniques that are not allowed for intangible assets reporting in IAS (the FIFO principle for the sale of allowances etc.).

It is clear that in order to be able to compare statements of different reporting entities, the issue of emission allowances even more than other intangible assets requires that the reporting unit publishes a lot of textual information in detail, e.g. how many emission allowances it received for free, how and at what prices it purchased individual allowances and when and at what prices it sold them on the market. The reporting entity should also describe the chosen accounting treatment, including any depreciation of an intangible asset. A new IFRIC that would come

up with an accounting treatment that respects all the specifics of these assets for both the polluter and the trader cannot be expected to be released in the near future. It seems that for its successful adoption some significant changes in more accounting standards will be required, for example using the fair value model for P/L for increasing and decreasing value and others.

Various treatments can be found in individual national regulations (except IFRS), e.g. Slovak GAAP does not consider emission allowances at all as intangible assets – assets providing the right to pollute, but rather considers allowances as a form of short-term investment.

According to Czech GAAP (Decree 500), allowances represent an intangible asset. Allowances acquired free of charge are measured at the replacement cost (account group 34 – Grants is credited). Purchased allowances are measured at cost. In the case of the sale of unnecessary allowances, the appropriate part of the grant account (group 34) is debited and the operating income is recognized. If, at the balance sheet date, an entity knows that it does not have sufficient allowances, it shall recognize a liability for missing allowances. In practice, companies often create a provision for this issue, however, as described above, the date of the settlement of the obligation is known, therefore it is more appropriate to recognize an estimated liability rather than a provision.

Table 3.6. Czech accounting treatment of current operations with emission allowances

Description of the transaction	Accounting treatment
1) Free acquisition of emission allowances from government agency measured at replacement cost	Intangible asset/government grant
2) Sale of allowances that are not expected to be needed (or are expected at a lower market price in the future) – derecognition of IA	Operating expense/emission allowances
3) Revenue from the sale	Cash/operating revenue
4) Settlement of government grant (for sold allowances)	Government grant/operating revenue
5) Recognition of estimated accounts payable (or provision) at the date of preparation of financial statements	Operating expense/estimated accounts payable (other provision)
6) In the next accounting period: Purchased allowances on the market	Intangible asset/cash
7) Derecognition of allowances (settlement of allowances discarded due to consignment to national register)	Operating expense/intangible asset
8) Settlement of estimated accounts payable (or provision)	Operating expense/estimated accounts payable (other provision)
9) Settlement of government grant for derecognized allowances	Government grant/operating revenue

Source: own study based on Czech GAAP.

The accounting treatment for current accounting operations which is in accordance with Czech GAAP is presented in Table 3.6.

Table 3.7. Basic transactions with emission allowances (Slovak GAAP)

Description of the transaction	Accounting treatment
1) Free acquisition of emission allowances from government agency measured at replacement cost	Short-term financial asset/deferred income
2) Sale of allowances that are expected not to be needed (or are expected at a lower market price in the future) – derecognition of IA	Financial expense/short-term financial asset
3) Revenue from the sale	Cash/financial revenue
4) Settlement of government grant (for sold allowances)	Deferred income/operating revenue
5) Recognition of short-term provision at the date of preparation of financial statements	Operating expense/short-term provision
6) In the next accounting period: Purchased allowances on the market	Short-term financial asset/ cash
7) Obligation to discard emission allowances	Short-term provision/liability
8) Obligation from transaction (7) was met	Liability/short-term financial asset
9) Settlement of government grant for derecognized allowances	Deferred income/operating revenue

Source: own study based on Slovak GAAP.

Table 3.7 below summarizes the basic transactions with emission allowances, which are recorded in accordance with the Slovak GAAP. In the Slovak regulation, emission allowances are not recognized as intangible assets, but as short-term financial investments. Thus, the view of the emission allowance is preferred as a way of investing rather than as a means of giving the holder the right to pollute the air. Naturally, in the case of the sale of these allowances, the financial result will be affected, in contrast to the approach of the international accounting standards and the Czech regulation. The recognition of emission allowances in current assets will obviously affect all indicators of financial analysis that work with current activities, such as liquidity indicators (the values will be higher for Slovak companies than for Czech companies), indicators based on net working capital (e.g. coverage of inventories from working capital) and others. The approach to the settlement of provisions, which is visible in the following table, is also closer to harmonized reporting systems than the Czech one.

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4

Property, plant and equipment – possibilities of influencing the financial results of entities under Polish accounting regulations and IAS 16 (including Polish tax law regulations)

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4.1. Introduction

Property, plant and equipment¹ (hereinafter referred to as PP&E) constitute a significant component of tangible assets in most enterprises. The costs of their use affect the financial results of entities and the amount of the costs depends to a large extent on the accounting principles (policy) adopted by the entities. It can be concluded that the choices made by them regarding the accounting policy for PP&E can be a tool for creating the financial results. Therefore, it is important to establish the possibilities of influencing the financial results with the applicable accounting regulations. However, entities as taxpayers of income tax, determine the amount of tax due based on the tax law, which (both in Poland and in other countries) are not the same as the solutions resulting from the accounting regulations.

This chapter is the result of theoretical considerations aimed at identifying and explaining the possibilities of influencing the financial result of enterprises using the possibilities created by the accounting regulations for PP&E. In order to achieve this objective the author presented and compared a number of the most important (according to his subjective opinion) accounting principles for PP&E in line with Polish accounting regulations (the Accounting Act – hereinafter referred to as AA and the National Accounting Standard No. 11 “Property, plant and

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¹ Property, plant and equipment are a category of fixed assets but fixed assets include also other assets either tangible (e.g. investment property, long-term financial assets) or intangible. Property, plant and equipment are sometimes called “tangible assets in use” or “tangible fixed assets in use”.

equipment” – hereinafter referred to as PAS 11) and IAS 16 “Property, plant and equipment”, as well as the regulation of Polish tax law (the Corporate Income Tax Act, hereinafter referred to as CITA). Domestic (Polish) and international² accounting regulations are similar in many elements, but there are also differences between them which may have an impact on the financial position of an entity³. Yet similar effects may be achieved under both regulations by making choices regarding accounting policy.

It should be stressed that each company is a taxpayer of income tax, the amount of which is determined in accordance with the applicable regulations of the tax law. Many entities (especially small ones), for the sake of simplification, try to apply (as far as possible) accounting solutions consistent with the tax law. However, this limits the possibility of presenting a true and fair view of the financial position. It should also be remembered that the impact of the differences between both regulatory systems on the net income is partially limited by determining the deferred tax assets and liabilities (unless there is a small entity that may not calculate and present deferred tax). On the other hand, there are also some areas of the tax regulation of PP&E allow companies to make choices that affect the level of income. Therefore, this chapter also presents the most important (in the author’s opinion) regulations of tax law in Poland with regard to PP&E.

The topic of PP&E accounting, in particular the comparison of domestic and international regulations and their relation to tax law, is a popular subject of many scientific and practical studies in Poland (e.g. Fiedoruk, 2016; Kaczmarczyk & Walińska, 2007; Karmańska & Walińska, 2006; Michalak, Walińska, Czajor & Wencel, 2018; Trzpioła, 2007; Winiarska, 2009). Nevertheless, this chapter is a part of a broader discussion on the nature of the choices made by entities with regard to accounting policies (especially in the context of PP&E).

² Each time there is reference to “international accounting regulations” the author meant International Accounting Standards/International Financial Reporting Standards (IAS/IFRS).

³ It should also be highlighted that the scope of Polish accounting regulations also covers the aspect of impairment of PP&E (PAS 11 does not regulate these issues, but takes into account the rules of a separate national standard – PAS 4 “Impairment of Assets”), while in IAS/IFRS this area is regulated by a separate standard – IAS 36 “Impairment of Assets”. Taking into account the fact that the Polish solutions for the impairment of PP&E are generally very similar to the solutions of IAS 36, this chapter will not present this area of regulation.

4.2. The areas of the accounting principles of fixed assets

4.2.1. Recognition of an asset as an item of PP&E

Before discussing the accounting rules for PP&E, first of all, it should be emphasized what comprises property, plant and equipment. In accordance with the national accounting regulations (AA, 3.1.15; PAS 11, 3.1), an item of property, plant and equipment:

- has a material form or is a tangible property right, such as: the right of perpetual use of land, cooperative ownership right to a flat or a cooperative right to a business premises;
- its expected useful life in the entity is longer than one year (12 months);
- is intended to be used for the needs of the entity, including permanent use by other entities under rental, lease or leasing agreements, provided that these agreements do not meet the definition of a financial lease;
- is complete and usable.

IAS 16 defines fixed assets in a similar way, except for property rights, while it does not directly indicate completeness and suitability for use, but this condition can be considered a default, taking into account the condition that the asset (IAS 16) is held for use in the production or supply of goods or services, for rental to others, or for administrative purposes.

Particular attention should be paid to the condition concerning the use of an item of PP&E by the entity for a period longer than 12 months. This seemingly obvious principle has a significant impact on the view of the financial position. If the acquired asset will be used, as expected by the entity, for a period shorter than 12 months, then it will not be considered a non-current asset, but as a current asset (e.g. inventory). By making a conscious decision to sell an asset in less than 12 months an entity therefore decides that the outcome on the sale will be recognized in the result on basic operating activities. At the same time, the sale of an item of PP&E will constitute the result on other operating activities (this is particularly important for entities preparing statements according to Polish regulations, because in light of IAS/IFRS, dividing operating activities into main and other activities is not clearly defined).

4.2.2. Initial recognition

In line with the Polish accounting regulations (AA, PAS 11), PP&E are initially recognized at purchase price or manufacturing cost increased by borrowing costs (including foreign exchange differences arising from liabilities incurred to

purchase or manufacture PP&E), less any revenues on this account. IAS 16, on the other hand, allows for borrowing costs to be capitalized in the form of foreign exchange differences in the initial value of an asset only to the extent that they are regarded as an adjustment to interest costs.

PP&E that are acquired in a different way (e.g. by donation or exchange for another asset) are, in accordance with Polish accounting regulations, initially recognized at the selling price or otherwise determined fair value of the same or similar asset). The initial recognition of PP&E acquired through exchange is regulated in a similar way according to IAS 16, but if the fair value of the asset received cannot be determined or the exchange transaction has no commercial substance, the fixed asset is recognized initially at the net carrying amount of the transferred non-monetary assets. IAS 16 also does not directly consider the initial recognition of the PP&E received as a donation (taking into account the provisions of this standard, it can therefore be considered as correct that the initial value of such an asset will amount to zero)⁴.

Contrary to Polish accounting regulations, IAS 16 includes in the initial valuation of PP&E the estimate of the costs of dismantling and removing the item and restoring the site on which it is located, the obligation for which an entity incurs either when the item is acquired or as a consequence of having used the item during a particular period for purposes other than to produce inventories during that period. Such costs, however, do not constitute a part of the initial value of PP&E in line with Polish accounting regulations. Therefore, the initial value of PP&E recognized in accordance with IAS 16 may, in some circumstances, be much higher than in the case of applying domestic solutions.

It is important to pay attention to PP&E which require test production before being put into use. Testing costs increase the cost of an asset, but there is a difference in the treatment of products that will be produced as a result of test production. PAS 11 indicates that the initial value of an asset under construction is reduced for the net selling price of the received or sold semi-finished products, finished products or services resulting from trials and tests, provided that their value is significant. However, according to IAS 16 (effective from 2022) an entity recognizes the proceeds from selling any such items, and the cost of those items, in profit or loss in accordance with applicable standards. The change introduced in IAS 16 may significantly affect the increase (as compared with previous

⁴ IAS 16 indicates the cost as the parameter of the initial valuation. However, recognizing the donated PP&E initially at its market value would require a fair value measurement. Fair value, on the other hand, is a parameter used in the event of the acquisition of a fixed asset by way of exchange for another asset or in the event of receipt of a fixed asset under a government subsidy (IAS 20).

solutions) in the initial value of PP&E in some industries (especially if the period of test production was relatively long and the revenues obtained from the sale of test production were high).

From the perspective of the initial recognition, attention should also be paid to components with a low initial purchase price. Polish accounting regulations (PAS 11, 4.28) indicate that if the initial value of an asset (meeting the criteria for recognition as PP&E) is immaterial, then it is possible to apply a simplification and:

- to recognize an asset as a PP&E and then to write down its initial value as a one-off charge against depreciation costs,
- to recognize the initial value of such component as the cost of materials used at the date of purchasing (depending on the choices made by the entity in the accounting policy, it is possible – and recommended for components such as electro tools, smartphones, etc. – to include such components in off-balance sheet records).

IAS 16 does not indicate such a possibility directly, which does not preclude a one-off write-off of the initial value of an item of PP&E due to the principle of materiality (if its value is immaterial).

It is important that both sources of regulation (PAS 11, IAS 16) allow entities to aggregate individually insignificant items, and to apply the recognizing criteria to the aggregate value. Under PAS 11, such PP&E components are referred to as “collective inventory items”. The possibility of creating such objects makes it easier for entities to ensure the matching of the revenues and related costs during all the periods of using such items, and on the other hand, it is also a tool for influencing the financial result. A write-off of the initial value of many components (each of which has an individually insignificant initial value regardless of whether these would be costs of depreciation or materials used) could significantly reduce the financial result of the entity in one period. However, an entity that has the intention to lower the financial result in a given period (regardless of the reasons) would not aggregate a collective object and would make a write-off of the initial value of the purchased components.

4.3. Measurement after initial recognition

Both Polish and international accounting regulations distinguish two PP&E valuation models after initial recognition. The main (but not the only) difference between the national and international regulations for PP&E accounting is that, according to IAS 16, these are two alternative valuation models, and therefore an

entity may voluntarily specify in the accounting policy which model will be used. In turn, according to AA and PAS 11, the cost model (using the terms used in IAS 16) is the basic one. Polish accounting regulations allow for the revaluation of the initial value of PP&E only on the basis of separate regulations issued by the competent ministry. However, such regulations may be issued only when inflation for three consecutive quarters exceeds 10%. The application of the revaluation model is therefore not the choice of any entity but the result of a mandatory revaluation.

4.3.1. Revaluation model

The revaluation model seems to be interesting as the carrying amount of an item of PP&E may increase⁵ in the event of an increase in market prices⁶. The parameter of measurement is fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. IAS 16 does not strictly specify the frequency of the revaluation, but it should be done regularly enough to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period. In practice, this comes down to the need to verify the carrying amount of the items of PP&E at the balance sheet data (although IAS 16 emphasizes that such revaluation does not have to be performed every year).

It should be stressed that entities preparing financial statements in accordance with IAS 16, when choosing to measure PP&E in accordance with the revaluation model, do not have to measure all items of PP&E according to this model. Instead, the chosen valuation model must be applied (IAS 16, 36) to the entire class of PP&E (of a similar nature and use⁷) to which that item belongs. The choice of the revaluation model is also associated with the need to perform a reliable valuation and may often create the need to use the services of experts and incur the additional costs related to it.

The revaluation increase of the item of PP&E is recognized in other comprehensive income and accumulated in equity as a revaluation surplus (only if the surplus is

⁵ It should be remembered that increasing the value of the item of PP&E is also possible in the case of making improvements, which is described later in the chapter.

⁶ IAS 16 indicates two ways of applying this model (IAS 16.35): a) the gross carrying amount is adjusted in a manner that is consistent with the revaluation of the carrying amount of the asset. For example, the gross carrying amount may be restated by reference to observable market data or it may be restated proportionately to the change in the carrying amount. The accumulated depreciation at the date of the revaluation is adjusted to equal the difference between the gross carrying amount and the carrying amount of the asset after taking into account accumulated impairment losses, or b) the accumulated depreciation is eliminated against the gross carrying amount of the asset.

⁷ A specific, separate class of PP&E are, for example, land and buildings, machinery, motor vehicles, office equipment, etc.

a reversal of the previously recognized revaluation decrease in value, is it recognized in profit/loss), whereas any revaluation decrease is recognized in profit/loss. It is also worth pointing out that IAS 16 introduces two alternative approaches to the further treatment of a revaluation surplus. It is possible (IAS 16.41): a) to transfer it directly to retained earnings when the asset is derecognised (the asset is retired or disposed of) or b) to transfer it to retained earnings as the asset is used by an entity (in which case the amount of the surplus transferred would be the difference between depreciation based on the revalued carrying amount of the asset and depreciation based on the original cost of the asset).

4.3.2. Cost model

The use of the cost model (obligatory in Polish regulations) means the valuation of an item of PP&E at its cost less any accumulated depreciation and any accumulated impairment losses. As indicated earlier, impairment is not a consideration in this chapter, therefore attention is focused on depreciation.

When comparing the principles of depreciation of PP&E according to Polish accounting regulations and IAS 16, it is important to refer to: depreciable value, depreciation methods and depreciation object.

The so-called depreciable value, i.e. gross book value (initial value increased by possible improvements) less residual value, is defined as:

- the estimated by the entity net selling price possible to obtain at the time of its expected disposal (e.g. sale, liquidation), determined as of the day of initial recognition of the item of PP&E. The residual value of PP&E is disregarded if, according to the criteria adopted by the entity, it can be considered as insignificant (PAS 11, 8.6),
- the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and the condition expected at the end of its useful life (IAS 16).

While the above two definitions are similar, the ability to estimate a residual value (often omitted in practice) is an element that, in some circumstances, may materially affect an entity's 'financial picture' (especially for entities reporting under AA). If the entity intends to use a specific item of PP&E for a period shorter than its useful life⁸, then a lack of estimation of the residual value means that

⁸ The useful life of a fixed asset is the period (IAS 16) over which an asset is expected to be available for use by an entity, or the number of production or similar units expected to be obtained from the asset by an entity.

when the asset is fully depreciated, the entity will recognize a gain on expense (in line with AA, it will be recognized in other operating income). On the other hand, the estimation of the residual value at the level of the net sale price at the time of the planned disposal means that no gain/loss on the disposal of the fixed asset will be recognized or only a small profit will be disclosed⁹. At the same time, an entity that does not estimate the residual value (considering it as irrelevant) should be aware that during the life of the fixed asset it will incur higher depreciation costs, which in the case of PP&E used to manufacture goods or provide services will increase the cost of goods/services.

Depreciation (PAS 11, 8.1) reflects the planned, gradual and systematic allocation of the depreciable amount resulting from the use of an asset or the passage of time over its useful life. It therefore reflects the gradual use of the economic benefit potential inherent in a given item of PP&E. In order to reflect the method of using economic benefits, the entity should select the depreciation method that corresponds to the method of using a given PP&E item. There are many depreciation methods that can be used, both according to national accounting regulations and IAS 16, such as: the straight-line method, the degressive method (including the diminishing balance method¹⁰ and the SOYD method), the degressive-straight-line method or the natural method (the units of production method).

Depending on the depreciation method, the costs: a) will be equal in each year of using an item of PP&E, b) will decrease with the gradual wear of the item¹¹, or c) will depend on the volume of production with the use of the item of PP&E. The last option is provided by the natural method, which leads to treating depreciation as variable cost.

In practice, the most commonly used method is the straight-line method or the degressive-straight-line method, both of which are also allowed in Polish tax law.

⁹ In fact, due to accounting rules, any difference between the higher carrying amount and the lower selling price should be charged to costs as an impairment loss.

¹⁰ It should be highlighted that using the diminishing balance method the whole depreciable value of an item of PP&E will not be allocated. Then at the end of the useful life of an asset, the rest of its carrying amount should be written off as depreciation.

¹¹ The degressive (or degressive-straight-line) method is commonly perceived as a method that allows for a faster write-off of the value of PP&E to costs. This way of perceiving the degressive method results from the tax point of view (and the willingness to recognize tax deductible costs as soon as possible and to determine the income tax at the lowest possible level). From the economic point of view (which is represented by the accounting principles), the degressive method allows to maintain the total costs related to the use of an item of PP&E at a similar level throughout its useful life. The growing costs of repairs (usually unavoidable) in the following years are then “compensated” by lower depreciation costs.

When comparing the possibilities concerning the choice of depreciation methods, two significant differences should be noted between AA (and PAS 11) and IAS 16.

First, if there is a change in the way in which the economic benefits are derived from a given item of PP&E, then, in accordance with IAS 16, the depreciation method should be changed. However, such a solution is not allowed in the domestic regulations in Poland¹². The inability to change the depreciation method in line with Polish regulations does not mean that the entity cannot reflect in the financial statements the change in the way economic benefits are derived from an item of PP&E. A similar effect can be obtained by verifying the depreciation period (its shortening or lengthening) and the residual value of the item¹³.

The second difference concerns the depreciation of the components included in the item of PP&E. IAS 16 indicates that sometimes it may be legitimate to depreciate some parts of an item of PP&E separately from its other material parts, especially if their depreciation periods are different. National accounting regulations do not allow the use of such a way of depreciation directly, although it is possible to distinguish parts as components, additional and peripheral parts in one item of PP&E. PAS 11, on the other hand, introduces the possibility of including different useful lives of individual parts of an item of PP&E for the calculation of the depreciation rate (PAS 11, 8.26). When adopting such a solution, the entity determines how many times it will have to replace individual parts over the useful life of an entire item of PP&E, and on this basis determines its value subject to depreciation as well as the depreciation rate. The application of this solution allows to obtain an effect identical to the depreciation of components according to IAS 16. Additionally, by adopting this solution and taking into account the use of the straight-line method of depreciation, the entity will incur fixed depreciation costs related to the use of the item of PP&E throughout its use. Failure to take into account different periods of use of components means that in the period in which a given part is replaced, the related costs (value of the replaced part of the item of PP&E) will be recognized in the costs of the period (as renovation or repair costs), which may lead to greater fluctuations in the financial result.

¹² AA and PAS 11 do not directly indicate the prohibition of changing the depreciation method, but only emphasize (PAS 11, 8.42) the obligation to verify the period and rate of depreciation together with the verification of residual value. Failure to indicate the obligation to verify the depreciation method is treated as a prohibition to change the method once adopted. However, such a prohibition was explicitly specified in the CITA (Article 16h (2)).

¹³ For example, extending the depreciation period while keeping the residual value at the same level will reduce the depreciation rate in subsequent periods despite the use of straight-line depreciation.

4.3.3. Other costs concerning the use of PP&E

Depreciation is not the only cost incurred when using PP&E. Most items of PP&E usually require periodic inspections, maintenance, as well as repairs of various kinds. Such costs are usually treated as costs of the period, unless it is justified to capitalize them (as prepaid expenses) and include them in profit/loss over time (which is possible when such costs are significant and recurring at specified intervals).

It should be emphasized, however, that some costs may be capitalized in the value of an item of PP&E (increasing its gross book value) if they are considered to be an improvement of the PP&E. According to IAS 16, such costs will be capitalized in the value of an item of PP&E as long as they meet the criteria for recognition of PP&E (IAS 16.7) when they increase the usefulness of the PP&E component (they enable an entity to derive future economic benefits from related assets in excess of what could be derived had those items not been acquired)¹⁴.

The Accounting Act directly relates to the issue of improvements of PP&E, indicating (AA, 31.1) that the improvement consists in reconstruction, extension, modernization or reconstruction and means that the value in use of this asset, after the improvement is completed, exceeds its initial value in use, measured by the period of use, production capacity, quality of products obtained with the help of an improved fixed asset, operating costs or other measures. The improvement of an item of PP&E is closely related to the possibility of taking into account the different useful lives of individual components, additional parts and peripheral parts. Depending on the choices made by the entity, the replacement of such a part may be considered as an improvement (resulting in an increase in the value of the asset) or as the cost of the period. The amount of expenditure incurred for improvement is also important. If the entity has determined a significant value in its accounting policy (i.e. the value below which expenditures are treated as costs), then even if they meet other conditions for recognizing them as an improvement, they will be recognized as costs of the period due to their immaterial value.

¹⁴ It is worth mentioning that according to IAS 16 the costs of replacing parts as well as costs of regular major inspections may be recognized in the carrying amount of the item of PP&E. Interesting considerations on the differences between repairs and improvement were also presented, among others, by Gos and Hońko (2012).

4.4. PP&E from the perspective of the Corporate Income Tax Act

Any entity subject to Polish tax jurisdiction must determine income tax in accordance with CITA regardless of the fact that it prepares financial statements in accordance with Polish or international accounting regulations. Thus, entities frequently have to keep double records for accounting and tax purposes (especially if the entity does not use simplifications that in some cases allow the use of tax solutions or when the entity does not necessarily want to use solutions as close to the tax law as possible). Hence it is important to indicate the basic differences between the accounting regulations and the tax law with regard to PP&E (to the extent the accounting regulations have been presented).

4.4.1. Initial recognition

According to CITA, items of PP&E¹⁵ are initially recognized (CITA, 16g) at purchase price or manufacturing cost plus interest and commissions on loans and borrowings incurred until the date the item of PP&E has been commissioned for use. In addition, the initial value is adjusted by exchange differences accrued until this date.

CITA also specifies the rules for determining the initial value of fixed assets received free of charge (CITA, 16g) – the initial value is the market value as at the date of purchase, unless the contract (concerning the transfer of the item of PP&E) specifies this value at a lower level.

After initially recognizing an item of PP&E, it is possible to increase its value through improvement (CITA, 16g), while CITA arbitrarily sets the bottom lower amount of expenses at the level of PLN 10,000 (the same as the value of the limit for one-off depreciation). As in accounting regulations, the improvement must increase the value in use of the item of PP&E which is measured, in particular, by the period of use, production capacity, quality of products obtained by means of improved fixed assets and their operating costs. A special case of improvement is the attachment of component or peripheral parts to an item of PP&E¹⁶.

¹⁵ It is also worth pointing out that CITA does not define PP&E directly, but only lists assets that are depreciated and are called property, plant and equipment. In addition, in light of the tax regulations (contrary to the Accounting Act), PP&E do not include the right to perpetual use of land, the cooperative ownership right to a flat and business premises (which, in accordance with CITA, constitute intangible assets), as well as livestock intended for use by the entity for a period longer than 12 months (recognized as materials in the regulations of the tax law).

¹⁶ The opposite situation is also possible, i.e. lowering the initial value by the value of the disconnected component or peripheral part. In this case, the entity must determine the amount of past depreciation allocated to this component or peripheral part.

4.4.2. Depreciation and other costs incurred after initial recognition

Depreciation is the basic cost incurred when using an item of PP&E. Tax law regulations do not introduce the concept of residual value, so the entire initial value is depreciated. However, CITA sets the bottom lower limit of the value of the item of PP&E at PLN 10,000, below which an entity can make a depreciation write-off of the entire initial value¹⁷. In other cases, two methods of depreciation are allowed: straight-line (including increased rates and individually determined rates) and degressive-straight-line¹⁸.

CITA includes a List of Depreciation Rates and Principles which indicates the percentage (rate) of depreciation for each type of fixed asset (defined in the Classification of Fixed Assets). The rates determined in this way may be appropriately increased for some types of fixed assets in the case of their use in deteriorated or bad conditions. On the other hand, in the case of used or improved fixed assets, entities may apply individual depreciation rates (CITA, 16j), with the minimum depreciation period depending on the type of PP&E and its initial value.

It should be emphasized that CITA also allows the possibility of lowering the depreciation rates. From the perspective of tax burdens, this is not a popular solution – most taxpayers try to include costs as high as possible costs in tax deductible costs – while lowering the tax depreciation rate means that the entity will show higher taxable income and thus will pay higher income tax. The benefits of a reduction in the depreciation rate may bring benefits mainly in the case of settling tax losses¹⁹. The application of lowered depreciation rates may also be considered for items of PP&E (motor vehicles, in particular passenger cars) that the entity intends to sell²⁰. Nevertheless, the possibilities introduced in this respect by CITA mean that entities have a certain influence on the amount of the tax burden²¹.

¹⁷ CITA also allows for one depreciation write-off for specific groups of PP&E, up to an amount not exceeding EUR 50,000 in the tax year (CITA, 16k). However, this possibility applies only to small taxpayers, and for other taxpayers – only to the year in which they started activity.

¹⁸ CITA describes this depreciation method as degressive, but it is in fact a degressive-straight-line method. In the year in which the depreciation rate was determined according to the degressive method, it would be lower than the rate determined using the straight-line method, further write-offs are made according to the straight-line method.

¹⁹ An entity may settle a possible tax loss faster if it shows higher taxable income due to the lowered depreciation rates. On the other hand, an entity ‘retains’ the value of the fixed asset and may return to basic depreciation rates in subsequent periods.

²⁰ The selling price usually exceeds the tax base of such an item of PP&E when basic CITA rates are applied. Thus, at the time of disposal, taxable income will arise. The use of lowered rates means lower tax expenses while using the item of PP&E, but there will probably not be any taxable profit at the time of disposal.

²¹ Nonetheless it should be emphasized, according to Zieniuk (2012), that the possibility of using depreciation as a tax optimization tool is limited, and the attempts to use the opportunities provided by CITA may be considered mainly in entities that have PP&E of significant value.

When using PP&E there are also incurred costs related to maintenance and repairs. These costs are tax costs in the period they are incurred. The exception occurs in the situation described earlier, when a component or a peripheral part of an item is replaced.

4.5. Conclusions

The accounting principles described in this chapter are not exhaustive in the subject of PP&E. However, the presented issues seem to have the greatest influence on the financial result of an entity. As was already shown, IAS 16 allows more alternative solutions than the Accounting Act and makes more important choices of an entity in its accounting policy concerning PP&E. However, this does not mean that entities that prepare financial statements under the Accounting Act (including PAS 11) cannot achieve a similar effect. PAS 11 explains in detail the allowed solutions, making it easier for entities to present a true and fair view of their financial position. The most significant difference between both regulations (domestic and international) is that according to Polish accounting regulations it is not allowed to use the revaluation model as an accounting policy choice²². However, this should not affect the reliability and credibility of the financial statements significantly. None of the allowed valuation models have an advantage in terms of the quality of information (Mazur, 2012). PP&E, by definition, are not intended for sale, therefore adjusting their carrying amount to their fair value should not be of significant importance for users of financial statements. If the entity intends to sell an item of PP&E, then it should reclassify the item to assets held for sale in accordance with IFRS 5. At the same time, it is worth noting that the measurement of PP&E at revalued amounts is not widely used in Poland by companies preparing financial statements in accordance with IFRS (Kamieniecka, 2012).

Polish tax law concerning PP&E differs from accounting regulations (both domestic and IAS 16). In some cases, entities may adopt solutions similar or uniform with CITA (e.g. adopting a lower value limit of PLN 10,000), and any differences will be reflected as deferred tax assets and liabilities²³. The deferred tax does not reduce in full the influence of the accounting policy in the area of PP&E on the financial position of the entity, but the influence on the financial results will be partially mitigated.

²² This is also confirmed by Kaczmarczyk and Walińska (2007).

²³ This does not apply to small entities (as defined in the Accounting Act), which are allowed not to determine deferred income tax.

It is also worth emphasizing that, as indicated in the last part of this chapter, that entities also have certain possibilities to influence the tax base due to choices concerning PP&E.

To sum up, both the accounting regulations and the tax law (to a limited extent) concerning PP&E contain solutions that allow entities to influence the view of their financial position, yet the significance of this influence depends on the total value of PP&E (and its relation to the value of total assets). Nevertheless, the most important aspect should be the awareness of the management of the entity regarding the existence of these possibilities, and their excellent knowledge of the applicable accounting and tax regulations.

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5

Corporate tax reporting: effective tax rate of Serbian business entities

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5.1. Introduction

Governments of almost all states tax their residents in order to build a better or maintain the existing infrastructure. Beside value-added tax (VAT) and payroll taxes, income tax is one of the key company taxes. Paying income tax helps the economy of the state and provides the budget, which is crucial for the economic growth and development of the state. Economic performance depends on the structure of the state's tax system being one of its most important determinants. Therefore, economies with well-established and fair taxation systems are usually states that offer a beneficial business environment for companies and overall social well-being for their citizens. Each tax system has three basic objects of taxation, namely consumption, income, and property (Aleksic, 2019; The Government of the Republic of Serbia, 2020). VAT is a general, broadly based consumption tax assessed on the value added to goods and services sold or purchased by business entities in one state. It is the most common type of general consumption tax across economies world-wide. When goods or services are sold to customers outside the state, they are normally not subject to VAT. However, VAT is an essential part of state budget income, as it usually makes up most of the revenue from taxes (Hajduchova, Sedliacikova, & Viszlai, 2015). However, there are also other taxes related to consumption, such as excise duty, and tax on non-life insurance premiums. In terms of property, the following taxes are usually distinguished: property tax; inheritance and gift tax; tax on the transfer of absolute rights; and taxes on the use, possession and carrying of goods. Finally, corporate income tax (CIT) and personal income tax are taxes related to the income of a business entity or a citizen. This tax is owed to the state, federal, and, in some cases, municipal governments, as in some cities and regions, additional taxes are also imposed. CIT is calculated when a certain percentage (the tax rate imposed by the government) is applied to a certain amount of money received by

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a taxpayer. The source of the money to be taxed could be incurred from wages or salary, net result, income from investments (e.g. dividends or interest), capital gains, as well as net results raised from goods or services sold. The next step is the collection of the tax by the government, which is the percentage of the taxpayer's earnings or money taken. When assessing if a certain tax is effective, costs related to tax and duties collection are compared to tax revenues to the state budget. If the costs are a few times lower than revenues, it can be concluded that the collection of tax and duties is effective. It can be expected that the higher the amount of money to be taxed, the higher the amount of tax to be collected. Thus, business entities with higher net earnings should expect to pay a higher amount of income tax. Bearing in mind that public companies collect additional capital for financing their business on the financial market, the management of these companies need to make sure that their business is transparent to current and potential investors. Additional financing could unlock additional growth and extraordinary financial results for these companies, and therefore they should be significant taxpayers for the government. Social responsibility, among others, demands that public companies organise their business in such a manner to become an example of fine business ethics. Therefore, tax evasion or the use of illegal means to avoid paying taxes should not be considered in the context with these entities. However, all taxpayers, including public entities, can use methods allowed by the tax regulations to decrease the amount of tax to be paid, or they can use the tax breaks prescribed by the tax authority to postpone or permanently reduce the amount of tax liability. One of the very common research questions in the subject literature is whether public entities have a higher or lower effective tax rate compared to other business entities. This chapter presents the results of research analysis focused on the sampled business entities and their effective tax rate, the differences between the financial and tax result, and the amount of tax paid. The chapter is structured as follows: the first part explains and describes the procedure for calculating corporate income tax in the Republic of Serbia, followed by a brief literature review, and finally the research results show the average effective tax rate of the sampled business entities and the comparison between the effective tax rate of public entities.

5.2. Procedure of corporate income tax calculation in the Republic of Serbia

This section explains why in fact differences occur between the statutory and the effective tax rate. The statutory tax rate is the legally imposed rate, for example by Law on Corporate Income Tax in Serbia, or by some other regulation. Income tax could have multiple statutory rates for different income levels and is expressed as

a percentage. Bearing in mind that business entities can use tax breaks and other tax reliefs, the statutory tax rate will always be higher than the effective tax rate. An exception might occur in economies where the official tax rate is set at a very low level to promote small business and entrepreneurship, while there are additional tax burdens for entities that earn profits above a certain amount. The statutory tax rate is usually the same for all business entities that operate within the state.

According to the Law on Corporate Income Tax, a taxpayer is a business entity, i.e. an entity established for the purpose of performing different activities and making a profit. A taxpayer can also be a cooperative that generates income by selling products on the market or performing services for a fee. However, according to this law, the taxpayer is also another legal entity that is not established to obtain profit but to achieve other goals, yet only if it earns profit by producing and selling products or if it provides services for a fee. An example for such taxpayers can be churches and other religious organizations that organise commercial activities of selling souvenirs and such like within their registered services. The Law on Corporate Income Tax defines a wide range of legal entities that are obliged to pay corporate income tax (Official Gazette of the Republic of Serbia, 2019). This chapter focuses only on business entities, and therefore the research sample consists only of business entities that operate within the Republic of Serbia.

5.2.1. Calculation of the tax base

The calculation of the tax base starts from the financial reporting within an entity and the official financial statements. Taxpayers are required to prepare and submit the tax statement, together with the tax return. Taxable profit is determined in the tax statement by adjusting the taxpayer's financial result disclosed in the income statement. The financial result is calculated in accordance with International Accounting Standards (IAS), i.e. International Financial Reporting Standards (IFRS), and International Financial Reporting Standard for Small and Medium Legal Entities (IFRS) for SMEs), and regulations governing accounting in the manner prescribed by the Law on Accounting. The taxable profit of a taxpayer who, according to the accounting regulations, does not apply IAS (i.e. IFRS and IFRS for SMEs), is determined in the tax balance by adjusting the taxpayer's profit, calculated in accordance with the method of recognition, measurement and assessment of income and expenses prescribed by the Minister of Finance (Official Gazette of the Republic of Serbia, 2019).

The tax return is submitted to the relevant tax authority within 180 days from the expiration of the period for which the tax is determined. The taxpayer is obliged

to calculate and pay income tax disclosed in the tax return for the reporting period. However, the tax is paid in advance according to the amount of tax from the previous period. Therefore, if the taxpayer paid less than it is obliged to pay according to the amount disclosed in the tax return and tax statement, they are obliged to pay the difference no later than the filing date of the tax return (and submit proof of payment of the tax difference). Sometimes taxpayers can pay more than they are later obliged to, therefore the overpaid tax will be used as an asset for the next tax period, or it will be refunded within 30 days from the date of receipt. Serbian business entities usually choose the first option, when the overpaid tax amount will be disclosed as an item in the balance sheet.

5.2.2. Statutory and effective tax rate of the Republic of Serbia and other countries

All states impose income taxes, but the rates and bases vary greatly between them. There are numerous implications of high or low-income tax rate. Hence income tax reduces the rate of return on income tax after tax, thus increasing the cost of capital, which leads to lower levels of investment and economic production (Mizdrakovic, Kljajic, & Slavkovic, 2020). In addition, high income tax rate leads to lower wages, lower investment returns and higher final prices of goods and services. In the case of the Republic of Serbia, the corporate income tax rate is proportional and uniform and amounts to 15%. The tax period for which income tax is calculated is the business year. The following figure shows the trends of official income tax rate for Serbian entities in the period 2011-2021.



Fig. 5.1. Trends of statutory income tax rate in the period 2011-2021 in the Republic of Serbia

Source: (Trading Economics, 2021).

In regard to other countries, income tax rates differ and each one is determined based on the power of the economy and the fiscal politics of the country. As a result, some countries have a 0% income tax rate (Anguilla, Bahamas, British Virgin Islands, Bahrain, Latvia, Bermuda, Isle of Man, Cayman Islands, Georgia, Guernsey, Jersey, Kuwait, Latvia, Saint Kitts and Nevis, Sark, United Arab Emirates), while in others, legal entities have to reserve as much as one-third or even more of their earned profits to pay income tax (Cameroon, Namibia, Brazil, Venezuela, Bangladesh, Benin, Burundi, DR Congo, Gabon, Malta, Zambia, Zimbabwe, Suriname) (Mizdrakovic et al., 2020).

Table 5.1. Comparison of statutory and effective corporate income tax rates by countries and territories

Country	Statutory tax rates in %	Composite effective average tax rates
Australia	30.0 ^{a)}	28.1
Austria	25.0	23.4
Belgium	30.0	20.3
Canada	12.0 ^{b)}	23.8
Chile	27.0	37.9
Colombia	33.0	30.1
Costa Rica	30.0	43.3
Czech Republic	19.0	18.3
Denmark	22.0	20.3
Estonia	20.0	17.0
Finland	20.0	19.8
France	15.0 ^{c)}	29.4
Germany	30.0	28.0
Greece	28.0	23.0
Hungary	9.0	10.2
Iceland	20.0	19.1
Ireland	13.0	12.4
Israel	23.0	21.6
Italy	28.0	21.3
Japan	30.0	29.4
Lithuania	15.0	13.7
Latvia	0.0	17.0
Luxembourg	29.0	23.2
Mexico	30.0	30.1
Netherlands	20.0 ^{d)}	23.7
New Zealand	28.0	27.1
Norway	23.0	20.5
Poland	19.0	15.5
Portugal	21.0	25.0
Slovak Republic	22.0	19.3
Slovenia	19.0	17.5

Spain	25.0 ^{e)}	23.3
Sweden	21.0	20.4
Switzerland	18.0	20.0
Turkey	22.0	18.3
United Kingdom	19.0	16.8
United States	21.0 ^{f)}	22.3
Andorra	10.0	9.4
Angola	30.0	27.5
Argentina	30.0	34.9
Botswana	22.0	31.6
Brazil	34.0	27.3
British Virgin Islands	0.0	0.0
Bulgaria	10.0	9.1
Cayman Islands	0.0	0.0
China (People's Republic of)	25.0	23.0
Democratic Republic of the Congo	30.0	32.2
Croatia	12.0 ^{g)}	16.5
Cyprus	13.0	10.8
Curacao	22.0	21.2
Hong Kong, China	8.0 ^{h)}	14.4
India	17.0 ⁱ⁾	23.8
Indonesia	25.0	20.9
Guernsey	0.0	0.0
Isle of Man	0.0	0.0
Jamaica	33.0 ^{j)}	23.7
Jersey	0.0	0.0
Kenya	30.0	28.4
Liechtenstein	13.0	10.2
Macau, China	12.0	11.3
Malta	35.0	28.2
Mauritius	15.0	13.8
Peru	30.0	29.2
Romania	16.0	14.4
Russia	20.0	19.8
Saudi Arabia	5.0	20.1
Senegal	25.0	28.4
Seychelles	30.0 ^{k)}	27.8
Singapore	17.0	16.1
South Africa	28.0	25.8
Eswatini	28.0	25.7
Thailand	20.0	19.6

a) 28.5% reduced rate; b) 12% lowest rate; 38% highest rate; c) 31% on profits over €500,000; 28% over €38,120 but not over €500,000; 15% not over €38,120; d) 25% on profits over €250,001; 20% when not over €250,000; e) 4% in Canary Islands; f) 21% + 0 –12% (state/local); g) 12% for profits not over 3 million kn, 18% for profits over 3 million kn; h) 16.5% (on profits over HK\$2 million); 8.25% (on profits not over HK\$2 million); i) 17% lowest rate; 25% highest rate; j) 25% reduced rate for small companies; k) 40% highest rate; 30% lowest rate.

Source: (OECD, 2020).

On the other hand, the effective tax rate represents the actual tax liability of the corporate taxpayer. This financial indicator is calculated by dividing tax expense with earnings before tax of the business entity. It is important to note that in entities with a negative amount of profit before tax (loss before tax), it is not possible to calculate the effective tax rate, as it is applied only on profit before tax (Knezevic, Stanisic, & Mizdrakovic, 2019). As already mentioned, the effective tax rate may be higher or lower than the statutory (nominal) corporate income tax rate. The difference may arise due to various adjustments, previously mentioned, to the financial result prescribed by the Law on Corporate Income Tax (depreciation, impairment, non-deductible expenses, etc.). It can be said that an effective tax rate shows how well a business entity manages the costs of corporate tax income. Therefore, taxpayers that do not strategize and plan regarding tax will miss some opportunities, which will probably lead to unnecessary tax risks and costs (PwC Serbia, 2020). The effective tax rate can be used to compare two separate business entities, or when there is a group of business entities, it can be used in the decision-making process related to taxation at the group level or individual taxation. Table 5.1 shows a comparison of statutory and effective CIT rates for different countries and territories.

5.3. Adjustments of revenues and expenses in the tax balance

As already mentioned, the corporate income tax base is the taxable profit reported by the taxpayer in the tax statement. Before taxable profit is calculated, revenues and expenses must be adjusted according to the provisions of Law on Corporate Income Tax before they are entered in the tax statement. Accordingly, certain amounts of revenues and expenses are recognised in tax statements in the full amount, other are recognised partially, and the remaining not recognised at all.

For example, the amounts of expenses disclosed in the income statement are not recognized in the tax report in the following cases: undocumented costs; value adjustments of individual receivables from the person to whom it is owed at the same time, up to the amount of the obligation to that person; gifts and donations given to political organizations; gifts whose recipient is a related party (entity); fines imposed by the authority, contractual penalties and other penalties, etc. (Official Gazette of the Republic of Serbia, 2019). On the other hand, some expenses are allowed to be recognized in the tax report but only in the prescribed amount. For example, the following expenses are recognised in the total amount of up to 5% of the total revenues: expenditures for health, educational, scientific, humanitarian, religious and sports purposes, environmental protection; expenditures for humanitarian aid; expenditures for investments in the field of

culture. Finally, membership fees to trade chambers, federations and associations are recognized as an expense in the tax report up to a maximum of 0.1% of total income. Additionally, representation expenses are recognized as an expense in the amount of up to 0.5% of total income (Official Gazette of the Republic of Serbia, 2019).

Regarding the adjustments on revenues, dividends and profit share by a resident taxpayer, as revenues, are not included in the tax base. Revenue earned by a resident taxpayer from interest on debt securities issued by the Republic, an autonomous province, a local self-government unit or the National Bank of Serbia, is not included in the tax base (Mizdrakovic et. al, 2020). In addition, revenue that a resident taxpayer, established in accordance with the regulations governing investment funds, realizes based on the alienation of property is not included in the tax base. Revenue arising from unused long-term provisions that were not recognized as an expense in the tax period, in which they are recognized, is not included in the tax base in the tax period in which they are reported.

5.4. Literature review

Concerning the existing literature in this field, researchers usually focus on: disclosures of information related to an effective tax rate; tax evasion, profit shifting and the effective tax rate of tax haven states; factors or determinants of the effective tax rate. Regarding the disclosure of information related to the effective tax rate, there are mixed results from studies in this field. Some authors (Flagmeier, Müller, & Sureth-Sloane, 2021) claim that business entities have an incentive to enhance their effective tax rate disclosure when the ratio offers the shareholders' favourable conditions. However, it is important to note that the disclosure of a favourable low effective tax rate will ultimately lead to higher disclosure costs, as such a practice could attract the attention of the auditors of financial statements and tax returns. In research that included 45 Serbian micro-business entities for the period 2017 to 2019, the results showed that these entities, for the most part, disclosed their net income realistically and in accordance with Benford's law (Milojevic, Terzic, & Stanistic, 2020). This means that micro entities in Serbia do not show the tendency to underestimate their income, however the results were not the same when operating profit was tested. In research that covered 108 business entities from Serbia and Croatia, the authors investigated the quality of financial reporting according to the International Accounting Standard 12 – Income taxes (Vrzina, Obradovic, & Bogicevic, 2019). The results revealed that disclosures on income tax in Serbia and Croatia are only partially appropriate because of the imprecise disclosure of deferred tax sources by companies.

The fact that the global average statutory corporate tax rate fell from 49% to 23% between 1985 and 2019, is proof that governments of growing economies favour profit shifting between business entities within the same group (Clausing, Saez, & Zucman, 2021). In terms of profit shifting in Serbia, another study (Vrzina, 2020) claims that there is no significant difference in such practice to tax havens between European multinational companies and their Serbian subsidiaries. Therefore, it seems that Serbia is considered as a state with a preferential tax regime, bearing in mind the relatively low statutory and effective tax rates. On the other hand, tax evasion contributed significantly to economic crime in Serbia in the period 2014-2018, i.e. 28.67% in 2014, and rose to 57.45% in 2018 (Knezevic, Pavlovic, & Aric, 2020).

Finally, authors usually investigate the key factors that influence the effective tax rate of a certain business entity. Traditional factors such as size, leverage, asset composition and profitability, as well as newer ones, e.g. company growth, earnings management and deferred tax, proved to be significant factors of an effective tax rate (Fernández-Rodríguez, García-Fernández, & Martínez-Arias, 2021). However, some specific institutional factors of the country could be also significant: Statutory Tax Rate, level of development, index of economic freedom, GDP growth and institutional quality. In the research conducted on the Indonesia Stock Exchange that covered 53 entities in the period 2015 to 2019, showed that entity size and inventory intensity had a negative effect on an effective tax rate, while profitability had a positive and significant effect (Gita, Partika, & Suciwati, 2021). Research that investigated the relation between the entities' size and the effective tax rate in the Visegrad countries and Serbia revealed that in each country in 2017 and 2018 there was no relation between the size of the entity and effective tax rate (Luty, 2020). The above means that larger entities do not have higher tax burdens (Biernacki & Luty, 2020). In recent research, the authors used estimated econometric models to provide proof that an effective tax rate has no significant impact on the capital structure of the largest companies in Serbia (Kuc & Kalicanin, 2021).

5.5. Research on the management of an effective tax rate of Serbian business entities

This section of the chapter shows the research methodology and results related to how sampled Serbian business entities manage their effective tax rate. The research aimed to provide answers related to the amount of tax paid by the sampled entities and the amount that should have been paid in line with the statutory tax rate. The research results also show if there are business entities with profit before tax and virtually no tax liability in their tax statements, and *vice versa*.

5.5.1. Research methodology

For the purposes of the research, 9,549 annual reports of Serbian business entities were analysed. The research covers the period 2016-2018, and the number of entities randomly selected per year was: 2016 – 3,242, 2017 – 3,197, and 2018 – 3,110. The data on selected entities were downloaded from a publicly available database: <https://data.mendeley.com/datasets/x3z4zx8vwr/draft?a=2851c2e4-afc0-4d60-b2de-ce1fa1b27a30> (Mizdrakovic et. al., 2020). The research focused on the information initially presented in the income statement, focusing on the following statement items: profit before tax, loss before tax, tax expense for the period, and the calculated effective tax rate.

5.5.2. Research results

As previously mentioned, the financial (accounting) result from the income statement represents one of the elements needed to calculate the tax liability in the tax balance. The research results show that the largest number of entities had a positive financial result, approximately 79% of the total number of sampled entities over these years. However, there were 697 entities with a loss before tax in 2016, 668 in 2017, and 661 entities in 2018. Therefore, almost 80% of the sampled entities should be taxpayers of CIT. The following table shows the number of companies in terms of the profit/ loss before tax.

Table 5.2. Profit/loss before taxes of the sampled entities

Year	2016		2017		2018	
	No of entities	%	No of entities	%	No of entities	%
Profit before tax	2,545	78.5	2,529	79.1	2,449	78.7
Loss before tax	697	21.5	668	20.9	661	21.3
Total	3,242	100	3,197	100	3,110	100

Source: own study.

The total amount of profit before taxes in 2016-2018 of these companies was €11,302,791,450. Based on that, it can be assumed that the tax authorities should have collected a total of 1,695,418,718 euros of taxes. However, as mentioned above, due to the adjustment of revenues and expenses in the tax statement, the tax base probably would not be equal to the financial result, as well as the amount of collected income tax. The results show that the total amount of tax expenditure of the sample companies equals €1,268,941,403, which is less than the expected amount of the collected tax by approximately 25%.

Table 5.3. Comparison between the financial and tax result of the sampled entities

Year	2016		2017		2018	
	no of entities	%	no of entities	%	no of entities	%
Entities with negative financial result and positive tax result	60	1.85	55	1.72	55	1.77
Entities with positive financial result and negative tax result	565	17.43	550	17.20	484	15.56

Source: own study.

Table 5.3 shows the sampled entities according to whether they had a positive or negative financial (accounting) result in relation to a positive or negative tax result. The basic idea was to show the number of the sampled entities that made a loss in the income statement, but after adjustments of revenues and expenses in the tax statement recorded a positive tax result, i.e. were obliged to pay a certain amount of income tax. There were only 60 such entities in 2016, 55 in 2017, and 2018 (less than 2% of the total number of the entities). However, there were far more companies that made a profit before tax in the income statement but avoided paying income tax after correcting revenues and expenses in the tax statement: 565 such entities in 2016, 550 in 2017, and 484 in 2018, i.e. approximately 17% of the total sample over the period.

For the first group of companies, the previous section of the chapter lists some of the expenses that were not recognized, or were recognized in part, which led to an increase in the tax base for the reported amounts, namely to the situation that after all the adjustments, a certain company would report a tax profit and a tax expense, although the financial result in the income statement was negative. Regarding the second group of companies, those that reported a profit before tax in their income statement, did not have the obligation to pay income tax. Thus, adjustments lead to a reduction of the tax base because some revenues are not tax recognized. Additionally, companies that had a tax loss in some of the previous five years (reporting periods), and have a reported profit in the current reporting period, can use that tax loss to reduce the tax base. Therefore, the total loss from the previous period reduces the entire corporate income tax base and the tax expense will be equal to zero. It is necessary to remember that the management of companies using the techniques of positive and negative creative accounting can manipulate the amount of profit before tax in the income statement in order to achieve the planned goals. In any case, the percentage of these companies in relation to the total number of the sampled companies is rather high (especially if taking into account the number of companies that made a profit before tax, approximately 2,500 entities over the period).

Finally, the table below shows the results of descriptive statistics concerning the effective tax rate of the companies in the sample.

Table 5.4. Data on the calculated effective tax rate of the sampled entities

Year	2016	2017	2018
Mean effective tax rate	19.53%	16.21%	17.98%
Median effective tax rate	12.47%	13.95%	14.81%
Nominal tax rate	15%	15%	15%

Source: own study.

It can be observed that the mean value of the effective tax rate was 19.53% in 2016, 16.21% in 2017, and 17.98% in 2018. It can be concluded that the mean effective tax rate was higher than the statutory rate of 15% in all these years, and that business entities paid more tax. However, one has to bear in mind that those are mean values and that the median value of effective income tax rate could present the situation more realistically. The reason for the difference between the values are companies' outliers with very high profit tax rates. Therefore, if the median is chosen as the average value, it can be concluded that the companies from the sample have an effective tax rate averaging 13.74%. This rate was much higher compared to the average effective tax rate of public entities determined at approximately 9% in 2017 (Mizdrakovic et al., 2020). It seems that public entities, usually as larger organisations, have found a way to decrease their tax burdens in comparison to the other sampled entities.

5.6. Conclusions

Main purpose of this chapter was to point out the specifics of the tax system of the Republic of Serbia. For the purposes of the research, 9,549 annual reports of Serbian business entities for 2016-2018 were analysed. The research results show that a significant number of the entities had active corporate income tax management that resulted in having no tax burden. In fact, the largest number of companies had a positive financial result, close to 80% of the total number of sampled companies, while the remaining entities recorded a loss before tax. On the other hand, the results of the research reveal that almost 80% of the sampled entities made a profit before tax but had no obligation to pay taxes, while nearly 2% of the entities were in the opposite situation. Regarding an effective tax rate, it was noted that it varied between 16% and almost 20%, the rates higher than the nominal one. However, if the median for the average value is considered, the results of the research show that the sampled entities in Serbia have an

effective tax rate very close to the nominal rate of 15%. If this rate is compared to the rate related to public entities of 8.66%, it can be concluded that Serbian public entities practice active tax management to decrease the effective tax rate. Future research could be focused on the costs of tax collection and their comparison with the average effective tax rate in order to determine whether tax collection in Serbia is effective.

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Summary

This monograph aimed to present the role of accounting in the process of tax avoidance, with a particular emphasis on accounting regulations, intangible assets and fixed assets.

The conclusions in individual chapters were formulated based on theoretical considerations and empirical research. In particular, literature analysis, qualitative and quantitative research are presented.

Research on the literature carried out by Piotr Luty and Rui Costa, based on the SCOPUS database, indicates the lack of international research teams from the Visegrad Group countries in tax avoidance and accounting. This monograph is meant, therefore, as to fill this gap.

Milos Petkovic and Ana Obratovic dealt with the issues of intangible and legal assets and the knowledge-based economy. Intangible assets are subject to the subjectivity of their estimation, which influences the results obtained in companies. The authors also indicate that intangible assets have intangibility components and forms and are a source of value creation. This can enhance value creation when combined with other organizational resources.

Patrik Svoboda pointed out the similarities and discrepancies in the treatment and disclosure of financial information on intangible assets in different financial reporting systems. The results of the study indicate the possibility of using accounting in tax avoidance.

Przemysław Czajor described the relations between accounting and taxes in the group of property, plant and equipment. The author suggested that both accounting regulations and tax law (to a limited extent) concerning PP&E contain solutions that allow entities to influence the view of their financial position. Nevertheless, the most important aspect should be the awareness of the entity's management regarding these possibilities and excellent knowledge of the applicable accounting and tax regulations.

In their research on Serbian companies, Goranka Knezevic and Vule Mizdrakovic addressed the effective tax rate, which is one of the tax avoidance measures

commonly used in the literature on the subject. The results of their research reveal the impact of the management of economic units on the tax burdens.

Summing up, it should be stated that accounting and taxes are related in many respects. Tax optimization, the consequences of which are disclosed in the financial statements of business entities, may indicate the informed use of the opportunities provided by law to reduce the tax burden. However, some activities of individuals are on the borderline of the law or are even contrary to applicable regulations, and therefore, advanced mechanisms to detect corporate tax avoidance are needed.

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