A Study from Slovakia on the Transfer of Slovak Companies to Tax Havens and Their Impact on the Sustainability of the Status of a Business Entity

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Abstract: The main aim of this paper is to provide empirical evidence about profit-shifting to selected tax havens by Slovak companies. This contribution focused on the very rare evidence of use of tax havens by Slovak companies not only in the field of corporate income tax, but also in selected areas of profitability. Two sources of data were used. Lists of Slovak companies with tax haven links were provided by the company, Bisnode, and financial statements of investigated companies were gained from the Finstat database. Based on the available data, the investigated period was between 2008 and 2016. We statistically tested selected indicators (ETR, taxes per assets, ROE, ROA, and ROS) of Slovak companies with direct ownership links to tax havens compared to their counterparts. Our findings suggest that Slovak companies with an ownership link to tax havens pay significantly lower taxes compared to companies without ownership links to tax havens during the period monitored. The aggressive tax planning was not only confirmed by the significantly lower reported values of ETR and taxes per assets, but also by the lower values of ROA. On the one side, Slovak companies with ownership links to midshore tax havens had the highest values of ROE, ROA, and ROS, but on the other side, these Slovak companies reported the highest ETR among the appointed categories (onshore, midshore, and offshore). The lowest taxes paid per unit of total assets were found in Slovak companies with ownership links to onshore tax havens. The analysis was supplemented by the changes of the selected indicators before and after obtaining an ownership link to a tax haven.

Keywords: aggressive tax planning; corporate income tax (CIT); effective tax rate (ETR); profitability; profit-shifting; Slovak companies; tax haven

1. Introduction

Slovak companies, after a period of economic transformation, privatization, and FDI inflows, were not considered to be key players in worldwide business. This is still true, although the general anonymity or secrecy of certain processes, including ownership structures in certain regions, has blocked efforts to fully describe and understand the extent and networks of economic relations. This is mainly in the case of Slovak companies “hidden” inside a web of ownership structures. On the other hand, the number of companies with intensive ownership links with other foreign companies...
has grown significantly (not only because of FDI), partially just because of profit and tax optimization policies. Similar studies focused on Slovak companies are lacking, therefore opening the door for research in this area, specifically in the case of the use of tax havens and their influence on taxation, as well as the differences against purely national companies (no ownership links to a tax haven). Many ratios may be included as proof when considering the consequences (primarily profitability, liquidity, and leverage). However, as profit is the primary effect of business activity and general information about the performance of Slovak companies is lacking, the following study focuses on the different aspects of profitability and the detection of Slovak companies with ownership links to tax havens who pay lower taxes on their earnings before tax.

This paper provides empirical evidence about profit-shifting to selected tax havens by Slovak companies. Regarding profit-shifting, this paper identifies evidence among several profitability and tax ratios that are supposed to differ in tax haven and non-tax haven linked companies. In the case of tax havens, it distinguishes their types, as quite heterogeneous tax regimes and favorable conditions are expected. The results prove which ratios tend to indicate profit-shifting policies and how particular tax haven types differ. Before the research started, a main hypothesis was formulated, including four partial ones. While the main hypothesis focuses on statistically significant differences between crucial ratios, the partial hypotheses consider the influence of size, tax haven type, and industry. All methods and results of the testing of the hypotheses are presented. The results of the research offer certain implications for state authorities and provide proof about the effects of profit-shifting. Implications for businesses are less probable, although the basic principles of fairness in taxation should be implemented into businesses’ corporate responsibility policy.

A sustainable business environment and sustainable taxation policy requires that all stakeholders are responsible, with governments and regulators acting as the keepers of the system and businesses as the funders. As taxation is not just about financial and economic issues but also includes social, ethical, and environmental issues as well as other aspects, a tax system should try to maintain a balance between them in order to ensure sustainable growth. We consider profit-shifting to be a weakness of the current tax system, encouraging businesses to look for more benevolent conditions, but also negatively influencing national budgets. The following paper provides certain evidence about the profit-shifting of Slovak companies, which has not been known in detail so far, and provides a basis for the examination of other issues of profit-shifting in the future.

2. Literature Review and Theoretical Considerations

Many studies have previously examined the channels used for transferring taxable profits out of countries to tax havens [1–3]. Through the use of tax havens, multinational companies can substantially lower their overall tax burden. Intra-firm trade prices, debt-equity structure as well as the relocation of profitable assets are methods through which a company may control the group of national firms that expect to contribute to profit-shifting operations. They primarily affect the cost size and structure and thus influence the size of profit and level of profitability. Istok and Kanderová [4] provided empirical evidence of the use of debt as a channel of profit-shifting out of the Slovak Republic. Their analysis confirmed that the use of interest expenses as deductible expenses is very intensive, as Slovak companies, after transferring their registered offices to a tax haven, reported an increase in interest expenses per asset indicator of 75%. Respectively, companies with ownership links to tax havens reported an investigated indicator increase of 41% compared to their counterparts (those companies with no ownership links to tax havens). The empirical evidence of Istok and Kanderová [5] clearly indicates the trend in the behavior of Slovak companies regarding the use of debt channels as a method of profit shifting. The median values of debt ratio after the transfer of the registered office of Slovak companies to tax havens increased by 7.8%. The median value of the tracking indicator was 1.2 times higher for firms with tax haven links than for companies without links to tax havens. Another study of Slovak companies regarding the use of tax havens was conducted by Khouri et al. [6], who created a model of an international corporate structure and derived a formula, which can be
used to calculate the break-even point in onshore and offshore businesses in regards to taxation. Janský and Kokeš [7] ascertained that tax havens are not limited only to tiny tax havens (tropical islands) and may be found among European countries. Their company-level analysis suggested that profit shifts through debt financing from the Czech Republic to Luxembourg, Switzerland and to a lesser extent, the Netherlands. The main areas of the literature and academic research regarding tax research and profit-shifting techniques are corporate tax avoidance; corporate decision-making, including capital structure and the organizational form; taxes and asset pricing; and the informational role of income tax expense reported for financial accounting [8,9]. Tax planning and tax optimization play a crucial role for any company in the reduction of costs, which is why tax planning activities are an inseparable part of strategic decisions [10]. Research by Graham et al. [11] pointed out that 69% of international executives classify reputation as being important, but financial accounting incentives play a more relevant role. On the other side, 84% of the top management of public traded companies care about GAAP ETR.

International or multinational companies usually keep in mind their profits at least from a double perspective—where to expand and earn more (market point of view) and what is the level of tax burden they would suffer from (taxation or financial point of view). Of course, other perspectives are relevant (e.g., political stability, workforce’s availability and quality, market size, infrastructure), but in the case of FDI, the literature emphasizes their determinants’ selectively due to industry specification, region, or customer segment. The authors of [12–16] found that double tax treaties (DTT) are a key determinant of FDI routed through the Netherlands. The importance of DTT results largely in the reduction of dividend withholding tax rates (also the reduction of tax rates of interests and payments regarding intellectual property, among others). Martinez [17] identified the potential determinants of tax aggressiveness in firms, appreciating characteristics of the firms, environmental attributes, gatekeepers’ restrictions, and company incentives. Abdixhiku et al. [18] found a positive relationship between tax evasion and the tax rate and identified minor effects on the macroeconomic environment (focused on transition economies). Abdixhiku et al. [19] also found that smaller firms, individual businesses, and firms in sectors that are less visible to tax administration are more likely to become involved in tax evasion. Jones and Temouri [20] examined the determinants of a multinational enterprise’s (MNE) decision to set up tax haven subsidiaries. They found that the variety of capitalism in an MNE’s home location and the level of technological intensity has a strong impact on this decision. Their results also indicated that the home country corporate tax rate has a minimal impact (corporate tax liberalization is unlikely to deter MNEs from undertaking setting up subsidiaries in tax havens).

As profit is considered to be the primary motivation in business, both theory and practice gives substantial attention to it (from the point of view of its maximization, sustainability, and determinants). Internal factors (age, size, share, capital, liquidity) and their contribution to profitability were studied by Samiloglu and Demirgunes [21] and Asimakopoulos et al. [22]. Nanda and Panda [23] confirmed firm-specific determinants as dominant players in the generation of corporate profitability and positively identified the size of a firm and its liquidity as crucial factors, while leverage was considered as a variable with a negative influence (except for during a crisis period). Schiefer and Hartmann [24], and Inci and Lee [25] observed industry-related factors. Raza et al. [26] conducted similar research between Pakistani companies, claiming that both internal and industry related factors have a similar influence on profitability. Markauskas and Saboniene [27] highlighted two main factors with significant influence—competition and the presence in foreign markets. Macroeconomic factors (economic growth, interest, and exchange rates) were studied by Dhasmana [28]. Tuncay and Cengiz [29] focused on the top 500 largest industrial companies in Turkey, stating that exchange rates and interest payments have the most negative effects on their profitability, while inflation and GDP growth had positive effects. On the other hand, they emphasized the fact that enterprises that mainly export are not so negatively influenced, as they may diversify their risks internationally.

In recent years, the most attention has been given to the influence of corporate income taxes, not only in the case of profitability, but also in connection with the general behavior of companies.
Since tax rates differ from one jurisdiction to another, the reduction of tax expenses has been identified as a good opportunity for companies running businesses globally or those moving headquarters of subsidiaries into territories with more favorable tax regimes [30–32]. It also motivates former national companies to become international, and this is not only due to the ability to penetrate new markets. According to Forbes magazine, the top 15 of the 100 publicly-traded companies in the USA passed 776 billion USD into tax haven countries in 2012, with the record being set as 18 tax haven locations for one company and 174 affiliates of one company in tax havens [33]. Thus, significant differentiation between companies with and without tax haven links is expected (not automatically in the case of the size of the profit, but mostly in the case of its relation to other variables and the consequent corporate taxes paid) and this was confirmed by almost all the studies released in the past few years. Becker, Fuest, and Riedel [2] revealed that companies with links to tax havens report less profit and pay less taxes than companies with no links. This fact is gaining increasing importance with the growth of the economic power of multinational companies worldwide. The studies of Grubert and Mutti [34] and Hines and Rice [35] showed that the pre-tax profitability of US affiliates was already higher in tax havens in the decade of the pre-internet era. On the one hand, offshore jurisdictions are labelled as “the cornerstones of the process of globalization” [36] within the quite natural processes of capital flows that follow. On the other hand, tax evasion and profit-shifting have become an integral part of aggressive strategies and tax planning [37]. Moreover, tax havens have helped in the case of many (even politically) sensitive cases to hide the structure of owners and following outflows of cash. According to Driffield et al. [38], changes of ownership are affected by the foreign affiliate’s relatedness with its parent’s sector, as well as by the affiliate’s maturity. Edwards et al. [39] indicate that greater ownership concentration typically weakens the link between managerial pay and firm profitability. The investigation of Godar [40] resulted in findings indicting that the first-time appearance of a tax-haven investor in the ownership chain reduces the reported profits by German-based affiliates by 61% if a majority of the affiliate is held by a single investor.

Differences between the profitability of companies with and without tax haven links are changeable due to several factors. Schwarz [41] distinguished the more mobile parts of multinational enterprises with financing or service functions from real investment decisions and production itself, with companies having different elasticity according to the location and profit-shifting. He proved that high-tax countries have a lower equity ratio than affiliates in tax havens. Fuest and Riedel [42] focused on developing countries and showed how firms belonging to a multinational group obtained a lower ratio of return on assets than domestic firms, while multinationals with related parties in tax havens did not obtain significantly lower ratios compared to national firms. Janský and Prats later [43] emphasized that multinational companies with links to tax havens reported 1.5% less pre-tax profits per assets, paid 17.4% less in taxes per assets, and their effective tax rate was 30.3% lower. More authors [22,25] have studied the influence of size on profitability, identifying a positive relationship between the growth of a company and its profitability; however, Markman and Gartner [44] found no such relationship. These studies were not primarily oriented on tax havens links. On the other hand, Afrasinei et al. [32] found that large companies present in tax havens obtain a return on equity ratio 20% lower than small companies and pay 1.5% lower taxes than small businesses. Potin et al. [45] found a relationship between tax planning and return on assets (ROA). Companies practicing aggressive tax planning are related to low ROA, while companies practicing moderate tax planning report high values of ROA. Their findings further indicate that no relationship exists between corporate governance and tax planning and ROA. There are many investigations regarding the proxies to measure tax aggressiveness. Many papers use the BTD (book-tax Differences), as this indicator measures the difference between accounting and tax profit (proxy of tax aggressiveness) [46,47]. Probably the most often used indicators to measure tax aggressiveness are related to the effective tax rate (ETR). The ETR on the accounting profit (Rate_GaapETR) is calculated as the total expense with taxes on profit divided by the profit before taxes (GAAP ETR) [8]. Ferreira, Martinez, Costa, and Passamani [47] also pointed out the variations of the mentioned measures, the total effective (ETRt) and the current effective rates (ETRc),
which can be calculated depending on whether deferred taxation is considered. Many authors [48,49] highlighted the dynamic measure of tax aggressiveness, resulting in the documentation of the variation in tax aggressiveness activity without the need to focus solely on a limited set of static transactions from a single period. As the output, the Rate_CashETR (effective tax rate on cash) defined as taxes on total profit paid divided by the profit before taxes could be applied (the short-term attitude). Da Silva and Martinez [49], and Motta and Martinez [50] presented a Brazilian measure named the effective tax rate on the added profit (Rate_DVA), which is defined as the tax burden of DVA divided by the total value added to distribute.

Sustainability and fairness are interconnected issues in the designing of a tax system. A policy that strives towards greater tax fairness can improve the degree of sustainability within a tax system. With this in mind, historically, one-sided tax policies that only promote growth-oriented regulations have been argued to be an efficient way to achieve economic sustainability. This is because there seems to be a correlation between taxing for growth and the economic efficiency driven reforms over recent decades and increases in income inequalities [51].

3. Methodology and Data

3.1. Procedure and Methods

The objective of this study was to identify empirical evidence regarding profit-shifting to selected tax havens with a focus on the profitability and tax ratios of Slovak companies in the period of 2008 to 2016. Within the period of 2008 to 2016, no ordinal year-by-year analysis was made. On the other hand, the period fluctuated a bit, as companies were getting linked to tax havens continuously and in different years, their numbers varied and certain parts of them were more or less inactive.

We considered a company to have links with a tax haven in the case of (partial or total) ownership through the company registered in offshore, midshore, or onshore jurisdiction.

We divided the jurisdiction marked by Bisnode [52] as tax havens into three categories:

- **OFFSHORE JURISDICTIONS (OFF):** Bahamas, Belize, Bermuda, British Virgin Islands, Gibraltar, Guernsey (United Kingdom), Jersey (United Kingdom), Cayman Islands, Marshall Islands, the Netherlands Antilles, Panama, Man Island, and Seychelles;
- **MIDSHORE JURISDICTIONS (MID):** Hong Kong, Cyprus, Malta, the United Arab Emirates, and the United States of America;
- **ONSHORE JURISDICTIONS (ON):** Liechtenstein, Latvia, Luxembourg, Monaco, and the Netherlands.

According to Bisnode [53], at the end of 2018, 4881 Slovak companies had direct ownership links (equity linkage) to tax havens, which means that since 2005 (1510), a year on year increase was recorded. An annual increase has not been violated since 2015, when certain actions of the BEPS project (base erosion and profit shifting) and AEOI (automatic exchange of information) were implemented. On the other side, since 2015, the pace of growth has slowed down and in the case of the offshore category a yearly decrease has been recorded since 2015. We used the list of tax havens provided by the company, Bisnode. However, this list is not complete as there are many jurisdictions missing—tax havens which are used intensively by Slovak companies. One of the missing jurisdictions in Slovak conditions should definitely be the United Kingdom. Currently, around 1300 Slovak companies have direct ownership links to the UK (Bisnode) [52]. Thus, according to our opinion, the list of tax havens may seem incomplete and the group marked as “without links to a tax haven” may also contain a few tax havens.

The categorization of tax havens was primarily based on its main motives, which could be obtained by the owners through certain jurisdictions and the status categorization of a single tax haven [16,54]. Offshore jurisdictions or pure tax havens are generally defined as jurisdictions in which the financial sector is disproportionally more significant than the domestic economy. Generally,
in offshore jurisdictions, no corporate income taxes (CIT) from foreign sources exist, so the effective tax rate is equal to null. What is even more important is the fact that many offshore jurisdictions have no commercial register of companies, or if there is any, then it is publicly unavailable. This fact ensures the high level of anonymity of the UBO (ultimate beneficial owner). The onshore category mainly contains jurisdictions with a diversified economy, wide network of signed double tax treaties, possibilities to use selected EU directives, and a classic tax system designed to provide opportunities for substantial tax cuts for companies (e.g., the existence of special preferential tax regimes). The formation of companies in onshore jurisdictions usually requires a higher amount of money, while the benefits other than tax optimization mainly lie in the flexible arrangement of ownership structures, asset management, and asset protection. The midshore category is often used as a subset of onshore jurisdictions and we decided to split the onshore category partially to its subset (midshore). This was based on the assumption that according to the previous outputs, different results could be obtained depending on the method used and techniques of profit shifting, or if different intensities exist between these techniques. Jurisdictions from the midshore category are often used by Slovak companies mainly to achieve tax incentives due to their overall underlying tax system and relatively low costs needed for the formation and management of companies in the first and following years compared, for example, to the Netherlands or Luxembourg.

The study was divided into several stages:

- First stage—comparison of the profitability between companies with and without tax haven links.
- Second stage—classification analysis and quantification of the differences between companies of different sized groups (micro, small, medium, large), different tax haven types (offshore, midshore, onshore), and different industries (SK NACE).
- Third stage—comparison of ratios before and after a company was linked to a tax haven.

Each stage corresponded to a partial objective derived from the main objective and a hypothesis was assigned to each one (Table 1).

### Table 1. Formulation of partial objectives and hypotheses.

| Objective | Main Hypothesis, H_0 | Alternative Hypothesis, H_1 |
|-----------|----------------------|-----------------------------|
| O1—To compare profitability and tax indicators between companies with and without ownership links to a tax haven | The distribution of ratios between companies with and without a tax link is equal | The distribution of ratios between companies with and without a tax link is not equal |
| O2—To quantify the influence of a company’s size | There is no statistically significant difference between indicators generated by companies of different sizes | There is a statistically significant difference between indicators generated by companies of different sizes |
| O3—To quantify the influence of a tax haven type | There is no statistically significant difference between indicators generated by companies from different tax havens | There is a statistically significant difference between indicators generated by companies from different tax havens |
| O4—To quantify the influence of an industry sector | There is no statistically significant difference between indicators generated by companies from different industries | There is a statistically significant difference between indicators generated by companies from different industries |
| O5—To compare profitability and tax indicators before and after having a link | There is no statistically significant difference between indicators before and after having a link to a tax haven | There is a statistically significant difference between indicators before and after having a link to a tax haven |

Source: own processing.
During the analysis and synthesis, the following methods were used. Descriptive analysis of the profitability focused on the comparison of several groups of companies, specifically between companies with and without tax haven links in 2016. This year was chosen because of the obvious fact that the Bisnode [52] database offers the latest and updated data and list of companies with tax haven links up to the end of 2015. Thus, we used more or less settled data from 2016, as there were some companies having links only since 2015 (and the partial objective focused also on relationships between before-after linking data). It is possible to compare them in 2017, however, it is not clear whether the links to tax havens still remained, as the database was not updated yet. Profitability was analyzed through 5 ratios—return on equity (ROE), return on assets (ROA), return on sales (ROS), effective tax rate (ETR), and tax-to-assets (T/A). All indicators in both groups of companies were processed and the median values were interpreted. The Shapiro–Wilk test was used for testing the normality distribution. Because of its result, the non-parametric tests were applied afterwards. The Mann–Whitney U test was used for testing for significant differences between companies with and without links to a tax haven. Statistically significant differences between size groups, tax haven types, and selected SK NACE sectors were tested through the Kruskall–Wallis test in the second stage of the research.

The third stage of the analysis aimed to quantify and compare profitability before and after companies were linked with any of the tax havens. Tax havens were divided according to the type of jurisdiction (offshore, midshore, onshore). Profitability was interpreted from two aspects—whether a statistically significant difference existed between the pre- and after- period and in which “direction” the ratios tended to change. Other than normality testing (Shapiro–Wilk test), the Wilcoxon signed ranks test (before-after) was also applied and Pearson’s correlation coefficient was used for the analysis of relations between the values of ratios and capital used.

3.2. Data

The list of companies with links to a tax haven was obtained from the Bisnode database, which also partially offered the categorization of countries as tax havens. From this database, the sample of companies that moved to a tax haven in the period of 2005 to 2015 was gained. Financial statements were obtained from the Finstat database covering the period of 2008 to 2016 (the database even offers some older data, but we considered that to be rather unreliable as the original documents were just scanned and certain parts of balance sheets and profit statements were missing). Therefore, minor changes were needed in the case of both databases’ synchronization, and the final analysis covered the period of 2008 to 2016. The Finstat database was used for the calculation of profitability and tax ratios of both groups of companies—with and without a tax haven link. Although the Finstat database also includes profitability ratios, all used ratios were newly calculated as we needed to have the construction of the ratio under control—specifically because the gross profit was used instead of the net profit. Moreover, partial determinants of the ratios were also needed (profit, assets, equity, sales, taxes paid) in order to identify positive or negative influencers, thus, as the primary source of data, financial statements from the Finstat database were used.

The list of companies from Finstat was changeable due to natural economic developments (newly born, merged, liquidated, or bankrupted companies) and covered all business entities registered at the business register in each year, e.g., 197,193 entities in 2016, while 4250 was the total number of companies with links to a tax haven. In order to obtain the research sample, it was necessary to exclude:

- Sole traders;
- Companies without complete data (incomplete financial statements);
- Unidentifiable companies (missing or incorrect registered numbers);
- In selected stages, companies with no data before the link (missing data or company was established in the same year as the link was created) or after (company changed the ownership meanwhile or was cancelled).
Therefore, in the case of individual ratios, the number of companies in the sample was not equal. The analysis was focused on three profitability ratios and two tax ratios, which were based on the gross profit, total net assets, equity, and sales from ordinary activities (sale of goods, services, products). In the case of the research sample’s characteristics, all ratios were processed and interpreted as median values in order to minimize the influence of outlier values in individual ratios.

4. Results

The first part of the analysis was devoted to a comparison of the basic differences between companies with tax links and those without links to a tax haven. Five indicators were taken into consideration presenting the profitability and consequent tax relations. A summary of all variables used in the analysis is presented in Table 2.

| Outcome Variables (Ratios, Dependent Variables) | Input Variables (Source Data) | Classification Variables (Descriptive Statistics and Dependability) | Independent Variables (Correlation) |
|-----------------------------------------------|-----------------------------|----------------------------------------------------------|----------------------------------|
| ROE                                           | EBIT                        | SK NACE category                                        | equity                           |
| ROA                                           | equity                      | size (micro, small, medium, large)                      | assets                           |
| ROS                                           | total assets                | tax haven type (ON, OFF, MID)                            | share of foreign capital         |
| ETR0                                          | sales                       | tax haven link (yes, no)                                |                                  |
| ETR1 (without license payers)                  | taxes paid                  | tax haven link (before, after)                          |                                  |
| Tax-to-assets                                  |                             |                                                          |                                  |

Source: own processing.

The core of the assumptions, consequent hypothesis, partial objectives, and following methodology was focused on the quantification of profit-shifting evidence measured through the above mentioned outcome variables. Independent variables were used for the basic evaluation of the strength of relationship. We consider these as only supplemental as they represent volume variables, and thus they are not numerous. However, in the situation when basic knowledge about profit-shifting issues in Slovakia was missing, we preferred to use other hypotheses.

After all unnecessary companies were eliminated, the sample of tax haven companies consisted of 2825 units from a total of 186,887 companies. Descriptive statistics about both groups are presented in Table 3.

| Link with Tax Haven | ROE | ROA | ROS | ETR1 | ETR0 | Tax/A |
|---------------------|-----|-----|-----|------|------|-------|
| 2016                |     |     |     |      |      |       |
| No link             | 12.39 | 1.83 | 3.18 | 17.75 | 27.73 | 2.44  |
| Link                | 7.34  | 0.15 | 2.67 | 1.56  | 17.89 | 0.72  |
| No link             | 13.15 | 1.68 | 1.53 | 10.65 | 27.92 | 2.58  |
| Link                | 7.11  | 0.00 | 2.20 | 0.54  | 19.4  | 0.78  |
| 2014                |     |     |     |      |      |       |
| No link             | 14.77 | 1.73 | 3.48 | 21.05 | 21.89 | 2.11  |
| Link                | 8.3   | 0.00 | 1.75 | 0.00  | 12.95 | 0.56  |

Source: own calculations based on Finstat.sk data.

Generally, companies with tax haven links reached lower values of their indicators (except in the one case of ROS) than companies without a tax haven link. While in the case of returns on sales, the difference was lower and the data was quite homogeneous, and the gap between companies in both groups in the return on equity was significantly higher. This points to the fact that “reward” measured in the form of gross profit is lower in tax haven based companies when compared with the capital invested (equity). The difference between the ROE and ROA ratios was primarily generated due to the level of indebtedness. While between 2014 and 2015, the size of debt went up (average growth was
16.5%), in 2016, the debt decreased (−14%). The proportion of debt towards the assets’ size was quite stable, varying from 84% in 2014 to 81% in 2015 and 2016. On the other hand, the share of taxes paid on assets showed us that companies with tax haven links pay significantly less in taxes than companies running a business without tax haven links.

We also paid significant attention to the ETR1 ratio, although its size is partially deformed. The reason is that in the exception of a standard income tax rate at the level of 22% (currently 21% since 2017, 23% in 2013, and 19% before 2013), since 2014, the income tax act introduced a so called “tax license”, in other words a “minimal tax” (480€, 960€, or 2880€) dependent primarily on the income earned. Thus, the ETR1 ratio has been deteriorated by these “fixed taxes” in the case of companies that are operating at a loss, or in the case of profitable companies expected to pay less in taxes than the size of a tax license.

It is obvious that a difference in the ETR between companies with and without links exists (1.56% vs. 17.75% in 2016). The influence of tax licenses is shown through the ETR0 ratio (expressed after tax license payers were excluded), or more specifically through the difference between ETR1 and ETR0. For example, in 2016, when ignoring tax licenses, the ETR0 in the case of tax haven links would be 17.89% instead of the above stated 1.56%. The median value of the ETR before 2015 was zero, as most of the companies paid neither taxes nor tax licenses.

Other than the above-mentioned descriptive statistics, the test also revealed statistically significant differences between tax haven and non-tax haven companies. In the case of all indicators, the normality was tested. According to the results of the Shapiro–Wilk test, we rejected the hypothesis about the normal distribution of values. Thus, the non-parametric test was used. Once again, five indicators were compared and tested on the data from 2016. A significance level of 0.05 was used and applied in the case of the Mann–Whitney U test (see Table 4.).

According to the results of the Mann–Whitney U test, the null hypothesis was rejected, and we conclude that statistically significant differences between companies with and without a tax haven link exist, as was previously indicated in the descriptive statistics.

Within the group of tax haven based companies, the situation in the profitability was changeable in time, and rather heterogeneous as to the structure (region, company’s size). In the case of the ROE, the highest value of the indicator was found in the category of medium enterprises (17.96%), while microenterprises reached only about 3.99%. Large enterprises gained the highest profitability in the ROA (5.36%) and ROS (3.23%), while in the case of the ETR, they paid the highest tax rate when comparing the taxes paid and profit generated (22.3%). The lowest ETR value was reached in microenterprises (−0.15%), and its negative median value was generated due to the licenses paid while suffering from a loss. In the case of tax/assets relation, the most positive results were revealed in the microenterprises category (0.57%) (See Table 5.).
Table 5. Descriptive statistics by size groups.

| Size    | Micro     | Small     | Medium    | Large     |
|---------|-----------|-----------|-----------|-----------|
| ROE     | 0.039889661467 | 0.165089693570 | 0.179597966689 | 0.137663277074 |
| ROA     | 0.000460669599  | 0.040478095888  | 0.052176375702  | 0.053649347402  |
| ROS     | 0.019020833895  | 0.029995292083  | 0.030498593567  | 0.032361152949  |
| ETR     | 0.001492153949  | 0.226958219665  | 0.222945280991  | 0.22971006865   |
| T/A     | 0.00568390398   | 0.010996496237  | 0.013366992243  | 0.012739962461  |

Note: The “Bold” values indicate the “best” values in the individual indicators and the respective sorting categories (micro, small, medium, large, MID OFF ONSHORE havens). Source: own calculations.

Results from the Kruskall–Wallis test proved that significant differences exist between the four groups of companies (size groups) in all indicators except in the tax-to-assets indicator. Its p-value = 0.075, thus we did not reject the null hypothesis about no statistically significant differences between companies. Although this test is not as strong as the ANOVA test, the absence of normal distribution led us to apply the Kruskall–Wallis test. The results of this test are presented below (see Table 6.).

Table 6. The influence of the group sizes on the ratios—Kruskal–Wallis Test.

| Test Statistics a,b |
|---------------------|
| ROE-hz      | 50.327 |
| ROA         | 166.206 |
| ROS         | 883.7  |
| ETR         | 233.574 |
| T/A         | 6918    |
| Df          | 3       |
| Asymp. Sig. | 0.000   |

Note: a. Kruskal–Wallis Test, b. Grouping Variable: Size; Source: own calculations.

When taking into consideration the geographical location of each tax haven, the situation in the distribution of ratios was similar. Businesses with links to midshore tax havens reached the highest return on equity with 10.04%, and the same situation was revealed in the case of the return on assets (1.3%) and return on sales (3.04%). The lowest taxes paid per unit of assets were found in onshore businesses (0.53%). The highest effective tax rate was found in the case of midshore tax havens (10.03 %), while the lowest one was in onshore businesses (see Table 7.).

Table 7. Descriptive statistics by tax haven types.

| Region    | OFFSHORE | ONSHORE | MIDSHORE |
|-----------|----------|---------|----------|
| ROE       | 0.012883240038 | 0.069439098301 | 0.100376336655 |
| ROA       | 0.000000000000 | 0.000000014742043 | 0.013230738199 |
| ROS       | 0.017339448807 | 0.017851078715 | 0.030441031236 |
| ETR       | 0.000191522954 | 0.000000000000 | 0.100269754589 |
| T/A       | 0.008320007512 | 0.005309974454 | 0.009467783824 |

Note: The “Bold” values indicate the “best” values in the individual indicators and the respective sorting categories (micro, small, medium, large, MID OFF ONSHORE havens). Source: own calculations.

Results from the Kruskall–Wallis test proved that significant differences exist between companies from different tax haven types. In the case of the four indicators, the null hypothesis about no statistically significant differences between values was rejected. Only the p-value of the return on sales was higher than the significance level of 0.05 (0.182), so in this case, the null hypothesis was not rejected (see Table 8.).
Table 8. The influence of the tax haven type on the ratios—Kruskal–Wallis Test.

| Test a,b | ROE-hz | ROA | ROS | ETR | Tax/A |
|----------|--------|-----|-----|-----|-------|
| Kruskal-Wallis H | 7581 | 22,128 | 3413 | 40,600 | 14,045 |
| df | 2 | 2 | 2 | 2 | 2 |
| Asymp. Sig. | 0.023 | 0.000 | 0.182 | 0.000 | 0.001 |

Note: a. Kruskal Wallis Test, b. Grouping Variable: Region. Source: own calculations.

Similarly, the indicators’ values were also analyzed as being potentially dependent on the industry type. For this reason, the SK NACE categorization was used. Except in the case of the return on sales, in all remaining indicators, the differences between SK NACE groups were significant. It may be stated that the difference in the size of assets strongly contributed to those variations as a huge variability exists between the production and service-oriented business types. The highest return on assets was gained by companies focused on industrial production (3.3%) and transportation companies (2.2%), while in real estate and construction, the profitability was negative. Otherwise, the lowest positive profitability was generated by professional and scientific activities and administration services (0%). Significant differences in the tax-to-assets ratio were identified within both variables—taxes and assets. Thus, the size of assets is not absolutely relevant in each case and the lower taxes paid may overwhelm the “investments and property” effects. Generally, the highest proportion of taxes paid per assets was gained in education (1.95%), in the information and communication industry (1.07%), followed by transportation (1.06%). The lowest proportion was generated by energy production (0.06%) and real estate (0.18%).

The lowest return on equity was generated in the construction industry (0.99%), while the other activities generated 47% (although there were only 14 companies of this type). The lowest effective tax rate was reached by tourism companies (~0.9%), indicating that they mostly paid fixed taxes (tax licenses as they were loss-making firms). A negative median value was also reached by real estate and construction companies. The lowest positive ETR (taxes or licenses paid in the case of being profitable) was reached by administration (0%) and financial and insurance companies (1.14%), while the highest proportion of taxes and profit was found in transportation (21.48%).

As the previous paragraphs focused more on actual differences in the chosen indicators in 2016, the following ones will pay more attention to the development in time and compare the situation before and after getting linked to a tax haven. The second part of the analysis of tax havens focused on the profitability and tax ratios between two groups of companies. Firstly, indicators before and after getting a link to a tax haven were analyzed. Two periods were compared here, the year of linking was identified (year X), then data from a year before (X − 1) and year after (X + 1) was processed, compared, and testified. The distribution of tax haven companies over the examined years is shown in Table 9.

Table 9. Number of companies linking with a tax haven.

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Number of companies | 2469 | 2697 | 2910 | 3168 | 3734 | 3951 | 4362 | 4701 | 4777 | 4796 | 4881 |

Source: BISNODE database.

In total, 3886 companies linked to tax havens in the selected period of 2008 to 2015 for which the name list was available. This number is a cumulative count, so it covers all companies as they gradually linked to a tax haven. From those, a certain portion was not taken into consideration, as they missed necessary data, or they linked with a tax haven just in the year of their establishment, so it was not possible to compare X − 1 and X + 1 data, or they were liquidated soon after a link (sample of 1492 companies before the link, 2321 after the link). After the pairing of companies (with an identical list before and after), the final sample varied from 1002 companies (ROS) up to 1262 (ETR). Samples were not equal because of the above-mentioned missing data (mostly earnings and sales).
After the Shapiro–Wilk test, we rejected the hypothesis about the normal distribution of data. After the application of the Wilcoxon signed ranks test results, the hypothesis about no significant differences between indicators—return on equity, return on assets, return on sales, and effective tax rate—was not rejected. On the contrary, the null hypothesis was rejected in the case of the tax-to-assets ratio (see Table 10).

Table 10. Wilcoxon signed ranks test results.

| Test Statistics a | ROE  | ROA   | ROS   | ETR  | T/A   |
|-------------------|------|-------|-------|------|-------|
| Z                 | −1311 b | −1673 b | −0.538 b | −0.908 c | −13,171 b |
| Asymp. Sig. (2-tailed) | 0.190 | 0.094 | 0.590 | 0.364 | 0.000 |

Note: a. Wilcoxon signed ranks test, b. Based on negative ranks, c. Based on positive ranks. Source: own processing.

The results in this indicator were caused by the relatively constant level of taxes (+0.17%) and, on the other hand, the declined total assets (−9.39%). As was already mentioned, during the investigated period, the nominal corporate income tax rate was changed several times, and tax licenses were introduced. While the value of total assets grew relatively constantly (7.6%–8.5%), the value of taxes relatively rapidly leaped—in 2013, by 75% (the change of nominal CITR from 19% to 23%), and in 2015, by 51% (introduction of tax licenses). This output is supplemented by the results of Ištok, Kanderová, and Kristofík [55], who provided empirical evidence that Slovak companies, after relocating their registered office to tax havens, report significantly lower values of land and structures per non-current assets, and that Slovak companies decline in their value of total assets rather than increasing after getting the ownership link to a tax haven.

In the case of the ROE and ETR, the indicators went down (38% in ROE and 36% in ETR) in most companies. In the case of the ROA and ROS, the growing indicators prevailed (41% in ROA and 37% in ROS). Thus, we may conclude that the share of taxes per assets was the only indicator in which the difference in size before and after the link was statistically significant. This indicator grew in 54% of companies, while in 17%, it went down, and 29% of results were tied.

Anyway, in all indicators, the share of the tied results was quite huge (between 24% and 30%). The primary reason for this is the extremely high number of companies that recorded zero sales, both before and after getting a link to a tax haven. On the other hand, their share decreased, while in 2008, they made up 28% of all businesses, and in 2016, this proportion was 17%. If the company is passive—no sales or relatively low—then there is a justified assumption that the main motive regarding the link to a tax haven is the anonymity of the ultimate beneficial owner.

The Pearson’s correlation coefficient did not prove a significant influence of the equity, total assets, or the share of foreign capital on the ratios (regardless of the classification criteria). As this analysis was supplemental, we did not add more variables into the examination. Our objective in the research to come is to focus on these issues in detail.

Anyway, we are aware of potential biases such an analysis may bring. Specifically, service and production oriented businesses are selectively sensitive to assets. Thus, higher investments and more assets does not ensure higher sales, profit, or profitability. Companies may split headquarters and production facilities, and split, merge, or lease employees with consequent effects on costs, productivity, and profits. Employment, and current assets as well, are unstable categories that frequently change the time, so even their fixation (in financial statements) does not reflect the overall situation at all. However, these and similar “blind spots” of financial accounting are quite frequent and are accepted as a certain limitation of all accounting based quantifications. We avoided the confrontation between ratios as we consider them too dependent on each other, thus we tried to minimize their misinterpretation or a too obvious direct relationship.
5. Discussion and Conclusions

From a long-term perspective, the number of companies with a link to any tax haven is growing. The growth rate has slowed a bit, partially as a result of the Anti-Tax Avoidance Directive (2017/952, 2016/1164) [56,57] and also individual measures taken in EU member countries, but the total number has still grown, reaching 4881 Slovak companies in 2018, while there was a decrease in the Czech Republic (Bisnode) [52]. More favorable tax regimes are the undisputed advantages that companies look for when moving to or establishing new headquarters. Afterwards, crucial effects in profits, profitability, and paid taxes are expected.

Based on the data from 2016, differences (measured by descriptive statistics) in the profitability and selected tax ratios of tax haven and non-tax haven companies were obvious. Statistical tests showed that they were also statistically significant in the case of all ratios and the null hypothesis was rejected. The highest difference was found in the effective tax rates where tax haven companies paid only about 10% when compared with the second group of companies. Although the ETR was strongly deteriorated by tax licenses and “fixed taxes paid” and therefore was not expressed directly as a proportion to profit, even when excluding companies paying tax licenses, their share of taxes paid would be just 65% from the taxes paid by non-tax haven companies. On the other hand, the difference between the ETR1 and ETR0 (with and without tax licenses involved) proved to have quite a significant share of tax license payers among tax haven companies (paying a license because it is operating at a loss or only has symbolic profit). In 2016, their share was 41%, and after the tax licenses were introduced, tax collection (measured in the research sample of tax havens) grew by 16% in 2014 and 51% in 2015. The ETR median value before 2015 was 0 and taxes were paid mostly by large companies. The results of our analysis are very similar to the findings on the ETR by many authors who conducted investigations in this field [2,7,32,40,42,43].

We provided empirical evidence of profit-shifting not only through the ETR, but also by analyzing ROA. Similarly to Potin, Silva, Reina, and Neto [45], we found that Slovak companies present in tax havens report a lower ROA compared to their counterparts, which is more evidence of the practice of aggressive tax planning. Onshore businesses paid the lowest taxes when compared with gross profit and midshore businesses paid the lowest taxes when compared to total assets.

When assessing the previous research on Slovak companies [4,5], we can conclude that debt as a profit-shifting technique (before and after getting links to a tax haven) is used more by Slovak companies with ownership links to a midshore category (mainly Cyprus). Regarding tax optimization, it is essential to recognize interest expenses as a tax-deductible expense under conditions that consider the so-called thin-capitalization rules and the EU directive on interest and royalty payments (the EU Interest and Royalties Directive). While the European directive can be used between associated (based on the mandatory fulfilled conditions, e.g., minimum ownership interest) companies of different EU member states, thin-capitalization rules are unilateral measures at the national level. Thin-capitalization rules were introduced in the Slovak Income Tax Act [58] by its amendment, which has been effective since 2015, allowing the possibility of interest and associated costs for loans and borrowing to be included up to a maximum of 25% of EBITDA into tax deductible expenses. Another important tool not only in tax optimization regarding interest expenses is the existence of a signed double tax treaty (DTT) between the Slovak Republic and the jurisdiction of the final recipient. Slovakia has no current signed DTT with any country from the offshore category. On the other hand, since 2015, based on the automatic exchange on information (AEOI), many offshore jurisdictions are contractual parties to Slovakia in the field of tax and bank information exchange. Consequently, the 35% withholding tax is not applied to the payment of these contractual jurisdictions.

The final examination focused on the comparison of ratios before and after getting a link with a tax haven. The null hypothesis stated that no statistically significant difference exists, while the alternative hypothesis proclaimed the opposite. The objective assigned to this hypothesis was motivated by the fact that in 2016, the difference between tax haven companies and non-tax haven companies was significant. The limitation of the sample in the case of this testing was more intensive than in previous
ones, as some companies were eliminated because of missing data before (e.g., privacy in financial statements, which was evident in the past) or after (e.g., liquidated companies or those leaving a tax haven) and following the pairing of companies with both available datasets. The applied tests did not reject the null hypothesis regarding no significant differences in the case of the four indicators. Only in the case of the tax-to-assets indicator was the null hypothesis not rejected, and an alternative was confirmed, thus enabling the conclusion that the relation of taxes-to-assets changed after getting a link. A huge share of tied results was identified, with companies having the same value before and after, mostly because of no activity—zero sales were generated by 28% of companies in 2008 and 16% in 2016.

The comparison of tax havens vs. non-tax havens and before-after data is quite interesting. In the first case, the differences were confirmed, while in the latter case they were rejected (excluding the tax-to-assets ratio). It means that currently (2016), statistically significant differences between the ratios exist; however, a two year period (before-after) is insufficient to adequately demonstrate the full effect of the tax haven influence and requires more years to become evident.

Within the group of tax haven linked companies, the situation in the profitability was changeable in time, and rather heterogeneous as to the structure (region, company’s size). In the case of ROE, the highest value of indicator was found in the category of medium enterprises (17.96%), while microenterprises reached just about 3.99%. Large enterprises gained the highest profitability in ROA (5.36%) and ROS (3.23%), while in the case of ETR they paid the highest tax rate when comparing taxes paid and profit generated (22.3%). In the case of tax/assets relation, the most positive results were revealed in the microenterprises category (0.57%). Generally, the highest proportion of taxes paid per assets was gained in education (1.95%), in the information and the communication industry (1.07%), followed by transportation (1.06%). The lowest proportion was generated by energy production (0.06%) and real estate (0.18%).

The results showed certain evidence about profit-shifting among Slovak companies with a secondary intention to identify potential threats to a sustainable business environment. Some of these issues have never been examined in Slovakia. Thus, they present a good basis for other research, specifically in connection with the size or industry specifications of businesses considered as pillars of the domestic economy.

The results also showed to us (and to public authorities as well) the direct comparison of tax haven linked and non-linked companies. Although we preferred relative indicators instead of absolute ones, thus we do not present differences in the volumes of taxes paid, it still provided an overall picture regarding the profit-shifting efforts in Slovakia, which are becoming increasingly more intensive.

Our research is limited due to a number of factors, which could be divided into three basic categories. The first one concerns the availability of data. By data unavailability, we mainly mean the incomplete list of tax havens provided by Bisnode [52] (missing jurisdictions used by Slovak companies in aggressive tax planning, e.g., the United Kingdom or Mauritius) and the missing financial statements of a certain number of Slovak companies. Many Slovak companies still do not fulfil their legal obligation regarding the uploading of financial statements to the register of financial statements. The second limitation regards the ownership link; our research is focused only on direct ownership links to a tax haven (equity linkage). Companies can shift profits to tax havens even if there is no direct ownership link, e.g., through the use of different ways of invoicing or legal documents and contracts. The third obstacle category contains very frequent changes in the Slovak Income Tax Act during the whole investigated period, mainly regarding the corporate income tax rates, introduction of tax licenses, changes in depreciation groups, or frequent changes in R&D incentives.

We can highlight several practical and theoretical contributions. The main theoretical contribution derived from our analysis is the finding that tax licenses distort tax indicators.

There are many professional and scientific studies focused on profit-shifting out of high or higher-tax countries to tax havens. These studies confirmed that the sustainability of international tax systems is eroded due to the fact that different areas of businesses are growing and developing faster than international tax rules (where to tax and how much to tax). A good example is the development of
digital companies that are growing far faster than the economy at large and this trend is set to continue. It means that digitalization, for example, is putting pressure on international taxation systems as business models change.

Regarding the change of international taxation rules in the area of corporate income tax, the new proposals were introduced by the OECD and the EU. These new proposals are focused on the implementation of new attitudes towards the paying of income tax (partially also in the area of indirect taxes) within EU countries. New concepts were also introduced, e.g., in the digital area as follows: a) New digital concepts of permanent establishment, b) creation of a new system for taxing digital activities and new principles for attributing profits to a digital business (creation of a single digital market), c) introduction of the CCCTB (common consolidated corporate tax base) for large companies based on the formula apportionment, d) amendments of selected provisions in double taxation treaties (DTTs), e) application of all BEPS measures, and f) new approaches to intangibles and transfer pricing [59,60].

As the adoption of these proposals needs the consensus of EU member states, the authors are of the opinion that the only way to implement a change in the international tax system is to engender scientific and professional pressure and provide as much evidence as possible to demonstrate how corporate income tax bases are artificially eroded. This could be achieved through the provision of empirical evidence and indicators, which can be used to measure any potential corporate income tax gaps affected by profit-shifting techniques. The authors to the best of their knowledge consider the submitted analysis as the first evidence of profit-shifting out of the Slovak Republic.

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