

Sectors in the Czech Republic and International Tax Planning

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Abstract. Tax planning and its international dimension is effective way for reducing company's tax liability. Methods used within the tax planning have specific assumptions and not every company can achieve significant tax reduction. Tax planning schemes are strongly connected with intangible assets or capital structure. This contribution is focused on the different sectors and their position in the international tax planning. As a method, the cluster analysis has been selected to gain similar sets with similar sector's attributes. Database Albertina is used as a data source and there are selected variables which are related to the international tax planning. Results show that companies from the service sectors use more tax planning than companies from the others. Cluster analyzes report four sectors with higher application of the tax planning: Accommodation, Real Estate, Financial Sector and Electricity and Gas Supply. ICT is another sector which use tax planning more but the conclusions about it cannot be strong because one of the used clustering method does not include it beside above mentioned four sectors.

Keywords: Tax planning, Sectors, Czech companies.

1 Introduction

Tax avoidance belongs to one of the most important areas when it comes to modern management. Companies try to manage their tax liabilities to reduce them and therefore they apply tax planning activities. Successful tax planning has several assumptions and these activities are not suitable for all companies. Naturally, small businesses with few employees are not able to benefit from the extensive international tax planning. On the other hand, tax liability has a character of a cost for every business entity and every owner wants to have higher shares of profits. Therefore tax avoidance is an important part of the companies' activities and the international dimension shifts these activities further.

Companies from the Czech Republic also use tax avoidance and some of them have parent companies or subsidiaries located in the tax havens. International tax planning is one of the key activities which globalization brings and Czech companies as a part of the open economy have similar opportunities as companies from other

countries. From the perspective of the international tax planning, they can easily establish companies abroad and benefit from the better taxation conditions provided by tax havens' legislations. As in the case of size, the companies from certain sectors can have higher ability to use the tax planning and to gain greater tax savings.

After this introduction, the literature review is in the second chapter. Third chapter is dedicated to used methodology and data within the study. After presentation of the results the two last chapters, which are called the discussion and the conclusion, follow up.

2 Literature Review

Current studies show importance of several factors connected with tax avoidance. First of all, there are frequently used techniques, which basically rest in profit shifting. Profit shifting can be connected with both assets and liabilities. Changes in the assets' or liabilities' structure can help companies to transfer profits into countries with lower tax burden.

As for assets, their structure is connected with relocation of them. Several studies mention mobility of intellectual property assets as an important attribute when it comes to tax planning [10, 18]. Intellectual property assets such as patents or licenses can be easily relocated into different countries and after that group can transfer profits using royalties. Karkinsky and Riedel also show that subsidiaries tend to apply less patents when their tax burden is higher [15]. Moreover, governments, which want to attract companies to move the company in their country, know about the mobility of intellectual property (IP) assets. This is the reason, why tax havens (but not only them) have special regimes of taxation for revenues from IP. This specific regime is often called as IP box and it is applied in several countries such as Ireland, Netherlands or the United Kingdom. Further studies show the importance of these special regimes with connection to the setting a location of patents or research activities [2, 4]. Tax burden becomes the one of the key factor when managers of companies decide about location of their investment, especially in the situation, when the investment have more intangible character.

Loans between two parts of group are relatively often mentioned tax planning scheme [3, 5]. Therefore variables carrying information about them are widely included in analyzes dealing with the tax planning.

Czech companies are part of the data in some of the mentioned studies. On the other hand, the results of them are significantly influenced by more numerous sets of companies from larger countries [13]. Therefore, there are studies which aim only situation connected with Czech companies. First of all, Czech companies use extensively tax havens [17]. Study from Janský and Kokeš is focused on the Czech companies and data from 2010; results show that the ownership relationship with tax haven have positive effect on the debt ratio of Czech company [12]. This can be an indicator of using intragroup loans and with them associated interest payments as way of tax planning. On the other hand, mentioned study does not provide any significant result about effect of these activity to the tax liabilities. From the perspective of the

situation in the Czech Republic, it is also needed to mention the groups' preferences of the headquarters [9]. Whereas there are a lot of subsidiaries of foreign groups in the Czech Republic, profit shifting is more common than in other EU countries.

From the perspective of the sectors, current studies indicate several interesting facts. One of the most important thoughts follows up on the knowledge about the structure of assets. Tax planning is mostly connected with the companies from high-tech sectors with higher importance of the patents and other types of intangible assets [14]. Sector as a determinant of the tax planning is used within several studies [8, 19]. Also the situation of the tax planning in the sector is important for the companies' behavior. Companies from the sectors, where companies use extensively tax planning, are not sensitive on the taxation when it comes to new investment [19].

Some evidence of international tax planning is relevant for the financial sector. Studies [1, 16] show how much banks avoid paying taxes and which countries they use for profit shifting. From the type of sector in general, companies offering services should have better opportunities to use international tax planning than the companies from the sectors, which are strongly connected with tangible assets [12]. On the other hand, when it comes to new investment, manufacturing companies in Germany are more sensitive to the taxation conditions than companies from service sectors [11].

This contribution is focused on the situation of the sectors and their relation to the tax planning in the Czech Republic. More specifically, this paper aims the situation of Czech companies owned by foreign parent companies based in other EU countries. Based on the current state of knowledge, there are some determinants of the tax planning which are considered in further analysis. These tax planning schemes are strongly connected with specific group of assets and liabilities' structure, therefore closer look on the sectors can bring new information about the tax planning in the certain sector. The goal of this paper is to divide sectors into groups from the perspective of the tax planning.

3 Methodology and Data

Groups of sectors with similar characteristic are identified using cluster analysis. Cluster analysis uses distance between objects related to selected variables and based on these distances are calculated objects with similar position. In this analysis, objects are sectors defined based on CZ-NACE [6, 7]. There are some sectors, which were for this analysis divided into several groups because of the broad scope. Mentioned division counts mainly for the manufacturing. The sectors for this analysis are defined as follows: Agriculture; Production of Electricity, Gas etc.; Water Industry; Construction; Transport; ICT; Accommodation; Real Estate; Financial Sector; Professional; Administration; Mining; Culture; Education; Wholesale; Retail; Car Trade; High-Tech Manufacturing; Low-Tech Manufacturing; Healthcare and Other. Presented sectors are the cases within the cluster analysis.

Variables, on which the clustering is made are presented in the following Table 1. Selected variables were used because of the extensive evidence of their importance

for companies' effective tax rates. All data used within the cluster analysis is drawn from the Albertina, database with data from the Czech companies.

Table 1. Variables used within Cluster Analysis. Source: Authors.

Name	Description
Tax Haven	Share of the foreign owned Czech companies with the parent in the tax haven
Taxes	Average of the taxes value divided by sum of revenues
Assets	Median of the natural logarithm of the asset value
ROA	Median of the Return on Assets
Debt Ratio	Median of the debt ratio
Intangible Assets	Average of the share of intangible assets on the fixed assets
Zero Taxes	Share of the companies with zero tax

Whereas the study uses group of the tax havens, it is needed to define the set of them. The study is focusing on EU parent companies of the Czech ones, so the tax havens within this study are EU member countries, which are frequently considered as tax havens. There are five EU countries, which are mostly included in the set of tax havens: Cyprus, Ireland, Luxembourg, Malta and Netherlands [3, 5].

There are many types of cluster analysis, respectively methods of calculations used within them. We use the Euclidean distance and two types of cluster analysis: Ward's method and K-means method.

4 Results

Results are presented by dendrogram or a table. This difference of presentation is caused by different types of methods. Dendrogram is suitable only for the Ward's method from the two which were selected.

4.1 The First Run – All Sectors

Figure 1 presents results of for Ward's method with Euclidean distance. The graph shows that there are five clusters at the half of distance, so there are relatively many of them considering the number of monitored sectors. First dendrogram shows that somehow related sectors are included in the same cluster, e.g. High-Tech and Low-Tech Manufacturing or services like Culture, ICT or Financial sector.

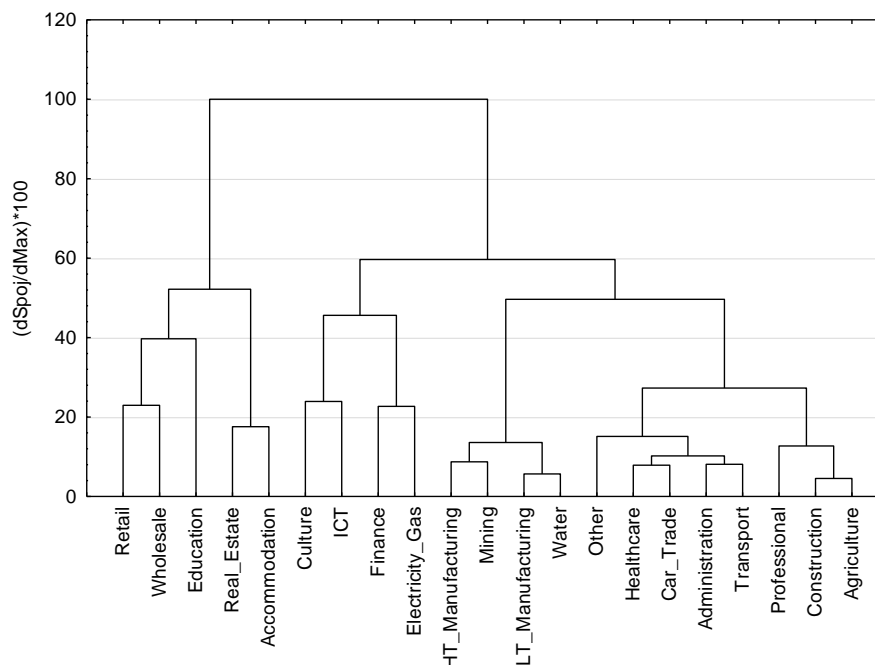


Fig. 1. Ward's Method of Cluster Analysis – the first run. Source: Authors.

First run of the cluster analysis already reports some more important results. First of all, two of the clusters consist only from two sectors (the run with using K-means method – Table 2). Electricity and Gas and Financial sector form together one of the small clusters. These two sectors have high level of companies owned from the tax haven and the companies within these sectors belong to the biggest. Second two-member cluster includes Real Estate and Accommodation. For these two sectors are typical also relatively high level of companies owned from the tax haven and high level of companies with zero tax. Another important fact about this cluster is the value of assets because companies from these two sectors are smaller in comparison with the others' value of assets.

Table 2. K-means Cluster Analysis – the first run. Source: Authors.

Name	Members
Cluster A1	Agriculture, Construction, Professional, Culture, Education, Wholesale, Retail
Cluster B1	Transport, ICT, Administration, Car Trade, Healthcare, Other
Cluster C1	Mining, High-Tech Manufacturing, Low-Tech Manufacturing, Water
Cluster D1	Accommodation, Real Estate
Cluster E1	Electricity and Gas, Finance

Some of the sectors have only a few members because of their characteristics. Therefore we continue with second run of the cluster analysis with reduced data.

4.2 The Second Run – Reduction of the Data

For better understanding of manager behavior, it is important to abstracted from the objects with small amount of members and reduce the number of sectors where every single one have at least 92 companies owned from foreign country which corresponds with at least one percent share of the monitored companies. From mentioned reasons, five sectors and section “Other” were excluded from the second run. Results of the Ward’s method is presented by following Figure 2.

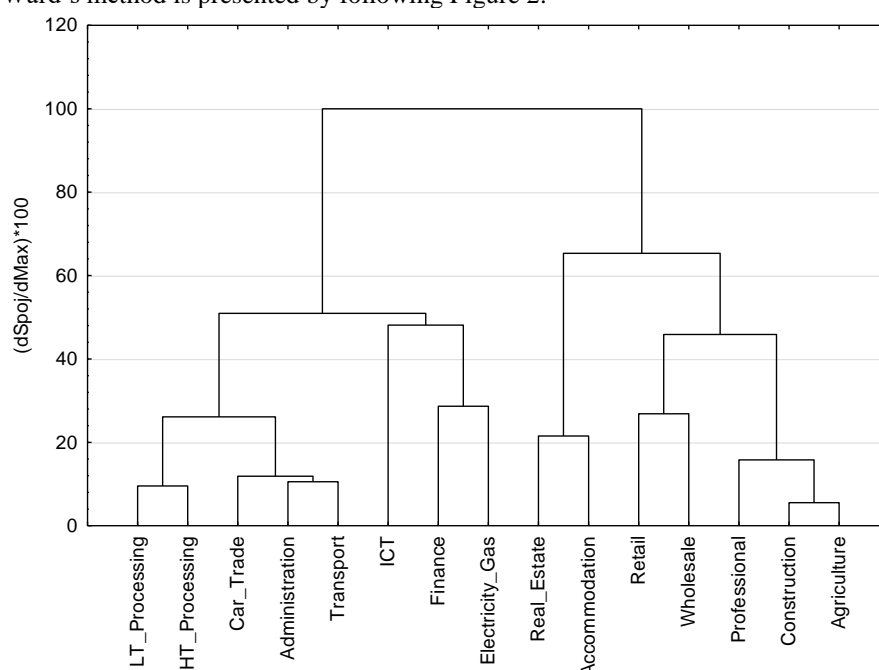


Fig. 2. Ward’s Method of Cluster Analysis – the second run. Source: Authors.

Following Table 3 show the result of the K-means method. Based on the results from the second run, there are two groups of sectors in which companies use tax planning in broader scope. First cluster is formed by Accommodation and Real Estate. At the first sight, these two are relatively close sectors of services and their position in the international tax planning seems to be very similar. Both of them have high share of companies with owner in the tax haven, companies has high debt ratio and they are relatively small in terms of asset value. The second two-member cluster consists from the Financial sector and Electricity and Gas. Companies in these two sectors also use tax havens but there are larger considering the asset value. This is caused by different character of the sectors from these two clusters. Other values for the variables are not

as biased as ones connected with Real Estate and Accommodation. Even though we identify that companies from the Cluster D2 use tax planning more often than sectors in the clusters A2 or B2.

Table 3. K-means Cluster Analysis – the second run. Source: Authors.

Name	Members
Cluster A2	Agriculture, Construction, Professional, Wholesale, Retail
Cluster B2	Transport, ICT, Administration, Car Trade, High-Tech Manufacturing, Low-Tech Manufacturing
Cluster C2	Accommodation, Real Estate
Cluster D2	Electricity and Gas, Finance

Overall, there are some sectors, in which companies are more interested in tax planning activities. From the perspective of the Czech Republic, service sectors are the ones with higher level of the international tax planning. This may be caused also by the economic situation of the each sector.

5 Discussion

Results of this study show significant differences between sectors in terms of using the tax havens. Czech companies from the services' sectors use tax avoidance in greater extent. There is no quantitative variable connected with groups of the sectors which use tax planning. The most important thing seems to be a character of the sector. Service companies are closer to new technologies and they are influenced by globalization more than companies e.g. from the Agriculture or Construction. The differences between service and other companies is also discussed in other studies [11, 12]. Interesting result connected with German companies shows that German service companies have better opportunity to establish company in the tax haven which has real economic activity in the country [11]. This is an important fact which should be discussed also in relation with the Czech Republic: it would be beneficial to find if tax havens' parents have their own real economic activity in the particular country.

Clusters with the companies which used tax havens have slightly higher debt ratio than the others. This result is consistent with the studies showing importance of intra-group loans [3, 5] and with the results connected with Czech companies [12]. On the other hand, there are not much difference in the share of intangible assets. It might be caused by tax planning schemes because companies using tax planning, relocated these types of assets and have the reduced share e.g. of patents than it is usual in the industry.

It has to be take into account that only the companies, which are owned from the foreign country, are studied in this contribution. This link is defined as direct so there are also companies which are not directly owned from the tax havens but have an indirect link to them. Therefore the international tax planning are applied more than the data show at the first sight. On the other hand, the clustering assesses the degree

of similarity of studying objects therefore we can show the sectors' differences even with analysis of this type of data. It is important to emphasize this fact because it brings new opportunities for further studying. When the international tax planning would be analyzed deeper, there can be different ways of it in each sector. Companies from the first one can use the direct link, ones from another indirect. It depends on every sector and every country, in which the company operates. Therefore further studies should consider deeper analysis of the tax avoidance practices in each sector individually.

6 Conclusion

This study shows the importance of taxes and international tax planning in decisions of managers. When the company has an opportunity and can gain a tax advantage, managers tend to use tax avoidance. From the perspective of the Czech companies, especially the service sectors tend to use the tax havens.

The difference between sectors should be considered in every study related to the tax planning, at least at the level of different structure of assets and capital. On the other hand, this study shows that there are other important differences between sectors based on their character. Therefore information about sector is needed for better results of the tax planning analyzes. Further studies should go deeper to identify how sector of the company influences tax planning schemes.

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