CHARLES UNIVERSITY

FACULTY OF SOCIAL SCIENCES

Institute of Economic Studies

Bachelor thesis

2020 **Veronika Sovičová**

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Characteristics of Tax Havens and their Users

Bachelor thesis

Prague 2020

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Academic Year: 2019/2020

Bibliographic note

Sovičová, Veronika. *Characteristics of Tax Havens and their Users*. Bachelor thesis. Charles University, Faculty of Social Sciences, Institute of Economic Studies. 2020. Supervisor doc. Petr Janský, M.Sc., Ph.D.

Abstract

The purpose of the thesis is to address the characteristics of the countries that tend to engage in tax haven practices – both tax havens and their users. In the descriptive part of the thesis, we review a number of common traits of the countries that become tax havens. We mostly focus on the features other than those directly related to provision of financial services, such as bank secrecy or low/non-existent tax rates. Our primary interest are the characteristics that may contribute to the adoption of tax haven status. Subsequently, we employ the method of ordinary least squares to examine the traits of the countries that use tax haven services. Specifically, we are interested whether countries with certain characteristics tend to own greater shares of global offshore wealth than others. We include the traits such as corruption, top marginal income tax rates, inflation, GDP, or country´s distance from Switzerland to examine the relationship. Some of our most interesting findings are that top marginal income tax rates are negatively correlated with the offshore-held amount of wealth and, contrary to common belief, more corrupt countries appear to have lower offshore wealth shares.

Abstrakt

Účelom práce je dotknúť sa vlastností krajín, ktoré majú tendenciu podieľať sa na praktikách daňových rajov - či už samotné daňové raje, alebo krajiny, ktoré ich služby využívajú. V deskriptívnej časti práce ponúkame prehľad spoločných charakteristík krajín, ktoré sa stávajú daňovými rajmi. Predovšetkým sa sústredíme na vlastnosti iné než tie, ktoré sú priamo spojené s poskytovaním finančných služieb – ako napríklad bankové tajomstvo či nízke, až neexistujúce daňové sadzby. Zaujímajú nás hlavne tie vlastnosti, ktoré môžu prispieť k tomu, aby sa krajina stala daňovým rajom. Následne,

pomocou empirického modelu najmenších štvorcov skúmame krajiny, ktoré využívajú služby daňových rajov. Konkrétne nás zaujíma či krajiny s určitými charakteristikami majú vyššiu tendenciu vlastniť podiely v globálnom bohatstve uloženom v daňových rajoch v porovnaní s inými. Pre preskúmanie tohto vzťahu sme zahrnuli vlastnosti ako napríklad korupcia, najvyššie okrajové sadzby dane z príjmu, inflácia, HDP, alebo vzdialenosť od Švajčiarska. Medzi naše najzaujímavejšie zistenia patrí skutočnosť, že medzi sadzbou dane z príjmu a množstvom bohatstva v daňových rajoch je prekvapivo negatívna korelácia a, napriek všeobecnému presvedčeniu, krajiny s vyššou korupciou zrejme majú relatívne nižšie podiely v daňových rajoch.

Keywords

Tax havens, Offshore wealth, Characteristics of tax havens, Offshore investment, Offshore wealth shares, Characteristics of countries with greatest offshore wealth shares

Kľúčové slová

Daňové raje, Bohatstvo v daňových rajoch, Vlastnosti daňových rajov, Investície do daňových rajov, Podiely na bohatstve v daňových rajoch, Vlastnosti krajín s najväčšími podielmi v daňových rajoch

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1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

2. The author hereby declares that all the sources and literature used have been properly cited.

3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague 27.7.2020 **Veronika Sovičová**

Acknowledgments

I am especially grateful to my parents, who encouraged me throughout my studies, and to doc. Petr Janský, M.Sc., Ph.D. for his helpful comments and suggestions.

Institute of Economic Studies
Bachelor thesis proposal

Bachelor's Thesis Proposal

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Notes: Please enter the information from the proposal to the Student Information System (SIS) and submit the proposal signed by yourself and by the supervisor to the Academic Director ("garant") of the undergraduate program.

Proposed Topic:

Who Owns the Wealth in Tax Havens?

Preliminary scope of work:

Research question and motivation

The main research question I intend to study is which countries own major parts of global financial assets held in tax havens and also which off-shore financial centers store most significant fractions of off-shore held wealth of these countries. Moreover, I attempt to use these estimates to shed more light on wealth distribution inequality.

A variety of financial services is provided to wealthy individuals by banks located in off-shore financial centers such as Switzerland, The Bahamas, Cayman Islands, Hong Kong, British Virgin Islands, Singapore and many others. The clients tend to be attracted by relatively low rates of taxation or bank secrecy. Most of these practices are in compliance with the law. However, the wealth is not easily observable in traditional datasets such as national account or tax records. (Zucman, Johannesen, Alstadsæter ,2017) . According to Zucman (2013), approximately 8% of the world´s financial wealth, which was estimated to equal 10% of global GDP is held off-shore. Nevertheless, the proportion of financial assets deposited in tax havens by each country may differ substantially as well as the amount of wealth deposited in each of the most note-worthy off-shore financial centers.

Moreover, since the data on wealth held in tax havens by each country are rarely published, it can be claimed that they are frequently omitted from wealth distribution inequality reports. Furthemore, for tax progressivity reasons, the richest citizens may have strong incentives to underestimate their possessions and hold them off-shore. Therefore, basing the analysis only on tax records without the inclusion of off-shore held assets may result in misleading estimates of wealth accumulation. Encompassing the estimates on the proportion of country´s off-shore held wealth in our calculations may show new perspective on the wealth concentration.

The thesis is aimed to focus substantially on the research presented in 2017 by Gabriel Zucman in his paper named Who Owns the Wealth in Tax Havens? Our intentions is to review the article and to expand the notion to latest years. The main purpose of this paper is therefore to re-estimate the allocation of

global off-shore wealth to particular countries using updated data and apply these results to determine more precisely the truly existing wealth inequality.

Contribution

The thesis expands the work of Gabriel Zucman in his article „Who owns the wealth in tax havens? Macro evidence and implications for global inequality" published in 2017. The author claims that there is significant variance in proportions of amount of off-shore held assets for particular countries- —from a few percent of GDP in Scandinavia, to about 15% in Continental Europe, and 60% in Gulf countries and some Latin American economies. My intention is to collect newly-issued data and re-evaluate the previously conducted estimates for recent years. Furthermore, the existing research conducted by Zucman suggests that since offshore wealth is very concentrated at the top, accounting for it increases the top 0.01% wealth share substantially, even in countries—such as Norway or Denmark—that do not use tax havens extensively. Also, offshore wealth has been proved to have a larger effect on inequality in the U.K., Spain, and France, where, by the author´s estimates, 30%–40% of all the wealth of the 0.01% richest households is held abroad. The author showed that it has dramatic implications in Russia, where the majority of wealth at the top is held outside of the country. However, the existing research mostly covers the data only up to 2010.
Our contribution is thus to use our re-evaluations to update these data for recent years. The results may serve for futher research on global wealth inequality.

Methodology
Our analysis will be based on publicly available data. Specifically, we will obtain the data on the amount of foreing money holdings in Switzerland, which are montly published on the web page of Swiss National Bank. As for other significant off-shore financial centers, the statistic on the amount of wealth deposited in their banks by foreigners can be found on the web page of the Bank for International Settlements. From the data, we will derive multiple figures to illustrate the issues in question. Also, the data on world GDP will be neccessary, since we will compute the amount of financial assets held in tax havens as a percentage of these. They are accessible on the World Bank´s page.

Outline

1. Abstract
2. Introduction
3. Basic information on tax havens
4. The amount of wealth held off-shore
5. Implications for top wealth shares
6. Conclusion

List of academic literature:

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Available at
SSRN: https://ssrn.com/abstract=1279146 or http://dx.doi.org/10.2139/ssrn.1279146

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Content

Introduction

The concept of tax havens may be opaque, probably because it has always been to a certain extent shrouded in mystery. However, the countries that tend to become tax havens as well as the countries that use their services seem to share some common characteristics. The aim of our paper is to review these characteristics to the reader and thus shed some more light on tax haven emergence and their use.

In the descriptive part of the thesis, we would like to focus on the features of tax havens, other than those that are directly related to provision of financial services, such as bank secrecy or low tax rates. Especially, we would like to review the factors than can contribute to a country´s adoption of tax haven practices. We examine how country´s traits such as size, quality of governance institutions or geographical positions influence this process.

Furthermore, we propose an empirical model to examine what are the characteristics of the countries that hold their wealth offshore. The estimates on the global offshore wealth shares were published by Zucman (2018) for 146 world countries. Since the estimates were carried out for households and not, for example, corporations, the household offshore wealth will be of main interest for us as well. We extend the work of Zucman by analyzing the characteristics of these countries. We employ the method of ordinary least squares to find out if there is any factor that is particularly correlated to the volumes of offshore possessions of their residents. Is it the tax rate at the home country an important determinant? Do developing countries have a greater propensity to hold more wealth offshore than the advanced economies? Is there any relationship between high corruption and the offshore wealth shares? We would like to find possible responses to how these and some more characteristics are related to the country´s offshore wealth share.

Finally, we provide a discussion of the obtained results and consider what the likely implications of the findings are.

Also, we would like to emphasize that for the purposes of the thesis, the term country will be used in general meaning in this context and may refer to not only the sovereign states, but also to any geographical region that has its own legal system. That is to say, throughout the thesis we will not distinguish between dependent states

(British Virgin Islands), a special administrative regions (Hong Kong), a component of a federal or confederal state (Dubai), an internal zone to which a special legal regime has been applied (Labuan) or any other type of territory status. Thus, the terms "country" and "political territory" will be used interchangeably.

We contribute to the literature on both characteristics of tax havens and also the countries that use their services. Dharmaphala and Hines (2009) propose an empirical method to examine the characteristics shared among tax haven countries. The authors note that tax havens tend to be small and affluent countries. Also, they point out that the government quality is a crucial factor and that well-governed countries are far more likely to become a tax haven. Slemrod and Wilson (2009) also retain that tax havens are mostly small countries. Mara (2015) suggests that, even if corporate tax rates proved to be significant in their model, the share of services in GDP appears to be even more prominent determinant. The study shows that only the countries with predominantly service-based economy tend to become a tax haven. Dharmaphala (2008) describes their geographical features as well as their legal origins. Hansen and Kessler (2001) examine how the countries´ geographical distribution influences their taxation pattern.

As for the characteristics of the countries of residence of the tax haven investors, Bharadwaj (2017) suggests that the relationship between top marginal income tax rates and offshore wealth share should be positive. In other words, with increasing tax rates the offshore wealth should increase. Moreover, Zucman (2018) points out that countries closer to Switzerland, those rich in natural resources, and those that experienced political and economic instability post-World War II tend to have greater offshore wealth shares.

Descriptive analysis: Driving forces behind a tax haven

Low taxation is not a sufficient factor for a country to become a tax haven (Mara, 2015). The reasons for such scenario can be diverse. There can be geographical, political, or economic factors that influence the country´s acquisition of tax haven status. In effect, various studies have looked into the commonly shared characteristics that generally tend to be linked with tax havens. In this section of the thesis, we would like to review a number of these characteristics, and thus shed some more light on the opaque concept of tax havens. We are particularly interested in what traits these countries tend to share and what factors may motivate a country to adopt tax haven practices.

Smallness

Geographical features, especially size and population of a country seem to play an important role in the process. Various studies, such as Dharmaphala and Hines (2009) propose that tax havens frequently tend to be small countries, mostly with population below one million of inhabitants. Indeed, major tax havens, outside the United States, constitute less than 1 percent of the world's population (Hines, 2005). Allegedly, the average surface in square kilometers is notably lower for tax havens in comparison with non-haven countries. For illustration of the relationship between area and tax rates, find Table 1 below. As we can observe from the table, there are some exceptions to the rule. Specifically, Luxembourg imposes relatively high income tax rate even if it still can be considered a small country. However, it seems natural that country area is a necessary, not a sufficient condition for tax haven status (Hansen, Kessler; 2001).

The reasoning behind the fact that tax havens are usually sparsely populated can be probably explained by the potential tax collection losses that countries with high populations would suffer if they decreased their tax rates. (Dharmaphala, 2008). Therefore, poorly populated countries are more likely to choose to become a tax haven, since in such case the cost of lowering taxes would be relatively less significant compared to the increased cross-border investment attracted by lucrative tax rates (Hansen, Kessler; 2001). Conversely, Desai et al. (2006) suggest that for the firms it can be more convenient to relocate their profits in larger tax havens. The reason for this

is that it can reduce authorities´ suspicions if they pay higher profit taxes in the larger havens, where their activity is more substantial. However, a study by Mara (2015) shows that both population and area´s relationship to the tax haven status is negative – and statistically significant.

As for population distribution in the tax haven countries, Dharmaphala and Hines (2009) claim that the majority of inhabitant of tax havens tend to live within 100 from the coast.

Table 1

Country	Tax rate in percent	Area in km^2
Andorra	10	453
Austria	55	83 856
Bahamas	0	11 396
Bermuda	0	53
Belgium	50	30 518
France	45	543 965
Germany	45	357 042
Luxembourg	45,78	2 586
Monaco	0	2
Netherlands	49,50	33 975
Spain	45	504 750
United Kingdom	45	244 110
United States	37	9 363 125

Table 1 depicts the relationship between country area and the top marginal personal income tax rate. It is updated from Hansen and Kessler (2001) and show the tax rates for 2020. The countries´ areas have not been updated since we believe they remain unchanged. Sources: For Andorra, we used Andorra Highlights 2020 published by Deloitte, Solimano (2020) for Monaco and KPMG tax data for the rest.

High quality government

The country´s smallness needs to be accompanied by another factor in order to successfully apply low tax policies characteristic for a tax haven – high quality government (Dharmaphala, Hines; 2009). There are many small countries who can be also tempted to attract foreign direct investment by implementing appealing tax schedule, but not all of them become tax havens. Dharmaphala and Hines (2009) point out that in their dataset, there are 75 countries under one million of inhabitants and only 31 of them are tax havens. The absence of tax haven practices in these countries do not

seem attributable to their willingness to comply with the international tax norms, as they are not particularly distinct for their conformity whatsoever. The authors find out that the government quality should be the decisive determinant of who becomes a tax haven and who does not. Indices of governance quality include measures of voice and accountability, political stability, government effectiveness, rule of law, and the control of corruption.

In effect, there are almost no poorly-governed tax havens country in the world. Using evidence from US multinational corporations, the authors suggest that countries with high-quality government are more likely to attract foreign direct investment compared to a poorly governed country with the same level of taxation. According to the authors, improving the quality of governance from the level of Brazil to that of Portugal raises the probability of a small country being a tax haven from 26% to roughly 61%. The effect of government quality was proved to be both statistically significant and quantitatively large. Why is there a greater possibility for a well-governed country to become a tax haven than for a poorly governed one? Possible explanation is that the potential returns to becoming a tax haven are greater for well-governed countries. Tax reductions are more likely to accompany higher foreign direct investment flows and economic benefits resulting from them in well-governed countries rather that in poorly-governed countries. This explanation is supported by the evidence from the US firms.

Also, there are some other possibilities that may not be linked with the motivation to become a tax haven per se. Perhaps the well-governed countries have low tax rates so they end up being classified as a tax haven, even if becoming one in order to attract foreign direct investment is not their primary reason to set up low taxes. As countries choose their tax rates and implement policies that make them tax havens, it can be challenging to completely distinguish the factor associated with the tax haven status from those linked to “just“ low taxes. In addition, it can be the case that better-governed countries have more broader tax treaty networks and these treaties help them be more effective tax havens. Another possible explanation is that poorly governed countries experience some constraints in term of institutional capacity to collect tax revenue, therefore they may rely more extensively on corporate taxes, which in turn they might not find sensible to lower.

It is also possible that the observed correlation between government quality and tax haven status stems from that the highly corrupt countries, in order to increase

bargaining power of corrupt government officials in negotiating bribes from tax payers, are motivated to impose higher corporate tax rates. Because of this, countries with higher levels of corruption (which are inherently the countries with worse government quality index), are less prone to becoming a tax haven. Nonetheless, the authors point out that it is not possible to identify the direction of the causality from the data. In reality, do tax havens tend to have better government institutions or does government quality increase the chances of becoming a tax haven? We can not tell with certainty. However, the important point remains that tax haven status and government quality go hand in hand.

Islands

It can be observed that island states oftentimes offer tax haven services, especially small island economies. They can be found around the European periphery (for example, the Channel Islands, Isle of Man, Malta, Cyprus); in and around the Caribbean (Cayman Islands, British Virgin Islands (BVI), The Bahamas, Bermuda); the Pacific (Vanuatu, Cook Islands) and Indian Oceans (Mauritius, Seychelles). Their geographical nature leads them to incline to greater economic openness (Dharmaphala, 2008). The access to sea seems to sea seems to influence their population distribution as well. As Dharmaphala and Hines (2009) claim, the majority of inhabitant of tax havens tend to live within 100 from the coast.

Several of these countries depend to substantial extent on hosting offshore financial centers and offering tax haven services. In extreme case, such as such as the British Channel Island of Jersey, the offshore financial center industry directly employs up to 20% of the local labor force, and the government revenues are composed from over 90% of tax haven activities (Hampton, Christensen; 2002). According to Mara (2015), it is largely related to the fact that islands are mostly small economies, with low population levels and poor natural resources endowment. Therefore, as mentioned above, they are not able to construct large scale industries for the lack of a commercially significant resources and thus they tend to rely on provision of financial services. In effect, as a reaction to OECD´s efforts to combat against harmful tax regimes by imposing sanction on those reluctant to comply with their conditions, such as to broaden the exchange of information with national tax authorities or other reforms regarding the

offshore sector, John Cashen, Chief Finance Officer of the Isle of Man, acknowledged the vulnerability of island's economy by asking “What would we do instead? If the OECD closed us down, we would become depopulated and derelict” (quoted in *The Financial Times*, 2000).

Moreover, the island countries´ prior economic focus and operating as a tax haven seem to be in good synergy. Hampton and Christensen (2002) point out a symbiotic relationship between the financial services sector and pre-existing sectors, especially tourism, that tends to emerge in island countries and favor their transition to tax havens. As the authors state, both of these sectors are supported by warm climate, rapid airline links, presence of attractive hotels, restaurants or shops. The reasoning behind this association is the following. The wealthy tourists would visit the islands attracted by its living favorable conditions, enjoy the lifestyle and establish residence and invest afterwards. Simultaneously, the pleasant climate and lifestyle would attract bankers, accountants and other financial professionals in the same fashion. These would make a contribution to the local skilled labor force, bringing with themselves knowledge and experience. Presence of financial experts would attract even more wealthy clients, bringing into existence a vicious circle.

In addition, as highly frequent types of tax haven geographical territories, small island countries are accompanied by two other types of regions, both of which are distinctive for their smallness. Orlov (2004) notes that apart from small island countries, there are two more overwhelmingly present types of tax haven territories – small inland enclave states (such as Liechtenstein or Luxembourg) and small coastal enclaves (such as Monaco and Hong Kong). The coastal enclaves share their access to sea as a common trait with islands. However, as we can observe, all most typical tax haven territories are small in size.

Proximity to major capital exporters

Regarding the geographical distribution of the tax havens, they can be found all over the world. There are tax havens on every continent, including offshore territories. It illustrates the fact that tax havens are ubiquitous. However, their location is to substantial extent a result of patterns of historical development of tax practices, mainly influenced by the last 100 years. Up until the present day, they retain certain regional

specializations despite the further globalization of business relations due to their geographical position and historical links with certain developed countries, which comprise legal and economic traditions as well. Therefore, Europeans tend to prefer Channel Islands or European tax havens such as Monaco, Liechtenstein or Luxembourg; US taxpayers favor the Caribbean or Latin American havens; Asian taxpayers opt for Hong Kong or Singapore; and Australian taxpayer use Vanuatu or Nauru.

The primary reason for this is probably the spatial proximity to certain financial and trade centers. However, Orlov (2004) states that the proximity to taxpayers will be shortly rendered less and less relevant tax to advances in communication and transportation, which will lead to further geographical spread of different businesses. In turn, the choice of tax haven should be gradually more and more dependent on their tax specialization and proximity to certain target markets, rather than the proximity to clients. According to the author, increasing number of transactions are being made with tax havens located in different parts of the world or even to various tax havens. However, the empirical study by Dharmaphala (2008) disproves the assumption that offshore foreign direct investment flows have been rendered widely footloose and interchangeable thanks to electronic communication. Indeed, the author states that they are more likely to be located in proximity to major capital exporters. This might be surprising, since one could expect the intangible offshore foreign direct investment flows to be generally insensitive to distance in current climate of advanced communication technologies.

In spite of its intangibility, offshore foreign direct investment shows a comparable degree of sensitivity to physical distance as real foreign direct investment. As Haberly and Wójcik (2015) prove, this does not seem to be linked to facilitated long-distance communication due to sharing the same time zone. The authors suggest that the cause is more probably the travel requirements of nominees, directors and other offshore financial professionals, as well as their clients. Apparently, even this most placeless component of foreign direct investment can be nonetheless deeply founded and conditioned by face-to-face interactions. It implies the importance of the feasibility of the in-person confrontation.

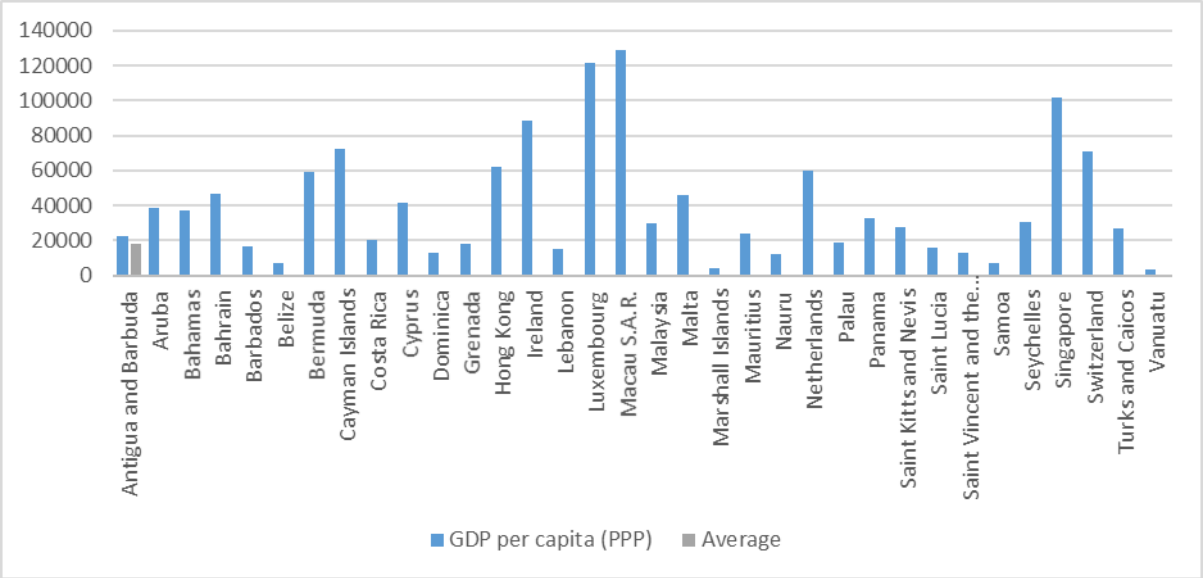
In addition, apart from the classical tax havens that tend to be located closely to a developed country which they “serve“, tax haven practices are also adopted by developed themselves countries as well. There seems to be no clear pattern of their geographical distribution and unlike the classical tax havens, they do not appear to form

clusters. However, the adoption of tax haven practices often follows the specializations of the particular country, which usually stem from its geographical position. For example, United Kingdom and Netherlands have for a long time operated as financial center due to being situated on major trade routes to and from Europe. They probably have adopted the tax haven services as a complement to this specialization (Orlov, 2004).

High GDP per capita

Moving on to the economy-related factors, affluent countries with relatively high GDP per capita tend to exhibit greater propensity to become a tax haven. Again, it has to do with the fact that not all countries can afford to become a tax haven, even if they may desire to attract foreign direct investment with lower tax rates and by that, boost economic growth. The same logic can be applied here as when we discussed population. Poorer countries simply cannot lose the tax revenue that they substantially rely on. For example, when we compare the 46 tax havens identified by the International Monetary Fund in 2008 to the rest of the world, we can observe that the GDP per capita in almost all of these countries is higher than the world average (Mara, 2015). Following the tax haven list published by IMF 2008, a country ranking prepared by Central Intelligence Agency (2020) shows that among the 20 countries with highest GDP per capita (based on purchasing power parity), 11 are tax havens. The IMF list of tax havens is enclosed in Appendix 1.

Graph 1



Graph 1 depicts the comparison of world average GDP per capita with some of the IMF 2008 tax havens in term of purchasing power parity. The source of the data is the World Bank´s webpage. All of the data are for 2019, except for Cayman Islands, Marshall Islands, Palau and Turks and Caicos which are for 2018.The GDP per capita is shown in terms of purchasing power parity in US dollars.

Service-based economy

Tax haven status is often linked to considerably high percentage of services in GDP. As Mara (2015) states, only the countries whose GDP is largely composed of services tend to obtain tax haven status. The author shows that, with a very few exceptions, the share of services in GDP in tax haven countries (roughly 75% on average), is higher than the world mean excluding the tax havens (54,42%). Naturally, after becoming a tax haven, the off-shore finance tends to be one of the main pillars on which their economy lies down, therefore the importance of services in the GDP should not be surprising.

However, it can be claimed that portion of services is essential even before becoming a tax haven. This is substantially linked to another tax haven characteristic – poor natural resources endowment. Given that these countries lack sufficient natural resources, their economy is heavily focused on the services sector. Because of the scarcity of natural resources, they are prevented from relying on industry or agriculture, and are pushed to operate services to sustain their economic growth. Switzerland is a good example: here the mountains cover almost the whole surface of the country, and

apart from wood, there is no other commercially significant resource. Analogous situation can be described in the Cayman Islands. Besides sandy beaches and palm trees that attract tourists, the country has no other natural resources to build the economy on (Mara, 2015).

It is as well possible that the abundance of natural resources escalates the returns to rent-seeking activity, therefore it can lead to lowering the governance institutions quality (Sachs and Warner, 1995), which, as we discuss, is also an important characteristic of tax havens. Also, as natural resources generate economic rent, it can be claimed that the countries which are rich in these resources might be motivated to set relatively high corporate tax rates. Thus, in this scenario they would not become a tax haven. However, as Dharmaphala and Hines (2009) point out, the hypothesis that resource-rich countries tend to impose higher corporate tax rates is not supported by the data.

Another deeply developed sector in tax havens seems to be the communication infrastructure. It has been shown by Dharmaphala and Hines (2009), using the country´s number of telephone mainlines as a proxy for the degree of development of this sector. It appears natural for the tax havens to have well-developed communication infrastructure, as the information exchange with the clients residing abroad is a crucial component of their business.

Use of a major global currency

Forming a monetary union with a widely used currency can be crucial to both the offshore financial center and the host economy. As Hampton and Christensen (2002) note, the Channel Islands, as well as many offshore financial centres, have adopted a major global currency. The independent local currency would have hardly any trading potential and establishing a monetary union with major trading currency can create a relatively risk-free financial environment, and thus serves the interests of financial capital. Moreover, it is alleged to reduce the speed of the crowding-out process of other industries, by which the offshore financial center is enabled to gradually expand into the local economy without accelerating possible social and political resistance. If there is no linkage to a major currency, as a result of the rapid growth of the offshore financial center activity, the local currency operated by the tax haven country, in particular

a small island economy, would unavoidably appreciate in both nominal and real term relative to the trading partner´s currencies. Powell (1997) states that such appreciation would have "significant and severe impact" on the industries reliant upon the financial services sector.

Actually, this effect would resemble the "Dutch disease", as pointed out by Struthers (1990). It is also called "the booming sector model" and it describes a scenario in which traditional trading sectors quickly lose competitiveness in the world markets due to currency appreciation. The phenomenon´s name stems from the its occurrence in the Netherland in the 1960s, where the manufactured export competitiveness was adversely influenced by hydrocarbon reserves exploitation. Other relatively small economies suffered a similar scenario. For example, Heeks (1997) affirms that observations from Brunei support the presence of so-called "spending effect". Here, the additional income from the flourishing minerals/hydrocarbons industry is spent on non-traded services such as education and healthcare, or imported goods. Nonetheless tax haven economies are usually service-based rather than mineral-based, these insights can be applied even so.

Links to Britain

Tax havens substantially differ from non-haven countries in their legal origins and the nature of their political institutions. As for politically-related factors, we would like to mention that tax havens show higher tendency to have British legal origins and are less likely to have French legal origins compared to a non-haven country. In fact, the tendency is so strong that the offshore finance is often referred to as "British second empire" (Haberly, Wójcik; 2015). Interestingly, Shaxson (2011) finds a "spider's web" of havens, located around the city of London : Britain's crown dependencies (Jersey, Guernsey and the Isle of Man), overseas territories that are heavily controlled by Britain (e.g., the Cayman Islands) and more varied array of havens beyond the direct control of Britain but with strong links (e.g., Hong Kong).

Moreover, they are more likely to be a dependent territory rather than a sovereign state (Dharmaphala, 2008). As Haberly and Wójcik (2015) explain, offshore foreign direct investment flows are exceptionally intense between colonial powers and their current and former colonies. Also, they tend to use English as one of the official

languages and have parliamentary system rather than Presidential political systems. Apparently, not only spatial proximity indicates a positive influence on foreign direct investment links, but also cultural proximity as represented by common language (Haberly, Wójcik; 2015). In effect, a number of case studies have shown clusters of physically and culturally proximate economies and tax havens which 'serve' them, such as France-Luxembourg-Monaco, Germany-Luxembourg-Switzerland-Liechtenstein or Spain-Andorra (Donaghy, Clarke; 2003; Sikka, 2003). These differences are however most striking when our focus is restricted to havens and non-havens under one million of inhabitants (Dharmaphala, Hines; 2009).

The likelihood of a tax haven to have British legal origins stems from the historical background. Britain is closely tied in terms of economics and politics to 30 out of 60 listed in by the Financial Secrecy Index. A massive share of the market for offshore services was captured by the British tax haven empire, which comprises former British colonies such as Hong Kong or Ireland. There is a number of reasons that could explain why Britain managed to build successful tax haven empire and thus why tax havens tend to be linked to it.

First of all, the rise of Britain´s imperial power in the nineteenth was largely driven by global trade in financial services, such as banking, insurance and shipping (Cain, Hopkins; 1993).

Secondly, since English Common Law practices were extended to colonial territories, a favorable legal environment emerged there, especially for creation of offshore trust and non-resident companies (Sagar, Christensen, Shaxson; 2013). In effect, the "virtual" residence idea was patented by the British Court and it enabled even the firms that did not have any form of activity there to register in Britain. This method was subsequently adopted by Bermuda and the Bahamas, and enhanced by Cayman Islands (Palan, 2009).

Third, Britain colonized a lot of small islands and microstates throughout its imperial expansion where colonial financial and commercial elites had the opportunity to adjust local policies to their benefit. Also, a number of countries were pushed to adopt tax haven practices by their mother countries. For example, as Moore (1980) states, it appears that the foreign and Commonwealth office was actively encouraging Turks and Caicos in adopting legislation which would assist them in deriving revenue from tax planning and financial services operations. Adoption of tax haven practices helped the former colonies not only to contribute financially to the mother state, but also

to get off the dole. An example can be the case of Cayman Islands. Whereas in the beginning of the 1960, the Cayman Islands was a poorly developed country living on subsidies provided by the United Kingdom. However, in 1982 this country paid a major contribution to cover the expense of the UK in the Falkland War, as in the meantime it became one of the principal tax havens in the Caribbean (Moerman, 1999).

Fourth, concerned about possible long-term liability build-up during its period of the imperial downturn, Britain appeared contented that their colonial outposts, some of which were not able to become independent, were being used as channels for capital coming from outside the sterling area directed towards the City of London. Lastly, the emerging Euromarket in London in the late 1950´s helped reverse the drop of fortunes of the banks of the City of London, which were more than happy to take advantage of the favorable tax regulations and low-tax environment provided by what remained from the Britain´s former empire (Sagar, Christensen, Shaxson; 2013).

In addition, out of the 46 countries on the International Monetary Fund´s (2008) list of tax havens, 16 are former British colonies (Antigua and Barbuda, Bahamas, Bahrain, Barbados, Belize, Cyprus, Dominica, Grenada, Malaysia, Malta, Mauritius, Nauru, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Seychelles, Vanuatu) and 7 are current British overseas territories (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Gibraltar, Montserrat, Turks and Caicos Islands).

Omnipresence

Tax havens are indeed a ubiquitous phenomenon. Curiously, from the historical perspective, Orlov (2004) suggests that nearly all countries of the world (including the contemporary high-tax jurisdictions) have once been, or even continue to be from some viewpoint, a tax haven. As estimated by Dharmaphala and Hines (2009), approximately 15% of the countries are tax havens nowadays. Countries design their tax systems to fit circumstances and opportunities (Hines, 2005). Therefore, in times of economic downturn, the tax haven stage can boost the economic growth attracting more foreign direct investment. Of course, it holds only on condition that the policy is well administrated (Orlov, 2004). Hines (2005) affirms, that the tax haven stage indeed boosts the country´s economy. Evidence suggests that per capita real GDP in tax haven countries grew at an average annual rate of 3,3 percent between 1982 and 1999, in

comparison to the world average of 1,4 percent. As consistently shown by the available indicators, tax haven economies outperform the economies of other countries.

The fact that a country can be considered a tax haven from some viewpoint partially stems from the ambiguity of the term. Whereas some lists may exclude certain havens, other lists include them simply because there is no clear definition of what a tax haven is and the criteria of various academicians or policymakers may slightly differ. Although, usually these criteria tend to overlap to a certain extent, there is some observable variation and thus also a dispute whether or not a given country should be labeled as tax haven. The case of Ireland is a good example. It was included in a dated but nevertheless influential paper by Hines and Rice (1994). Despite its date of issuance, the paper still remains significant today in policymaking circles and is still perceived as accurate by later readers[1]. Even so, a more recent study by (Tobin, Walsch; 2013) proves that its inclusion was deeply flawed since the beginning. Another example might be the US the states of Delaware, Wyoming and Nevada, that according to Gravelle (2013) exhibit certain features of tax havens and usually are not perceived as ones. Gravelle also includes some other countries such as the UK, Denmark, the Netherlands and Portugal, which mostly do not tend to be labeled as tax havens. By this we would like to illustrate, that given the uncertainty of the term and adaptability of tax regimes throughout the historical development, it can be claimed that almost all countries could be or could have been once referred to as tax havens.

[1] Even recent papers by Hines have not intended to update and correct the 1994 paper, for example Desai, Foley and Hines (2012) or Dharmapala and Hines (2009) simply use the original list.

Empirical analysis

Tax havens are of ever-growing importance, as a considerable part of global wealth is hidden in them. According to Zucman (2013), 8% of household wealth, the equivalent of 10% of the world´s GDP, is held offshore. However, this estimate can mask a great amount of heterogeneity related to assigning the possessions to individual countries. To shed some light on where the owners of offshore wealth reside, Zucman (2018) performed the estimates for 146 world countries. The author discovers that the offshore wealth shares can vary from a few percent of GDP in Scandinavia, to about 15% in Continental Europe, and 60% in Gulf countries and some Latin American economies. In the empirical part of our work, we would like to expands these findings to explore whether the countries with certain characteristics tend to have in general higher offshore wealth shares than the rest. We included a number of countries´ features that might possibly affect the individuals´ decision to hide their wealth offshore, such as top marginal income tax rate, inflation, corruption perception index etc. From the available data, we obtained an observable pattern. The tax havens that are encompassed in Zucman´s estimates, and therefore, also ours, can be found in Appendix 5.

Data description

In this section of the thesis, we would like to describe the data used to obtain our estimates. The motivation for including each variable can be found in the section *Model specification*. Here, we would like to focus on data sources. Moreover, we would like to explain why and how we used suitable proxies when the desired data was not available. We created our own datasets compiling various publicly available data sources. Hereafter, we explain the process for each variable more specifically:

The country´s *share* of global offshore wealth:

We obtained the estimates on shares of global offshore wealth broken down for 146 countries from Zucman (2018). These estimates were made for the year 2007, therefore also our analysis examines the causal relationship for this year. Zucman´s paper estimates the offshore wealth owned by households, or in other words, the wealth households hold outside their country of residence. Therefore, our analysis focuses on

the possessions of the (very richest) individuals, not corporations, banks, or non-bank organizations. However, we would like to point out that the estimates disregard offshore non-financial assets, such as real estate or gold. This is, as Zucman states, due to the fact that no systematic information exists on offshore non-financial assets. Therefore, our attention is restricted on households´ financial wealth, which is allegedly the most important form of wealth at the top. Nevertheless, in the process of conducting our analysis we had to drop 8 countries due to missingness in other data sources. Thus, we provide estimates based on a dataset covering 138 countries from those encompassed by Zucman.

The country´s annual *inflation* rate for 2007:

The data is publicly available on the World Bank´s website. The inflation rate was measured based on changes in Consumer Price Index. Generally, the Laspeyer´s formula was used. We used this source to cover all countries of interest.

The country´s *GDP* for 2007:

This information was also included in the dataset published by Zucman (2018). The GDP is expressed in billions of US dollars.

The country´s *population* for 2007:

This data was also downloaded from the World Bank´s website. We used it to cover all countries in our dataset. The population is expressed in millions of inhabitants.

Whether the country is an *island*:

We used a dummy variable, which equals 1 if the particular country is an island or 0 otherwise. We took the data from the CIA World fact book.

Whether the country is *developing*

We obtained the data from an article published by Janský and Palanský (2019). We marked the dummy variable as 1 if the country was labelled as developing or 0 otherwise.

The country´s top marginal *personal income tax* for 2007

Here we had to combine various datasets to cover as much countries as possible. For a number of countries, the data for 2007 were unavailable, therefore we decided use the rate for the closest available year as a proxy in order to involve the greatest possible amount of countries. Firstly, we managed to cover 34 countries using publicly available data issued by OECD. Secondly, our next source was a dataset[2] of historical income tax rates that helped us cover majority of countries. For the rest, we used information published by Andrew Young School of Policy Studies (2010). The detailed information on respective data source and year of the closest available data is available in the Appendix 2.

Country´s adjusted *corruption* index

To measure the level of corruption present in a country, we chose the most widely used indicator of corruption worldwide: The Corruption Perception Index[3], computed by Transparency International. This index scores and ranks countries or territories based on how corrupt a country´s public is perceived to be by business executives and experts. However, we adjusted it for interpretational purposes as described in section *Model specification*.

Country´s *distance* from Switzerland

To measure the distance between the capital cities of a particular country and Switzerland, we used CEPII´s Geodist database[4]. The distance is expressed in hundreds of kilometers.

[2]Available at https://tradingeconomics.com
[3]Available at https://www.transparency.org/en/cpi/2007/results
[4] Available at http://www.cepii.fr/CEPII/en/publications/wp/abstract.asp?NoDoc=3877

Model specification

This section of the thesis is devoted to explaining the rationale behind the model design. Our intention is to estimate the magnitude of the influence of various country characteristics on the amount of its share in total offshore wealth. We present the formula below.

$$Sharetotal_i = \beta_0 + \beta_1 Inflation2007_i + \beta_2 GDP2007_i + \beta_3 Population_i + \beta_4 Island_i + \beta_5 Incometaxtop_i + \beta_6 Corruptionindexadj_i + \beta_7 Distance\_from\_switzerland_i + \beta_8 Developing_i + u_i$$

To obtain our estimates, we included the following explanatory variables:

The country´s annual *inflation* for 2007

We decided to include this variable because we retain that it might influence the individual´s choice to escape excessive taxation in their home country. Especially, if the country applies progressive taxation policy, which is the case for majority of countries in our sample. In such scenario, with increasing inflation an individual might fall in an upper taxation bracket, assuming these are not immediately adjusted to inflation. However, in reality the tax-payers do not become any wealthier in real terms and have to face a greater tax burden, as explained by Buchanan (1974). Therefore, in order to avoid this, they might choose to hide some of the wealth in a tax haven. We thus expect the inflation to be positively correlated with the global offshore wealth share. The positive relationship is also supported by Crane and Nourzad (1986), who suggest that higher inflation encourages tax evasion.

The country´s *gross domestic product* for 2007 in billions of US dollars

We suppose that greater economies also own greater share of global offshore wealth. That said, we anticipate that the sign of β_2 should be positive.

The country´s *population* in 2007 in units

The logic behind this factor is that more populated countries may produce more wealthy individuals, such that they would also make a greater part in global offshore wealth possession.

Whether the country is an *island*

Oftentimes island countries are claimed to have a much higher probability of becoming a tax haven. We were curious what might be the relationship from the opposite side, e.g. how the fact that we deal with an island country affects its offshore possessions. Our expectations for this coefficient are that it should be negative, since as we already mentioned, island countries arguably have a higher tendency to become a tax haven (e.g. Dharmaphala, Hines; 2009).

Top marginal personal *income tax rate* for 2007 (or the closest available year)

This variable was included since we presume a clearly positive relationship between top marginal income tax rate and the amount of offshore possessions. It can be claimed that higher taxes motivate individuals to seek possibilities to avoid or at least diminishing them. We chose to work with personal income taxes (and not for example corporate taxes), because the estimates for offshore wealth volumes that we use in our dataset evaluate the belongings of households, and not corporations. Also, since there is progressive taxing policy in most of the sampled countries instead of one flat tax rate, we chose to include the highest, top marginal tax rates. Our rationale behind this decision is that the tax haven services are predominantly used by the very richest individuals, therefore we chose the tax rates that should regard them.

The country´s adjusted *corruption index* for 2007

This variable reflects the level of corruption in a certain country. The word "adjusted" refers to our modification of original corruption index. Originally, the corruption index that is publicly available online denotes greater levels of corruption with lower numbers. We modified it to work on "more is more" basis, purely for interpretational purposes. Therefore, our expectations are that the β_6 should have a positive sing. Specifically, our intuition is that in more corrupt countries, there may emerge greater number of individuals who generated vast amount of wealth in a dishonest way and thus have higher motivation to hide it offshore. Also, tax evasion, which is often believed to be the purpose of using tax havens, is considered a corrupt behavior itself (Akdede, 2011).

The country´s *distance from Switzerland* in kilometers

We hypothesize that the country´s proximity to a tax haven might positively influence its inhabitants´ decision to use the havens´ financial services. The possible reason can be a greater comfort of spending less time travelling to the country in a case of necessity. Therefore, we expect there to be a negative relationship between this and the dependent variable. The greater the distance, the lower the wealth held in the haven. The reason why we chose Switzerland is simply because it stores the greatest amount of foreign deposits among all tax havens (Zucman, 2018). According to Zucman (2011), it hosts one third of the global household offshore wealth.

Whether the country is labelled as *developing*

This dummy variable reflects whether the country in question is labelled as developing or not. Since developing countries are as a rule poorer (if not the poorest) ones, we assume that they might as well own lowest shares of offshore wealth. Also, as in the developing countries the tax enforcement is weaker according to Piketty and Saez (2006) or Besly and Persson (2014), the individuals might be less motivated to avoid high taxes. Thus, we anticipate β_8 coefficient to have a negative sign.

Methodology

We performed the estimation employing standard Ordinary Least Squares (OLS) procedure on a sample of 138 observations of 8 variables. We decided to use the Ordinary Least Squares method since our dataset consists of cross-sectional data at one point in time. The R software was used for performing all the estimates. Before presenting the obtained results, we would like to verify the OLS key assumptions, following the framework in Wooldridge (2008).

1. As we can see, the formula is obviously linear in parameters. Therefore, it can be argued that the linearity assumption holds here.
2. Our sample contains 138 countries with diverse characteristics. We include developing as well as developed countries, highly populated countries along with those with lower levels of population, representants of each continent, world´s most productive countries as well as smaller economies, island countries in addition to those continental... Thus, we believe that our sample is diversified enough to claim it avoids any kind of selection bias. Therefore, we suppose it meets the random sampling assumption.
3. In relation to the no perfect collinearity assumption, we can argue that none of our independent variables is a constant not a perfect linear combination of others. Thus, this assumption seems to be fulfilled as well.
4. We can argue, based on the correlation matrix in Appendix 3, that none of the explanatory variables is correlated with the error term u. That is to say, we do not have and endogenous variable present in our model. We can assume that the error term has the expected values of zero, and therefore the zero conditional mean assumption, $E(u \mid x) = 0$, holds.
5. As for the homoskedasticity assumption, we carried out a standard Breusch-Pagan test to find out whether or not heteroskedasticity is present in our model. Specifically, homoskedasticity requires the variance of residuals to be constant, e.g. $Var(u \mid x) = \sigma^2$.

   To perform the test, we first estimated the following regression:

$$\widehat{u^2}_i = \alpha_0 + \alpha_1 Inflation2007_i + \alpha_2 GDP2007_i + \alpha_3 Population_i + \alpha_4 Island_i + \alpha_5 Incometaxtop_i + \alpha_6 Corruptionindexadj_i + \alpha_7 Distance\_from\_switzerland_i + \alpha_8 Developing_i + e_i$$

Here we included the independent variables from our model. The $\widehat{u^2}_i$ are the squared OLS residuals from the model, and e_i are the residuals from the Breusch-Pagan test regression.

We construct the following hypotheses:

1. H_0: Homoskedasticity ... $\alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_4 = \alpha_5 = \alpha_6 = \alpha_7 = 0$
2. H_1: Heteroskedasticity... At least one of the alpha coefficients is different from 0.

After conducting the Breusch-Pagan test we observe that the p-statistic is very close to 0, and therefore we can reject the null hypothesis on 1% significance level. The associated results are enclosed in Appendix 4. It means that the variance of the error term is not a constant and varies across observations of the dataset. Since the homoskedasticity assumption is violated, it is necessary to compute heteroskedasticity-robust standard error, which we report in the result presentation instead of the original ones.

6. The normality assumption, or in other terms $u \sim N(0; \sigma^2)$, is inherently violated in our data since the heteroskedasticity is present. Even so, we still hope to provide unbiased and asymptotically normal estimates, since we operate on a large enough sample.

Since apparently all the required conditions hold, we can employ the standard ordinary least squares method.

Estimation results

In this section, we would like to interpret the results of estimating our model. We provide the estimation results with robust standard errors below.

	Estimate (Robust Standard Error)
Intercept	0,0079949 ** (0,00361601)
Inflation2007	-0,013357 (0,012871)
GDP2007	0,00001418 *** (0,0000011774)
Population	-0,000019926 *** (0,0000064635)
IslandTRUE	0,0029192 (0,003553)
Incometaxtop	-0,00011194 *** (0,000041887)
Corruptionindexadj	-0,00061588 (0,00047766)
Distance_from_switzerland	-0,000065637** (0,000029597)
DevelopingTRUE	0,0033845 * (0,0018713)
N	138
R^2	0,8081

Notes:
*** - The effect is statistically different from zero at 1% level.
** - The effect is statistically different from zero at 5% level.
* - The effect is statistically different from zero at 10% level.

As we can observe, the most statistically significant variables are the country´s gross domestic product for 2007 along with its population and the top marginal personal income tax rates. They are statistically different from zero even on 1% level. The effect of GDP is consistent with what we expected. Apparently, greater economies in the world have a tendency to own greater shares of offshore wealth. Specifically, with a rise in yearly GDP of one billion, one can expect the country´s share to increase roughly by 0,0014%. As we see, its impact is not quantitatively large. As for the country´s population, we originally expected a positive correlation with the dependent variable. Nonetheless, it seems that with growing population, country´s offshore wealth declines. Its effect is however, even if significant, not particularly strong. Specifically, if the country´s population increases by one million of inhabitants, we can expect it to have 0,002% more in global offshore wealth shares. Regarding the top marginal income tax rate, it appears that with its 10% raise, a country can be expected to own 0,0011% less of offshore wealth share. The coefficient´s sign is as well opposed to our expectations.

Distance from Switzerland, as the country where most off shore wealth is hidden (Zucman, 2011), appears to be significant on 5% level. Apparently, the sign is negative. Therefore, the smaller the distance, the greater share of offshore wealth in Switzerland owned by its residence. This finding is in line with what we anticipated. However, it probably does not have a particularly strong impact on offshore wealth share. It can be claimed from the results that, other factors held equal, a country that is 100 km more distant from Switzerland than another country, is estimated to own approximately 0,0066% less in offshore wealth shares. In addition, the intercept shows to be significant on 5% level as well. Besides, it gives us the following information. If all the other factors are equal to zero, the country´s total share of offshore wealth is estimated to be circa 0,0079, which in other terms is roughly 0,8%.

The developing country dummy proved to be statistically different from zero on 10% level. The sign of the associated coefficient is opposed to what we originally anticipated. As we can see, the fact that a country is labelled as developing increases its estimated offshore wealth shares by 0,33845%.

The fact that a country is an island together with its annual inflation in 2007 and adjusted corruption index seem to be statistically insignificant. However, we find the signs related to all of these variables surprising. In fact, they are in opposition to what we previously expected. Contrary to our belief, higher levels of inflation are associated with lower share in global offshore wealth, being an island is apparently related to higher offshore wealth shares and corruption does not contribute to offshore wealth holdings. Nonetheless, even if inflation turns out to be insignificant, it has quantitatively the strongest effect on the explained variable.

Discussion of results

The estimation showed very interesting results, some of which we find quite counterintuitive. Specifically, the negative relationship between income tax rate and offshore wealth share was one of those most surprising. Not only does it oppose our expectation, but it also contradicts previous research regarding this question, such as Bharadwaj (2017). However, according to the author, this variable can be considerably model or sample sensitive. Nevertheless, there is an interesting implication of this result. Since increasing tax rates could be a determining factor for individuals whose purpose of storing their wealth in tax havens is tax-avoidance, it seems that it is not the main motivation to use them after all. It is possible that wealthy individuals use tax havens more extensively as a means of moving fund out of the country just to be able to invest them in other financial instruments. Another possible explanation is proposed by Cassou (1997). A higher income tax rate will probably reduce domestic savings of individuals, which in turn will not be available for investing in tax havens. In such scenario, the negative sign should hold.

The relationship between offshore wealth shares and corruption is also in opposition to our intuition, since public perception of high levels of corruption is often associated with high levels of tax evasion (Cobham, 2012). One possible explanation of the findings could be that with increasing corruption in a country, its offshore wealth shares tend to decrease because in a more corrupt environment, wealthy individuals are enabled to employ illicit financial practices even without the need to include a tax haven in the process. This can potentially suggest that the motivation to use tax havens for unlawful operations could be not the most influential determinant.

As capital flight is often positively related to inflation (Ndikumana, Boyce 2003), we are surprised to see that offshore wealth shares and inflation are negatively correlated. It appears that most of the inflation-motivated capital flight is not directed to the tax havens. Also, it contradicts the notion that inflation induces tax evasion (Gordon, Hines; 2002). For now, we are not able to explain why the relationship is negative and we leave the question for future research.

The proximity to Switzerland seems to play an important role in individual´s decision making process whether or not to store their wealth in this country. It can be possibly because it is easier for the individual to travel to Switzerland in case of necessity if they reside closer to it. The distance sensitivity of offshore deposits is supported by Dharmaphala (2008) and the reason being the travel requirements is suggested by Haberly and Wójcik (2015), as we explain in more detail in section *Driving forces behind a tax haven – Proximity to major capital exporters*. This estimate is in line with the findings in Zucman (2017), where the author also suggests a significant negative relationship between distance from Switzerland and offshore-held wealth.

The island countries having higher propensity to own off-shore wealth is also surprising, since they are commonly believed to be usually on the other side, that is to say, the tax haven countries (Dharmapala, Hines; 2009). However, it can be argued that their citizens may precisely for this reason be more familiar with the concept of tax havens and opt to use other tax haven countries for purposes other than tax avoidance, since it would not make much sense as their home country already provides low taxation. Or also, they might want to take advantage of lower tax rates of a specific tax that they country does not provide.

We find the positive sign associated with developing country dummy unexpected too. However, according to Islam and McGillivray (2020), country´s economic growth is negatively related to the wealth distribution inequality. Therefore, it can be claimed that in developing countries the wealth distribution inequality is more persistent and the wealth is often concentrated at the very top, and since the richest individuals are widely believed to be precisely those who tend to store their financial

possessions in tax havens (Johannesen, 2014), it may explain why developing countries seem to have generally greater tendency to own off-shore wealth.

One can argue that our estimation shows contradictory results. Especially for the coefficients of GDP and the developing country dummy. How can a country be more likely to own offshore wealth with growing GDP, but at the same time be more likely to own offshore wealth if it is a developing country? We would like to point out that a country can be labelled as developing based on its GDP per capita, not its GDP as such. In fact, developing countries can sometimes have higher GDP than developed economies. For example, the GDP of Brazil was 1 397,1 billion of US dollars in 2007, whereas the GDP of Belgium was "only" 471,8$ bln. However, when it comes to GDP per capita, the one of Belgium is more than 6 times higher than the one of Brazil.

With our work we contribute to the literature on tax havens, capital flight and foreign direct investment to tax havens. Specifically, in the descriptive part of our thesis, we review a number of tax haven countries´ traits other than those directly related to the provision of financial services. We describe how the country´s size, geographical position, historical background, legal foundations, government quality or economy composition can affect the country´s acquisition of tax haven status. We mostly build upon the work of Dharmaphala and Hines (2009), Mara (2015) and Dharmaphala (2008). In the empirical part of the thesis, we contribute to literature on capital flows to tax havens, global offshore wealth shares and individuals´ incentives to hold their wealth offshore. We particularly extend the work of Zucman (2018). The author´s estimates on household global offshore wealth shares attributable to each country are used in our regression to examine whether the countries with certain characteristics tend to own more offshore wealth than other countries.

Conclusion

The purpose of our paper was to shed some light on countries´ characteristics related to the concept of tax havens – both the tax havens themselves as well as the countries that tend to use their services. We reviewed various features of the countries that have a tendency to adopt tax haven practices. Our main focus were the traits other than those directly related to the provision of financial services, such as bank secrecy or low tax rates. We described how geographical, historical, cultural and economic factors can affect the acquisition of the tax haven status.

Subsequently, we proposed an ordinary least squares model to address a number of countries´ characteristics to identify which of them tend to use the tax haven services most. Specifically, we were interested if the countries with certain characteristics own in general greater offshore wealth shares than others. To perform the analysis, we used the estimates on countries´ offshore wealth shares published by Zucman (2018) owned by individuals. We obtained a number of surprising results. For example, we discovered that offshore wealth shares are negatively correlated with annual inflation rate, corruption present in the country and its top marginal income tax rates. The most statistically significant variables proved to be the country´s GDP along with its population. Their effects are positive as expected, however, they are not particularly strong. Moreover, we affirm a negative and statistically significant relationship between the distance from Switzerland and offshore wealth share, which has been stated before. Our findings suggest that, other thing equal, a country that is one hundred kilometers closer to Switzerland, is expected to have 0,0066% more in global offshore wealth shares. However, even if statistically insignificant, the most quantitatively impactful factor turns out to be the annual inflation rate.

Possible future research may extend our model with more characteristics, such as natural resources endowment or political and economic instability after World War 2, which should be both, according to Zucman (2018), positively linked to offshore wealth shares.

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List of appendices

Appendices

Appendix 1. List of tax havens, prepared by the International Monetary Fund (2008)

Country/jurisdiction	Country/jurisdiction
1. Andorra	25. Luxembourg
2. Anguilla	26. Macau S.A.R.
3. Antigua and Barbuda	27. Malaysia (Labuan)
4. Aruba	28. Malta
5. Bahamas	29. Marshall Islands
6. Bahrain	30. Mauritius
7. Barbados	31. Monaco
8. Belize	32. Montserrat
9. Bermuda	33. Nauru
10. British Virgin Islands	34. Netherlands Antilles
11. Cayman Islands	35. Niue
12. Cook Islands	36. Palau
13. Costa Rica	37. Panama
14. Cyprus	38. Saint Kitts and Nevis
15. Dominica	39. Saint Lucia
16. Gibraltar	40. Saint Vincent and the Grenadines
17. Grenada	41. Samoa
18. Guernsey	42. Seychelles
19. Hong Kong	43. Singapore
20. Ireland	44. Switzerland
21. Isle of Man	45. Turks and Caicos Islands
22. Jersey	46. Vanuatu
23. Lebanon	
24. Liechtenstein	

Appendix 2: Data sources of top marginal income tax rate data with the closest available years (table)

Country	*Source*	*Year*
Afghanistan	*2*	*2007*
Albania	*2*	*2007*
Algeria	*3*	*2005*
Angola	*2*	*2007*
Argentina	*2*	*2007*
Armenia	*2*	*2007*
Australia	*1*	*2007*
Austria	*1*	*2007*
Azerbaijan	*2*	*2007*
Bangladesh	*2*	*2007*
Belgium	*1*	*2007*
Benin	*3*	*2005*
Bhutan	*2*	*2007*
Bolivia	*2*	*2007*
Bosnia and Herzegovina	*2*	*2007*
Botswana	*2*	*2007*
Brazil	*2*	*2007*
Bulgaria	*2*	*2007*
Burkina Faso	*3*	*2005*
Burundi	*3*	*2005*
Cabo Verde	*3*	*2005*
Cambodia	*3*	*2005*
Cameroon	*2*	*2007*
Canada	*1*	*2007*
Central African Republic	*3*	*2005*
Colombia	*2*	*2007*
Congo	*3*	*2005*
Congo (Democratic Republic of the)	*2*	*2007*
Côte d'Ivoire	*2*	*2007*
Croatia	*2*	*2007*
Cuba	*3*	*2005*
Czech Republic	*1*	*2007*
Denmark	*1*	*2007*
Dominican Republic	*2*	*2007*
Ecuador	*2*	*2007*
Egypt	*2*	*2007*
El Salvador	*3*	*2005*
Equatorial Guinea	*2*	*2008*
Estonia	*1*	*2007*
Ethiopia	*2*	*2007*
Fiji	*2*	*2007*
Finland	*1*	*2007*
France	*1*	*2007*
Gabon	*2*	*2008*
Georgia	*2*	*2007*
Germany	*1*	*2007*
Ghana	*2*	*2007*
Greece	*1*	*2007*
Guatemala	*2*	*2007*
Guinea	*2*	*2007*
Haiti	*3*	*2005*
Honduras	*2*	*2007*

Hungary	*1*	*2007*
Chad	*3*	*2005*
Chile	*1*	*2007*
China	*2*	*2007*
Iceland	*1*	*2007*
India	*2*	*2007*
Indonesia	*2*	*2007*
Iran (Islamic Republic of)	*3*	*2005*
Iraq	*2*	*2009*
Ireland	*1*	*2007*
Israel	*1*	*2007*
Italy	*1*	*2007*
Jamaica	*2*	*2007*
Japan	*1*	*2007*
Jordan	*2*	*2007*
Kazakhstan	*2*	*2007*
Kenya	*3*	*2005*
Korea (Republic of)	*1*	*2007*
Kuwait	*2*	*2007*
Kyrgyzstan	*3*	*2005*
Lao People's Democratic Republic	*3*	*2005*
Latvia	*1*	*2007*
Lesotho	*2*	*2007*
Libya	*2*	*2009*
Lithuania	*1*	*2007*
Macedonia (the former Yugoslav Republic of)	*2*	*2007*
Madagascar	*2*	*2007*
Malawi	*2*	*2007*
Mali	*3*	*2005*
Mauritania	*2*	*2007*
Mexico	*1*	*2007*
Moldova (Republic of)	*2*	*2007*
Mongolia	*3*	*2005*
Morocco	*2*	*2007*
Mozambique	*2*	*2007*
Namibia	*3*	*2005*
Nepal	*3*	*2005*
Netherlands	*1*	*2007*
New Zealand	*1*	*2007*
Nicaragua	*3*	*2005*
Niger	*3*	*2005*
Nigeria	*3*	*2005*
Norway	*1*	*2007*
Oman	*2*	*2007*
Pakistan	*2*	*2007*
Paraguay	*3*	*2005*
Peru	*2*	*2007*
Philippines	*2*	*2007*
Poland	*1*	*2007*
Portugal	*1*	*2007*
Qatar	*2*	*2007*
Romania	*2*	*2007*
Russian Federation	*2*	*2007*
Rwanda	*2*	*2007*
Saudi Arabia	*2*	*2007*
Senegal	*2*	*2007*
Serbia	*2*	*2007*

Sierra Leone	*2*	*2007*
Slovakia	*1*	*2007*
Slovenia	*1*	*2007*
South Africa	*2*	*2007*
Spain	*1*	*2007*
Sri Lanka	*2*	*2007*
Sudan	*2*	*2007*
Suriname	*3*	*2005*
Swaziland	*2*	*2007*
Sweden	*1*	*2007*
Syrian Arab Republic	*2*	*2007*
Taiwan	*2*	*2007*
Tajikistan	*2*	*2008*
Tanzania, United Republic of	*2*	*2007*
Thailand	*2*	*2007*
Togo	*3*	*2005*
Trinidad and Tobago	*3*	*2005*
Tunisia	*2*	*2007*
Turkey	*1*	*2007*
Turkmenistan	*3*	*2005*
Uganda	*2*	*2007*
Ukraine	*2*	*2007*
United Arab Emirates	*2*	*2007*
United Kingdom of Great Britain and Northern Ireland	*1*	*2007*
United States of America	*1*	*2007*
Uzbekistan	*2*	*2007*
Venezuela (Bolivarian Republic of)	*2*	*2007*
Vietnam	*2*	*2007*
Yemen	*2*	*2007*
Zambia	*3*	*2005*
Zimbabwe	*2*	*2007*

Data sources:

1 - OECD (2020), Tax on personal income (indicator).

2 - available at https://tradingeconomics.com

3 - Andrew Young School of Policy Studies (2010)

Appendix 3: Correlation matrix (table)

	GDP2007	Sharetotal	Population	Island	Corruption indexadj	Incometaxtop	Distance_from _switzerland	Inflation2007
GDP2007	1							
Sharetotal	0,887***	1						
Population	0,355***	0,183*	1					
Island	-0,038	-0,013	-0,035	1				
Corruptionindexadj	-0,362***	-0,385***	0,011	0,093	1			
Incometaxtop	-0,019	-0,025	-0,016	-0,024	0,037	1		
Distance_from_switzerland	-0,001	-0,096	0,080	0,211*	0,199*	-0,033	1	
Inflation2007	-0.139	-0,171*	0,012	0,036	0,260**	-0,086	0,058	1
Developing	-0,251**	-0,256**	0,081	0,110	0,573***	0,060	0,436***	0,124

Appendix 4: Breusch-Pagan test result (table)

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Breusch-Pagan test

BP = 184.71, df = 8, p-value < 2.2e-16
```

Appendix 5: Tax havens encompassed by Zucman (2018)

***American havens**:* Cayman Islands, Panama, part of US

Asian havens: Bahamas, Bahrain, Bermuda, Hong Kong, Macao, Malaysia, Netherlands Antilles, Singapore

***European havens**:* Cyprus, Guernsey, Jersey, Isle of Man, Luxembourg, part of Austria, Belgium & UK